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PERCEPTIONS ON THE SUSTAINABLE TRANSITION OF MAASSLUIS

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CLIENTS:

Erfgoedkwartiermakers

LDE Center for Global Heritage and Development

Maassluis inner port

EXECUTIVE SUMMARY

Duurzaam Consultancy is a group of student consultants from Leiden University commissioned by Erfgoedkwartiermakers and LDE Centre of Global Heritage & Development. 'Duurzaamhaven' translates to 'sustainable port' in Dutch, indicating its orientation towards sustainable transition of ports. Currently, the research conducted is focused on the sustainable transition of the harbour of heritage port city Maassluis in the Netherlands.

In the face of urban decline and the rising threat of climate change, the historic port city of Maassluis has the dilemma of preserving its maritime heritage while carrying out its sustainable transition. In collaboration with the Erfgoedkwartiermakers Coöperatie and the Leiden-Delft-Erasmus (LDE) Centre for Global Heritage and Development, Maassluis is innovating its harbour to lower its CO2 emissions whilst honouring maritime heritage and making the city attractive for future residents. This is done in collaboration with different stakeholders. These stakeholders include the tugboat associations and their volunteers, relevant private sector businesses, the municipality of Maassluis, the Erfgoedkwartiermakers, and others.

This research will investigate the potential challenges and opportunities concerning the sustainable transition of the Maassluis harbour. The challenges and opportunities will be identified by analysing the public perception of the project of making Maassluis harbour sustainable (along with other relevant topics that relate to the goals of Erfgoedkwartiermakers and the Municipality of Maassluis). By utilising the methods of literature review and conducting interviews with stakeholders and experts in relevant fields, this study aims to identify the attitudes, technologies, and public policies that may inhibit or contribute to the sustainable transition of the city harbour. Results from these methods of research will be presented in the format of a matrix. Additionally, these results will contribute to recommendations pertaining to policy and technologies in the Maassluis harbour.

Keywords: Maassluis, Sustainable Transition, Sustainability, Urban Decline, Maritime Heritage, Maas River, The Netherlands, Leiden University

DISCLAIMER

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This report has been written by BSc students from the Minor Sustainable Development of Leiden University in partial fulfillment of their course requirements. This is a student report, intended to serve solely the purpose of education. Leiden University does not take responsibility for the contents of this report.

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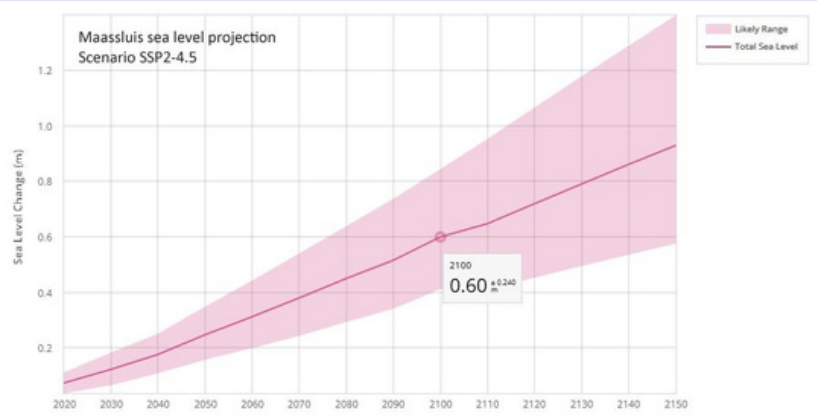
I. INTRODUCTION

In the face of the impeding climate crisis, countries around the world are undertaking governance initiatives to reduce the anthropological impact on the planet. There is greater pressure on member nations of the European Union – such as the Netherlands – to do so, given that the EU is responsible for 22% of cumulative greenhouse gas emissions (Ritchie, 2019). For EU countries such as the Netherlands - whose industrialisation was greatly aided by its trade – this particularly impacts its port cities (Paiges-Sanchez and Daamen, 2020). Despite the challenge of making port cities sustainable – as their economies are traditionally centred around fossil fuels – it is an important factor in countries' sustainable transition.

This research will focus on the harbour of Maassluis, a small port city located in the Zuid-Holland province of the Netherlands. Founded around the sluice constructed on the sea dike, the historic tugboats are a proud part of the city's heritage. Over the years, it has become a 'shrinking city', characterized by the loss of its working population to nearby urban hubs, economic downturn, excess dependence on its maritime sector and resulting societal problems. The city is also suffering from the growing threat of climate change. As shown by the figure below, Maassluis faces the threat of projected rising sea-levels. Thus, there is pressure on European cities like Maassluis to speed up their sustainable energy transition.



In collaboration with Erfgoedkwartiermakers and the LDE Centre of Global Heritage and Development, the Maassluis municipality has laid out a 10-year development plan to address the city's problems – including its environmental ones (Anonymous, n.d.). According to the Erfgoedkwartiermakers, certain actions have been undertaken in the first year since its implementation: buying of the Living Lab building, initiating the common sailing program and talks with other municipalities have begun. The Living Lab project is a builiding bought by the municipality on the harbour, in which Erfgoedkwatiermakers are planning to install solar panels, but also the unique technology of sea salt batteries to store energy. This building will be used to have research and trainings on sustainability in the maritime sector, in partnership with technology univeristies, to engage the youth. The municipality has also taken steps towards advertising the city's maritime heritage through tourism by using her historic ships.

While certain actions have been implemented in the first year, several interventions remain to be carried out over the next nine years. In this way, Maassluis can become a resilient city that can withstand shocks of any nature (environmental, economic, institutional, or social) (OECD, n.d.). Since the City Maritime Harbour project is organic and constantly developing, it requires continuous research on its progress and potential future interventions. This necessitates the study of the status of the project and what opportunities should be considered to advance its progress.

This will be achieved by answering the main research question:

What are the challenges and opportunities of the sustainable transition of the Maassluis harbour?

This question will be assessed by examining the success of existing policies and relevant technologies developed to make the harbour sustainable. Since the transition towards a resilient city taps into the interlinking of the economy, society, environment, and governance, it is also important to study the role and perspective of stakeholders from these different spheres. These stakeholders include the Maassluis municipality, maritime technology experts, members of tugboat associations and residents of the city. Since these actors play a role in the formulation of city development plans and/or are affected by them, it is important to assess their perspectives. They are best suited to providing knowledge on this topic from different angles.

Accordingly, the researchers formulated the following sub-questions:

1. What past policies are already in place to make the Maassluis port sustainable?
2. To what extent were the implemented actions and policies successful according to stakeholders?
3. What is the perception of the stakeholders on the status and potential for the sustainable transition of the Maassluis harbour?
4. What alternative sustainable technologies do stakeholders believe are appropriate for the sustainable transition of the Maassluis harbour?

The first sub-question aims to identify the actions already put in place. Some of these actions have been described earlier in this introduction. The question will answer the part of the opportunities in the main research question together with the second sub-question. As it looks to assess the success depending on different stakeholders. What is perceived as success will depend on the individual definitions of the interviewees. This second question will also help answering what obstacles are there, if some policies were not considered to be successful by certain stakeholders.

The third sub-question will concern determining how the stakeholders define and perceive the sustainable transition in Maassluis. This will allow the researchers to have an overview of how important this transition is to the interviewees and see which groups will be supports or obstacles to actions towards this transition. The transition includes the actions described earlier as well as ones that can be identified thanks to the fourth sub-question. Indeed, the fourth one will help identify what innovations are possible in Maassluis and which ones do stakeholders believe to be useful and important to put in place.

In order to answer all these questions, qualitative research will be undertaken in the form of a critical literature review with rounds of interviews and a public survey. The aim of this project is not only to identify what challenges and opportunities are present to carry out the sustainable transition of the Maassluis harbour, but to utilise this information to also come up with recommendations for solutions on how to better implement the sustainable goals of the municipality concerning the harbour.

The findings of this report have the potential to contribute to the organic 10-year development plan. The main role that these results can provide is contributing a base of knowledge concerning the stakeholders which can then aid the development of other ideas and solutions for the remaining period of the project, benefitting the clients. Additionally, this report will help contribute to the currently scarce research on sustainability of the Maassluis harbour.

For example, transitioning to renewable energies would not only help tackle emissions, but also make the city more resilient against energy crises, such as the one induced by the Ukraine war (IRENA, 2022). This also has the benefit of creating economic opportunities, which could incentivise young people to stay and work in the city. It would lead to diversification of the city's economy. Thus, there are many potential opportunities for carrying out the sustainable transition of the Maassluis harbour, which the 10-year development plan aims to achieve. This relates to the buildings and infrastructure in the streets by the harbour area, as well as the canals and boats in the harbour. It is useful to know which such opportunities are there, and what obstacles make it difficult to reach them, this is what the proposed research aims to identify.

It is expected that collecting and analysing public opinion on these ideas and on what projects the public wants to see happen will best help the ten-year project. This could be helpful for the municipality to identify which solutions would be met with support and resistance. This could help in being prepared for the aftereffects of carrying out an initiative. Further, establishing what technologies are already available according to different stakeholders, can give ideas on what potential interventions are suitable.

II. METHODS

The research methodology consists of semi-structured interviews, a literature review and a survey. The literature will complement the interviews and survey results with findings of previous research and thus help solidify the knowledge base that is being created.

1) LITERATURE REVIEW

This literature analysis will involve peer reviewed academic articles retrieved form Google scholar, Web of Science, Leiden catalogue and other online scholarly websites. A matrix will be created with categories using certain key terms, such as a) “sustainable innovation”, b) “sustainable ports/harbours”, and c) "maritime heritage". Relevant data from each literature will be categorised accordingly and allocated into a matrix. To allow for a clear and credible analysis, a minimum of the most relevant 10 articles has been used. Since there is scarce literature available concerning the Maassluis harbour specifically, these articles pertain to contexts beyond Maassluis. Additionally, the review explores different technologies, such as under quays water tanks or sea salt batteries, that have either been mentioned during interviews or by the clients, or are discovered thanks to the literature review and are used in the interview questions. Research on other Dutch port cities with heritage and those in nearby countries are also considered. Articles on relevant topics such as sustainable ship design, energy transition of ports, etc. are also included. The findings from the analysis of literature informs the questions formulated by the researchers for the stakeholder interviews and help contribute to the final analysis for the conclusion with previously researched information and innovations.

2) INTERVIEWS

In order to determine the opinions of the different stakeholders, interviews were conducted and a matrix was established to code and analyse them. This method was chosen as it is an appropriate method of gathering opinions, as the researchers are directly in contact with the participants interviewed. The interviews are also semi-structured, which allows for the research to orient the questions according to responses and context. Not only does this allow for flexibility, but rich, in-depth qualitative data can be obtained in this way.

Every interview was tailored to the type of stakeholder. Therefore, a script guide was made for each stakeholder type: experts, municipality workers, tugboat association members and commissioners. They were partly informal, as some questions were asked outside the script depending on the flow of the discussion. However, it was ensured that a set important range of topics answering our sub-questions were covered. These include: opinions on the project by Erfgoedkwartiermakers and specific projects (depending on how aware the stakeholder is of the project), the balance between cultural heritage and sustainability, sustainable technologies and advice the stakeholders could provide regarding new technologies or other stakeholders. Furthermore, certain keywords and themes were common to all interviews: sustainability, innovation, maritime technology, Heritage Deal, heritage tugboats, challenges, and opportunities. While certain contacts were provided by our clients, other interviewees were contacted through researching experts on this topic. They were contacted by email and by phone and conducted either online or in person (in Leiden or Maassluis).

All the interviews were recorded with the consent of the participants and then later transcribed using different tools (such as the website Trint). The transcripts were then analysed using a matrix (please refer appendix). The matrix had the main keyword as "perception" and included categories of: sustainability, maritime heritage, the Heritage Maassluis project, and sustainable innovations. Each category has indicators to identify sentences within the interviews and decide which category they fit in. Further, each category was divided into two sub-categories, one each for positive and negative perception. Using different colours, the interview transcripts were coded in order to better visualise what are the dominant opinions and perceptions. This technique is used for qualitative research in political science and other social sciences. The researchers decided to use this technique as it seems to be a clear way to visualize properly the opinions and use it to analyse the overall interviews using the same codes and definitions of categories. The same matrix could be used for both interviews and literature review which also allowed to combine the results better.

Interviews were chosen as the best research method because they provide the most comprehensive reception of the opinions and perceptions of all stakeholders. Interviews allow for different relevant topics concerning the harbour, and letting the conversation guide the questions and answers, in order to gain a more holistic approach. Ten interviews have been conducted; this is a sufficient number for comparison and analysis. The interviewees included experts that were not directly related to Maassluis, this allowed to have an outside opinion as well as the perception of the stakeholders directly part of the city.

Using this comparison, the researchers will be able to state whether the project by Erfgoedkwatiermakers is supported by the relevant stakeholders, whether sustainability is important for stakeholders, what challenges are perceived by them, and what innovations seem to be possibilities for this project. The interviews include questions regarding all four subquestions. Such as:
a) What sustainable innovations do you think could be applied to the Maassluis harbour?
b) What is your opinion on the 10 year project by Erfgoedkwatiermakers?

3) SURVEY

As the researchers did not receive a budget to cover travel costs, it was not feasible for them to travel to Maassluis often enough. This made the prospect of interview a sufficiently large sample of residents difficult. Due to these financial and time constraints, the plan of interviewing locals was replaced with sending a short survey of 10 questions. Numerous flyers with a QR code linking to this survey was distributed around the city. The survey was made using Leiden Qualtrics and was published in both English and Dutch.

The aim of this survey was to collect both quantitative and qualitative data by using both open and multiple-choice questions. These questions focused on attitudes towards achieving sustainable development goals, tourism, and economic development (see appendix).

III. RESULTS & DISCUSSION

In this section, the results from the overall research will first be summarised. The main findings of the literature review and interviews are then presented in two tables, the first and second denoting the challenges and opportunities of Maassluis' sustainable transition respectfully. Finally, these findings of both research methodologies will be compared and analysed separately.

First, most interviewees indicated a mostly positive perception of sustainability in general and of the 'City Harbour Maassluis' project. All participants agreed that there is a need for a comprehensive 10-year development plan to revive the city's economy and begin its sustainable transition. These results were detected irrespective of disparities in interviewee's level of previous knowledge of the project. This sentiment is reflected in existing literature, which calls for the urgent need to develop vulnerable port cities sustainably. Both literature and experts interviewed shared a promising variety of sustainable technologies that could be relevant for the project.

However, the participants also established what they perceived as challenges to this project. The most cited challenges included the funds required, the amount of energy required to facilitate the use of electricity to propel a tugboat, and unwillingness to change the old engines of the tugboats. Similar inferences were drawn from the literature review: limited funds, lack of public awareness and reluctance to change, and complexity of stakeholder collaborations.

Furthermore, the opportunities and advantages identified include a variety of sustainable innovations (such as fossil fuel alternatives) which can be researched in the Living Lab, with cooperation between port and city authorities, and building community engagement.

Barriers

Challenge	Method	Source	Exact Concern
Funds	Interviews	De Haas	Cost efficiency of the reduction of emissions is not good.
		Elbe Stichting	Biofuels are expensive
		Quay expert for the municipality of Maasluis	Funds for harbour restoration in certain sectors in unavailable
		Stichting Sleepboothaven Maassluis	Sailing costs for tugboats are high and stichtings are struggling financially
		Alphatron Marine	Projects need a lot of money and will need money
		Erfgoedkwartiermakers	Low funds for the project
	Literature	Sesana (2018)	"In heritage sites with high vulnerabilities costly adaptation measures are required, however, institutions and managers in charge of the preservation of cultural heritage sites do not have sufficient financial resources to undertake all required adaptation efforts."
		Daly (2022)	Funds
Electrical Engines	Interview	Padmos Industries	A lot of electrcity is needed to propel a tugboat on an electric engine, that does not seem feasible or desirable.
		PhD candidate Universiteit Leiden	Electric engines are only sustainable if the electricity is sustainably sourced. Lots of electricity is required to propel boats with electricity and just the living lab does not seem enough. There is a loss of power and efficiency because of charging.
Reluctance to Change	Interview	Quay expert for the municipality of Maasluis	The Advisory Committee of Culture is reluctant to change sometimes
		PhD candidate Universiteit Leiden	Some people are nostalgic and don't want to change the engines, that does not make sense to him
		Alphatron Marine	The owners of tugboats might not agree with plans to change them
		Elbe	Do not wish to electrify or replace the engines of the tugboats

Difficulty of stakeholder structure	Interview	Alphatron Marine	Every tugboat is privately owned which can hinder action
		Stichting SLeepboothaven Maassluis	Stichtings are separate for each boat and don't want to connect or have a hard time to connect.
		De Haas	Mismanagement by the local government regarding permits and work areas. Already existing infrastructures are not being exploited. Limited communication between the project and the organisation.
		Quay expert for the municipality of Maasluis	The municipality is in-charge of the maintenance of quays but cannot sell energy if they install water tanks in them to create energy.
	Literature	Wang (2019)	"No clear connection between community attachment and sustainable tourism."
		Paiges-Sanchez and Daamen, (2020)	"The role of stakeholders from both sides – port authorities and city administrators – becomes complicated."
		Daly et al. (2022)	"Governance and transboundary management are some challenges in preserving the cultural heritage of Asian ports."

Youth engagement	Interview	Elbe Stichting	The future of tugboat associations is uncertain because volunteers are old and no youth is interested. Without youth, plans by Erfgoedkwatiermakers for the boats cannot happen. The change in demographics of the city - there is an increase of immigrant populations - could contribute to this lack of interest in youth towards preserving the maritime heritage of the city.
		Alphatron Marine	Youth does not have interest in maritime museums. There is high skilled youth but no jobs in Maassluis.
		De Haas	Current museums are unable to educate youth about heritage and maritime techniques.
		Stichting Sleepboothaven Maassluis	It is difficult to involve young people in the project.
Difficulty of working with old boats	Interview	De Haas	Adding sustainable innovations to old engines could have negative effects on the engines.
		Alphatron Marine	Older ships are not suitable for engine conversion. An old engine is a piece of art, modifying it leads to resistance.
		PhD candidate Universiteit Leiden	It is difficult, if even possible to modify the design of old boats.

	Literature	Danish Ship Finance: Shipping Market Review	"With the time it takes to upgrade new fleets and construct new fuel infrastructure, the demand would have shifted significantly." "It may take five to ten years before a new generation of vessels, powered by zero-carbon fuels, defines more than pilot projects and early green corridors."
Challenges of existing sustainable technologies	Interview	De Haas	Perceive the change to alternative fuels as extreme.
		Alphatron Marine	Perceives the change to non-fossil fuels impossible before at least 20 years. Existing technology using other fuels (electricity, hydrogen) are hard to repare while sailing.
		PhD candidate Universiteit Leiden	Necessary to have a bunker station near in order to use hydrogen. If there is a hybrid engine, the crew will only use the diesel part. Hydrogen is only sustainable if created sustainably.
		Padmos Industries	There is a fear around lithium batteries/electric batteries due to the possibility of it burning. There is currently some loss of horsepower when switching to efuels.
		Elbe Stichting	Biofuels might damage tugboat engines.

Opportunities

Possibilities	Method	Source	Exact Concern
Funds and sustainability	Interview	Quay expert for the municipality of Maasluis	Sustainable projects will bring funding/sponsors and subsidies.
		Stichting SLeepboothaven Maassluis	Sustainability of Maassluis will make it more economically attractive.
		Padmos industries	Having new techniques like the hydrogen using old tugboat engines would bring tourism from all over Europe.
	Literature	Sesana (2018)	Fundraising more resources (financial, technical, and human) are required to enable adaptation of cultural heritage sites to climate change. Financial resources are part of the 'managerial and decisional adaptations'

The Living Lab	Interview	Elbe Stichting	The tugboat associations will be part and want to be part of the living lab process.
		Padmos Industries	The living lab is a good idea and especially the salt batteries and how useful it can be for energy storage. Project for the living lab is to research changing old tugboat engines' fuel to efuels, maybe with a university partner.
		Alphatron Marine	The living lab will attract youth The company can provide a sailing simulator for the youth. Collaboration with Hogeschool in Rotterdam already in progress with the company. Should be governmentally recognized meeting center for the practical training of youth.
		De Haas	Already has the qualifications and wishes to be included in the project of bringing education on the maritime sector.
		Erfgoedkwartiermakers	The living lab will allow the collaboration of multiple stakeholders

Sustainable Technologies /Innovations	Interviews	Quay expert for the municipality of Maasluis	The under quay water tanks to create energy is a feasible innovation. Rain proof project, a sewage system that allows rainwater to be directly sent into the harbour.
		Elbe Stichting	Biofuels can replace fossil fuels in engines, possibility of not removing but modifying them. Technologies for the rest of the harbour should be found.
		Erfgoedkwartiermakers	Installing solar panels on the roofs of harbour buildings which will help charge the ships.
		Padmos Industries	Use of e-fuels (hydrogen and methanol) in the old tugboat engines should be possible, is already being researched in new boats by manufacturers so why not old ones. Interest in the sea salt batteries and the expectations of them. Storing energy is the most important thing, so the harbour should have equipment to do so like the sea salt batteries in the living lab. Future possibility of using fuel cells rather than generators for long distance boats. Hydrogen is not a dangerous fuel so can be used safely. The tugboats don't sail too much so the loss of horsepower caused by the change to biofuel should not be much of a problem.
		PhD candidate Universiteit Leiden	For short distances, batteries is a good alternative for more sustainable boats. Nuclear powered vessels already exist in military. Hydrogen can be used and is a zero emission fuel Ammonia can also be used (example of Egammonia.nl). Big saving technique. Replacing the engine is an option.
		Alphatron Marine	Lithium batteries are a good short-term replacement for fossil fuels.
	Literature	Sesana (2018)	"Working on mitigation & adaption: enhancing energy efficiency in historical buildings, improving the sustainability of interventions in historical buildings, enhancing the reuse of original materials during restoration and refurbishment" "Suggested 'practical' adaptations include: building coastal defences, roofs, and shelters; improving drainage systems; avoiding maladaptation such as the inappropriate use of certain building materials and developing new materials compatible with the historic environment."
		Meyer et al (2021)	Concept of Smart Port: fully automated, digitally-constructed ports which effectively utilise resources for optimal environmental and economic usage.

			Smaller port cities may not need digital technologies. The individual needs and technology capacities of each port – depending on their size – must be assessed to decide which technologies are appropriate
		Howard	Hoteliers first resisted to a scheme to refurbish the terraced properties by the seafront of Weymouth. After a free trial, they became supporters of the scheme
Importance of maritime heritage	Interviews	Quay expert for the municipality of Maasluis	The historical tugboats are the identity of Maassluis and are very important to its citizens. The harbour is worth putting money into. Residents all have a connection with the harbour.
		Padmos Industries	The tugboats engines are important historical engines that must be kept.
		Elbe Stichting	Replacing the engines is not an option. For boat enthusiasts and volunteers the engines are an important piece of the tugboat's history. This heritage is under threat due to the lack of young volunteers.
	Literature	Duran (2015)	Identity is linked in sense to maritime activity (in communities that historically have their economy centered in maritime activity) Maritime heritage as an important part of history and identity of citizens. "The provision of cultural goods positively affects social wellbeing.
		Wang (2019)	Community perceptions of heritage play a great influence on effectiveness. Emotional connection to heritage sight is important for community involvement, as this also brings value to the community.

Stakeholder engagement	Literature	Duran (2015)	"The nature of cultural heritage as a public good implies that some cultural elements would not survive without some form of collective action, as the market does allocate resources properly, with a provision lower than socially optimal." o Application to Maassluis: Collective action/collaboration needed in order to implement Eerfgoedkwartiermaker's heritage plan and sustainable practices
		TU Delft	Researchers emphasises the importance of strong relationships between public participation and the involvement of port authorities Lisbon city's diverted approach towards utilising heritage to enable this sustainable transition has opened pathways for port-city coalitions. These coalitions are step towards interlinking the socio-economic, environmental and economic domains of this issue. This approach entailed adopting UNESCO's Historic Urban Landscapes, which triggered stakeholders to rethink the relationships between the two sides – port and city.
		Meyer et al (2021)	CSRs can be used to drive practices for activites in small and medium port cities

1) LITERATURE REVIEW

Results from the literature review concern the topics of a) sustainable innovation, b) sustainable ports/harbours, and c) maritime heritage. Each category of literature described different potential challenges and opportunities for the sustainable development of city harbours. Only a few articles pertained to the Maassluis context specifically. Possibilities concern positive factors contributing to the sustainable transition of the Maassluis harbour, while challenges are the negative factors that inhibit the said transition. Each topic researched in the literature review are interrelated in providing cohesive results that are relevant to the Maassluis harbour. The results are categorized in the table above, for Barriers the information is in three categories: Funds, Difficulty of Stakeholder Structure, and Difficulty of Working with Historical Boats.

First, the issue of funds is discussed in the articles by Sesana et al. (2018) as well as Daly et al. (2022). Sesana et al. (2018) see the climate crisis as a risk to lose part of heritage due to the lack of ressources available for the adapation to the climate crisis, including financial ones. They specify that highly vulnerable heritage buildings are the ones that require the costliest adaptation measures, and that cultural heritage organisations do not have those funds, they give the example of European archaeological sites in danger of coastal erosion which cannot all be moved. Daly et al. (2022) have a similar discourse regarding the preservation of cultural heritage of Asian ports, although their scale is not as comparable to Maassluis due to it regarding the much longer shore in Asian countries.

Second, the difficulty of the stakeholder structures is determined by Paiges Sanchez et al. (2020), Daly et al. (2022), and Wang (2019). Paiges Sanchez et al.'s report (2020) explores the role of heritage in the sustainable development of the waterfront of Lisbon, this report, done by TU Delft researchers, emphasises the importance of strong relationships between public participation and the involvement of port authorities in sustainable projects. They also assess that many European port cities face the challenge of tensions in those relations and that this complicates the developments. Daly et al. (2022) also identify institutional limitations as a challenge to preserving cultural heritage. Finally, Wang (2019) focuses on three main aspects, including the relationship between community and marine heritage. He evaluates community and its perceptions of heritage to be positively correlated with the implementation of measures to preserve heritage.

Third, the diffculty of working with old boats is discussed in the Shipping Market Review by the Danish Ship Finance (2021). They state that it will take at least fiev to ten years for new ships that work on biofuels to be commercialised.

On the other hand, the possibilities identified in the literature review pertain to the following categories: fundraising, sustainable technologies/innovations, maritime heritage, and stakeholder engagement.

First, the opportunity identified is the possibility for raising funds in order to provide a more robust amount of resources concerning sustainability. Additionally, the fundraising would be required to enable adaptation of cultural heritage sites to climate change (Sesana, 2018). By facilitating efforts to raise funds for their projects, the municipality of Maassluis and Erfgoedkwartiermakers can catalyse the implementation of sustainable practices in combination with heritage conservation in the Maassluis harbour.

Second, the opportunities regarding sustainable technologies identified are as followed. First, adapting the pre-existing architecture and heritage sights to include sustainable technology can prove to conserve heritage whilst promoting sustainable innovation (Sesana, 2018). Additionally, adapting practical elements of pre-existing infrastructure can aid in maintaining and ensuring the durability of pre-existing infrastructure and heritage sights. This method is best referred to as 'proactive adaptation' (Sesana, 2018). Second, the implementation, or rather consideration, of using smart port technology that digitally-constructs ports which effectively utilise resources for optimal environmental and economic usage (Meyer et al 2021). This practice could help facilitate the most efficient possibilities of potential practices in the port, which reduces waste and unnecessary carbon emissions. However, this technology could be unnecessary for the context of Maassluis, because the port functions at a much smaller scale then other major ports in the area.

Third, concerning the topic of maritime heritage the opportunities identified regard the facilitation of public identity with maritime heritage and the relationship between public perception of heritage with policy implementation. In regards to public identity, maritime heritage plays a role in the cultivation of public identity, in that the historical context of a town or city creates a sense of connection amongst the citizens of the said town or city . This personal relation to maritime heritage contributes to the well being of the citizens and the conservation of heritage (Duran, 2015). Additionally, the citizen's connection to maritime heritage creates a positive relationship with policy implementation. This relationship occurs because positive public perception of maritime heritage supports the implementation of heritage conservation policies, which then increases the public positive perception of maritime heritage (Wang, 2019).

Finally, the opportunities identified with the category of stakeholder engagement are as follows. First, collective action is needed in order to establish effective public policy concerning maritime heritage (Duran, 2015). Second, strong relationships between stakeholders and public engagement are a crucial factor in facilitating effective heritage policies that incorporate sustainability. Third, corporate social responsibility (CSR) funds of private companies (either from the city of Maassluis or elsewhere) can be utilised to help encourage sustainable activities in small scale and medium sized port cities (Meyer et al, 2021).

2) INTERVIEWS

The information regarding the Barriers to the sustainable transition of the Maassluis harbour were put into five categories: Funds, Electrical engines, Reluctance to change, Difficulty of Stakeholder Structure, Youth engagement, Difficulties with Old Boats, and Challenges of Existing Sustainable Technologies.

First, the lack of funds available to continue the next stages of the City Harbour Maassluis project was termed as the major obstacle. According to Erfgoedkwartiermakers a majority of the project budget was spent on buying a building for the Living Lab. More funds need to be arranged for the next steps, which was echoed by Influential Tugboat owners. The lack of cost efficiency in emission reduction perceived by De Haas company was evidenced by members of the Elbe tugboat association, who explained that although they believe in sustainability, it is very expensive switching to a fuel alternative such as biofuel. It is difficult for stichtings to allocate funds for sustainability projects, when they are already struggling financially due to high sailing costs, etc. .

Second, many interviewees pointed out the difficulty in electrifying engines, which is an aim in the City Harbour Maassluis project. According to Padmos Industries – an importing company in the maritime sector – tugboats would require a large amount of electricity to be propelled. Not only would this be undesirable, the amount of power lost through charging would be unfeasible and compromise its efficiency according to experts on maritime technology. Furthermore, maritime experts believes electrifying engines would only be sustainable if the power is sourced from green fuel.

Third, the reluctance of different stakeholders to take action and support their positive perception on sustainability was identified. One of the Tugboat owners and entrepreneur pointed out the unwillingness of tugboat owners to consider sustainability initiatives that would compromise the heritage of their boats, i.e., the historic engines. The interview with members of the Elbe Stichting supports this viewpoint; they voiced their opposition to modify the old engines. For them, changing the engines in the bid to make the boats sustainable would put at risk the historic value of the boats. This sentiment of nostalgia is not limited to tugboat owners and volunteers, but extends to the population of Maassluis as well.

Fourth, the limitations and separation of different actors vital for the City Harbour Maassluis project to succeed complicate the issue. The tugboats are privately owned and thus, any attempt to make the boats sustainable will require their permission. Not only are boats separately owned, the stichtings of these boats work independently and do not have a history of close cooperation. This could complicate efforts to get tugboat owners and associations to take collective sustainable action. Next, the municipality allegedly had mismanaged work permits and areas, and underused infrastructure relevant for the project. There is also a lack of communication and

transparency regarding the project. This was evident during most interviews; the people who were aware of the project were not highly aware of its status.

Fifth, the lack of youth engagement compromises the future of the City Harbour project. Since the tugboat associations are made up of older residents of Maassluis, it is vital to ensure there are youth to take over in the future. However, there is a discernible lack of interest from youth. The current maritime museums may not be sufficient to educate the city youth about their heritage and maritime techniques. Also given the lack of jobs available for the high-skilled youth, they are less incentivised to stay in the city, which limits the number of young people left to involve in the project, crippling the capability of the city to develop sustainably.

Sixth, it is difficult to make tugboats which are decades-old sustainable without damaging the engines. As a tugboat owner shared, the engine is a piece of art. Besides, some older ships are simply not capable of handling anything but fossil fuels, eliminating any hope of alternative fuels. Attempting to resolve this issue by changing the design of old boats is extremely difficult.

Seventh, there is a number of obstacles to making use of sustainable technologies that are already available. As aforementioned, fuels can damage the boat engines – this applies to biofuels. In relation to hydrogen as a fuel alternative, it may realistically have to be implemented as a hybrid engine (with diesel). In this instance, it is possible that the crew will only use the diesel part. Practical difficulties that come with switching to hydrogen include the need to set up a bunker station in the vicinity of the harbour. In the case of lithium or electric batteries, there is a fear of burning. Due to these challenges, there is a mindset across several stakeholders – namely de Haas and tugboat owners – of changing boat fuels as extreme and a process that would anyway be impossible for the next two decades.

The opportunities identified in the interviews were categorised under the following themes: Funds and sustainability, the Living Lab, Sustainable Technologies and Innovations, Importance of Maritime Heritage and Stakeholder Engagement.

First, the prospect of the Maassluis harbour becoming sustainable will make it economically attractive. This is because in the current climate in the industry, sustainability projects attract subsidies and sponsors. The combined tag of sustainability and heritage may draw more tourists.

Second, there were many suggestions directed at the Living Lab. Not only should technologies such as sea salt batteries be tested in the lab, but it should serve as a platform for relevant stakeholders to collaborate. It must be ensured that youth, tugboat associations and shipping construction companies like de

Haas are included. Furthermore, the municipality could take advantage of this set-up to introduce a training centre for youth to learn practical maritime techniques.

Third, a number of sustainable technologies and innovations were identified. These included:

- Under-quay water tanks to create energy
- Rain-proof sewage system allowing rainwater to be sent directly to the harbour
- Not replacing, but modifying engines to run on biofuel or hydrogen
- Installing solar panels on roofs of buildings in the harbour to power the ships
- Sea-salt batteries
- Lithium batteries
- Using fuel cells instead of generators
- Coastal defences, roofs, and shelters
- Drainage systems
- 'Smart Port' - this is a digitally constructed port that optimally uses resources

Contradicting the views of other maritime experts, Padmos Industries believes that the amount of horsepower lost while powering engines on biofuel is negligible. This is because the tugboats do not sail long distances. This feature of tugboats makes them appropriate for the use of batteries.

Fourth, the importance of maritime heritage was pointed out by many interviewees as a positive thing for the harbour of Maassluis. This importance affected their view on certain technologies and justified certain ideas they had for the harbour. The importance of the historical tugboat engines was often repeated, by tugboat associations, but also by some experts, a municipality consultant and the commissioners. Not only the tugboats but the harbour as a whole was discussed as a very important and integral part of Maassluis, something that brings joy and connects the residents of Maassluis. This justified for some the amount of money that is will be put into keeping and developping the harbour, as well as the change of fuel rather than of the whole engine in tugboats.

3) SURVEY

No responses were received. Thus, the research is unable to assess the perspective of residents towards this topic.

LIMITATIONS

The scope of this research presented many limitations that are acknowledged by the researchers. First, the timeframe of this research proved to be difficult for it was only a month. This month included the research preparation, the interview process, literature review, research analysis, and the report writing. This proved to be a very short time frame for this research project, which significantly limited the depth of of the research. Thus, further research should be done in order to gain more in depth results concerning the topic. The recommended future research should include citizen responses. As discussed earlier, the survey that was planned has not received any responses thus far, which was due to a lack of available time for community outreach. This constraint on results prevented the research from collecting data on the opinions of the citizens of Maassluis. Indeed, due to a lack of budget, doing in-person interviews of the residents of Maassluis was not possible and a survey was created. Although the QR-code was distributed in Maassluis, no responses were received, therefore, having in person interviews might have given more results, and this should be investigated further. Another solution would be to get in contact with the municipality and ask for their resources to distribute the survey.

This next limitation pertains to the research scope. After multiple emails and calls to organise interviews with the aldermen of Maassluis, the researchers were forced to cease attempts in contacting the municipality. The opinion of the local government is therefore missing from the report. Aid from the commissioners was also requested but only the contact from a municipality consultant was provided, whom the researchers did interview. However, this is the only government-related perspective provided in the report. Similarly, the chairmen of the museums of Maassluis were contacted but did not respond. These stakeholders are therefore also missing. The researchers believe that those responses would have been very useful in order to understand the point of view of the actual residents and how willing they would be to see this project develop and their expectations.

Another limitation is related to the methodology, particularly that of informal and semi-structured interviews. The probability of bias in the question framing and question type is stronger, since they could be easily modified and asked on the spot. The comparison between interviews was slightly challenging given that each interviewee script was not the same. Nevertheless, this format allowed the interviews to be flexible in establishing questions according to answers received and the expertise of the interview participant. Furthermore, interview results are up to interpretation from the researchers and therefore subject to biases given the researchers' backgrounds and experience. Although the researchers took measures to mitigate the effects of such biases(through researcher triangulation), potential impacts on the reflection must be taken into account.

The researchers' backgrounds are very different, which allows for a larger scope of point of views and enables the researches to intersect their views and draw different conclusions. It should be noted however that none of the researchers have an academic background in the maritime sector nor engineering. Similarly, it should be acknowledged that they have limited experience with research and consulting, since they are Bachelor students.

Another drawback of the research is the lack of available data on this specific topic. This especially concerned literature discussing Maassluis in detail, which was limited. Further, the commissioners could not provide the researchers with quantitative data regarding the city emissions or other sustainability indicators. Therefore, more quantitative data should be collected in the city for future research.

Finally, for future research it would be beneficial to explore ways of engaging the Maassluis community with maritime heritage through museums. It is recommended to consult more stakeholders (municipality, museum boards, residents) and more maritime technology experts to find out about other potentially relevant innovations that can be tested in the Living Lab.

IV. CONCLUSION & RECOMMENDATIONS

The Maassluis harbour has already started a ten year plan (City Harbour Maassluis) in which the muncipality and Erfgoedkwartiermakers aim to make harbor more sustainable. The project has already purchased a building on the harbour for the cities living lab, which will work as a pilot for sustainable innovation and development within the harbor of Maassluis. The project has also reached out to stakeholders like the different tugboat associations regarding their plans to make the harbor and historical vessels more sustainable. However much remains to be done, as several sustainable technologies mentioned in the 10 year plan still remain to be implemented.

It can be observed that most stakeholders remain skeptical regarding the current steps taken towards improving sustainability regarding the Maassluis harbor. These skeptics mainly consist out of stakeholders who work on the grounds, like the volunteers of the tugboat associations, while experts in technology and sustainability and people closely involved with the project have a positive view. However, they acknowledge that the development will happen at a very slow pace.

It can be concluded from the interviews that almost all stakeholders have a positive view on sustainable development, and are willing to work towards achieving sustainable development goals.

Topics that are recommended for future research are the public perception of the sustainable transition of the Maassluis harbour and quantitative research concerning the applicability of innovative sustainable technology in the Maassluis harbour.

Some recommended solutions or actions that can be taken in regards to the sustainable transition to the Maassluis Harbour are as follows:

1. **Private Sector Involvement**
    a. Corporate Social Responsibility (CSR) funds of companies can be used to fund the future stages of the development plan (for example, setting up the Living Lab). These companies could be located in Maassluis or elsewhere in the maritime sector.

2. **Research and Technologies**
    a. Using and improving technical education facilities and companies already present in Maassluis in order to improve education and increase the job market in Maassluis. Which would attract young people whose skills can then develop and be used to improve Maassluis.
    b. The following technologies should be tested in the Living Lab:
        i. Under-quay tanks
        ii. Solar panels (for the roofs of buildings in the harbour)
        iii. Rain-proof sewage system
        iv. Sea salt batteries
        v. Fuel cells as a replacement for generators in tugboats
        vi. E-fuels (hydrogen, methanol), biofuel, lithium batteries and ammonia as alternatives for fossil fuels in tugboats
        vii. Building coastal defences, roofs and shelters
3. **Stakeholder Engagement**
    a. The research indicated that all stakeholders' insights and expertises have not been fully utilised in the plan so far. Having a two way vision where stakeholders can be actively involved instead of a one-way approach would prevent the project from falling into uncoordinated efforts and contradicting approaches (Serena et al,. 2018). Roundtables should be conducted periodically to obtain their opinions and recommendations for further action.
    b. The municipality of Maassluis and the Erfgoedkwartiermakers will need to consider incorporating a cohesive methodology for keeping stakeholders informed about the goals they have for the Maassluis harbour and the plans they are implementing. This methodology for informing stakeholders should involve a clear statement of expectations and be thorough in consistently remaining in contact with the stakeholders. By establishing a cohesive methodology, the municipality and Erfgoedkwartiermakers can maintain an established standard for their communication with stakeholders. Additionally, it would be strongly advised that the municipality and Erfgoedkwartiermakers work to negotiate with the stakeholders in order to reach similar goals for implementation. An open dialogue between the municipality and the stakeholders is necessary for the long term success of the sustainable transition of the Maassluis harbour.

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VI. Appendix

Matrix

Categories	Description	Indicator	Sub-categories	Code
Perception of sustainability	Opinions and thoughts of stakeholders on sustainability in general.	Sustainability, transition, change, duurzaamheid	Opportunities of sustainability Challenges of sustainability	PS+ PS-
Perception of maritime heritage	Opinions on the importance of preserving tugboats and other parts of Maassluis' maritime heritage	Tugboats, historic engines, heritage port, history, museums	Positive perception and opportunities of maritime heritage Negative perception and challenges of maritime heritage	PM+ PM-
Perception of Heritage Deal project	Opinions on the project by Erfgoedkwatiermakers in Maassluis	Heritage project, heritage deal, erfgoed, erfgoedkwatiermakers, Maassluis project, funds for	Positive perception and opportunities of the project Challenges and negative perception of the project	PH+ PH-
Perception of sustainable innovations	Opinions on technological innovations to enable the sustainable transition of the Maassluis harbour	Maritime technology, innovation, techniques, energy, renewable,	Positive perception and opportunities of sustainable innovations Negative perception and challenges of sustainable innovations	PI+ PI-

Interviews

Elbe notes

Elbe is a larger scale vessel

Roger plans trips and troubleshoots, contacts passengers, organizes necessities for sailing the ship
- Financial things, maintenance
- Main caretaker for Elbe

Hans is founder of the stichting and is the captain of the vessel

Opinion on the sustainability proposal
- R: good plan to help ships to develop sustainable activities
  - Not unwilling but don't see many opportunities to change how the ship is operating
    - Historical ship and has an old engine room that electrification would change
    - Engine as the "heart of the ship"
- H: Old technology is the attraction to historical ships, all procedures must be maintained
  - Elbe only comply to necessary regulations from government
  - 10 year plan brings more contribution because of common goal
    - Promoting heritage ships
  - Overall organization great, sustainability concerning the shore power is a focus however, change of the engine is not open
  - Change is biofuels, but lots of modern engines are not capable of handling said biofuels
  - 'not a big impact on the environment in the way we operate'
  - Look towards biofuels and not fully change the engines, but rather modify the engines
- Once regulations change to no longer allow the engines, then they are open to change
- The original technology to the ship is the historical part of the ship
- Heritage in technology
- Emotional appeal of residents to preservation of the ship
  - Cultural evaluation of the ships
    - Originally for funds of the ship
    - Assembly value
      - With other vessels, museum, etc
    - Special in that the ship is in its home port
    - Original documentation of ship and oral history of ship
    - Not a 'dead object', yet ship is a living monument due to access to her history
- Before development plan, rules and regulations comply to IMO regulations (international maritime organization)
- Smaller ships comply to inland rules, yet Elbe comply to international regulations due to its seafaring
- IMO has grandfather regulations
  - Many ships run on tar ("one of the worst fuels possible")
- Elbe uses low sulfur 'green gas' gasoline/fuel
- Specific areas have respective regulations concerning sustainable practices
- Water treatment requirements, relating to biodiversity
  - Biofowling, have entire ship cleaned before entering certain water ways in order to prevent potentially invasive species from entering certain biospheres/ecosystems
- Issue with coating of ships to prevent growth, can be toxic (the most effective kind)
  - The IMO manages a great deal of sustainability regulations
- Biofuel as expensive
  - Open to biofuels if able to receive subsidy from municipality
    - Potential damage to the engines

Unrealistic parts of the plan?
- Solar panels on a ship as an eye soar
  - Base sustainable energy onshore

Calculation of footprint of the ships
- Keep track of amount of fuel used
  - Maybe divided per person
- In general, not post covid
- 60 days sailing maximum
  - Most volunteers are 70+ age
    - Is there appeal from youth?
      - Diverse appeal, yet volunteers are mostly retired individuals

Elbe doesn't have a sustainability goal in their current sustainability plans

Can't compare elbe with container ships,
- Use almost 200 tons a day of heavy fuel

"they're the elephants and we're the mouses (mice)"

Combination the ship and the engine
Men like old machines
- A living monument
- Preserving cultural heritage
  - City wide or elbe?
  - Nationwide organizations
  - Mobile heritage
    - Moderation of fossil fuel use

Sustainability as more of a societal issue concerning bigger issues than the small scale historical ships

Other parts of the harbor that should be focused on for sustainability?
- Most other elements are handled by the municipality
- Small ships are able to adjust to comply to everyday sustainability practices
  - Adjust to more energy efficient technologies on the ship apart from the engine

50% improvement of sustainability not possible, find 10% to be more reasonable
- Only allow electric cars?

10 year plan: more pr or actual action?

Subsidizing as solution, more access to subsidies and incentives to change to electric vehicles
- Want to develop

Living Lab
- Bring national towage museum and city together to work together to investicate sustainable tech
- Salt Battery, good idea but not realistic
  - Good to see synthesis of old and new tech
- Building as best example of sustainable development along with ships
- All local boat associations to participate with the living lab
- Social component, living lab as unifying and can provide a good social aspect to men with hobbies
  - Daycare for men lol

Historical ships as having a great social impact on Maassluis
- Elbe, in restoration and trips

Association as profit based? No, only pays for cost of ship
200,000 euros a year needed
- All volunteer based
- Insurance costs are very inhibitive

Hans Visser Interview.mp4

Speaker 1 [00:00:00] So yeah, maybe we can start with if if you could please let us know like what exactly your role in F with your markers is and yeah, like your role in the project.

Speaker 2 [00:00:16] In the project? Well, my my role is quite simple. I'm an innovator, so I have to do to link to connect it with innovations. And in Maslow's, we try to to develop a new energy system. In which the Cecil battery is an important component. And of course, we will be on the roof. Beefy panels and wind turbines. Is that the right English roof? I don't know. And then we create a system in which ships come and take electricity, electricity, energy from from the roof and from the battery. And we want that system in each building and in the harbor. That's our our ambitious plan. Events are unique. And in the Netherlands, because the sea battery is an item and a new product. In energy storage and a well, and we think we can with the seasonal battery, we can, you know, take a new business proposition in the muscles for companies to develop new, new and new knowledge about seasonal battery and and systems. Energy systems.

Speaker 1 [00:01:55] And think if I remember.

Speaker 2 [00:01:58] Our target.

Speaker 1 [00:01:58] Okay. And like, how has the project been going so far? I think it's been a year since it started.

Speaker 2 [00:02:05] Yes, of course. Well, I was. Muscles as bought a new a new building. We are calling that the living point and I don't know the English word for it but it's a building and and now we are developing a pilot and a little system with the Cecil Battery in that building. And I think it will be up or operational in June or July this year so we can demonstrate this. No. This this new system to all kinds of stakeholders. Like continues. Educational institutes with also the most large.

Speaker 1 [00:02:56] Okay. And. And the sea salt. Oh, sorry. Lisa, you were saying something.

Speaker 2 [00:03:13] Oh, well, that's a very good question. A lot of challenges. One one of the challenges is that that we can. How did you say that? That we can motivate all kinds of companies in the harbor itself to accomplish this project and to. And they also adopt this system in their own building. And there are a lot of different stakeholders, like companies, technical companies, but also companies in the retail, or there are also private buildings for, you know, for habitats. And that's a very different stakeholders. And that's, of course, is a problem because it's also difficult. How did you say that? You hear anything else? You're. The law is different for advocates or for companies or for a non-governmental. And it's just that's pretty difficult in the Dutch because the law is very different in some kinds of situations. So it will it can be a problem, too, to share this system. And this, again, a very important gain to share such a system because you have to share energy. To be efficient in economic perspective. So that will be a very big challenge in this in much larger. But we are. We are. We are beginning afresh more with Amazon itself and the company to develop this. All the three looked at them and then we are connecting them with an educational institute like all school to them that we should be devastated. Though the statistics are very small construction in business for the beginning, but are the great challenges to to develop. Yeah, I'm. To to to grow the stakeholders. Voters are concerned about.

Speaker 1 [00:05:46] And so, yeah, so like as you mentioned, that there are all these stakeholders with all the different like, yeah, like opinions and it's like how, how do you usually engage with these stakeholders is like they're like a platform or individual.

Speaker 2 [00:06:04] Not at this moment I'm not, there is no platform at all. And now we are searching for a demo in the demonstration with a little system. And then we hope, we hope that a people or stakeholders are very good and want to adopt this system because it can be very efficient in energy use. So we hope we can convince this year with demonstrations of stakeholders and then we hope that will be a growing process. So every year I hope to three or four stakeholders are are heading this project. And then we also hope it will be an incorporation of energy cooperation. And that's very ambitious. I can tell you this because of the different stakeholders in this area.

Speaker 1 [00:07:14] Is it is it very like unique, the situation in Mosul, or would you say that maybe like if like I think if we could get democracies done like similar projects in other cities.

Speaker 2 [00:07:29] Maybe it's a unique and I think it's unique in in the Netherlands with the sea salt battery. I see. But also what I said and it's a technical. Issue. I think we have to combine three or four buildings with one system. And and then every every time you create one or four or five buildings with one system and all the systems are connecting with Internet of Things, and we start to. And then we have in the whole album, we have a very unique energy system with the salt battery and other components, but that is our target and that will be unique in the Netherlands. But I think we have I hope we reach this ambitious gain and I hope 5 to 10 years. But now we are beginning very small. What? I said. How. I don't. I don't. You know, first I'll be.

Speaker 3 [00:08:59] Sorry. Do you know me better than this?

Speaker 2 [00:09:01] Yes. It's been.

Speaker 3 [00:09:03] Great. No, I was just wondering about this yourself. And describe again how exactly they work.

Speaker 2 [00:09:12] Cecil Patrick Well, it's quite simple, Cecil. We've only met with a live a liquid with a lot of water as confident as the other components. Our secrets. I even though know it by myself. So because. But you can also interview a doctor, then it's possible. I can I can give you the email from the CEO or from an employee. So and they are. Yeah, of course. That will be interviewed by you.

Speaker 3 [00:09:46] The.

Speaker 2 [00:09:49] Because a very special company in the end in the world, I can say, because sea salts is a unique product.

Speaker 3 [00:09:57] Yes. Well. The one I and the ones I interviewed didn't really know about this technology, so.

Speaker 2 [00:10:05] Now you can also see that the website. It's not that then. Not now. Yeah, it's quite some. But if you want, I can give you an email address.

Speaker 3 [00:10:22] So.

Speaker 2 [00:10:24] Okay.

Speaker 1 [00:10:28] And yeah, I, I'd like. So I was reading the reports of I think there was this general research report done with like other organizations in collaboration with EFF with Guardia Marcus and there were like a list of these technological solutions which they had mentioned. I don't think C Solid batteries. Was that because it seems like very new and unique. But they also also mentioned things like some like a special heat pump and like wastewater treatment systems and um, yeah, stuff like that. And like, is like, is that stuff that would also be like relevant from US laws or is it mainly.

Speaker 2 [00:11:14] Not, not at this moment. Perhaps in two or four years because we want first to, to develop an accurate and basic system. Okay. And the basic system is if he announced on the roof and she saw that three on the floor downstairs and and then kind of connecting with the ships in our that's our main goal. Yeah. This year and perhaps next year and then we can. Yeah. To her. Okay. I don't know the words for in English, for two for it. We can add other components, like you said.

Speaker 1 [00:12:06] Okay. And. You had mentioned, like the living lab earlier. So I think if I remember correctly, Martine had told us that the building for the Living Lab has been successfully bought. And how so? How is the next phase of it going to be carried out other like any difficulties with that, or is it just like going according to plan?

Speaker 2 [00:12:41] No, this year we want to do some demonstration in in the building with students and companies like looked at then and and what should we do to stand up. And next year we want to look to do arena renovation and rebuilding of the building because that will be a new. And your museum in it. And also a new group in place for students and companies. And then we will open the new renovated building in. Huh? Well, 25, I think. 24 got 25. 24 hours is a lot of work in the building itself. But in the meantime, we want to demonstrate the system on a ship or. For instance, the Hudson or the Elbe or another ship in our. So we want to develop a system. Always. But we do it this year. We want to demonstrate in the building itself. So. For all kinds of stakeholders who are curious. I want to see it. I want to want to be a. Well, yeah, I can see how it works. And that's it's a very great product to see solitary. That's the most important part of all.

Speaker 3 [00:14:34] Yes, the project. And I was wondering. About associations. Others. And. How for you? How does this. The sector of the economy or the tourism sector. How. That that section. It's linked to.

Speaker 2 [00:15:10] Yes. Well, that is also a fairly very important component of the whole of of all of the project management at large. And that program, well, this is developing by my colleague Leo. Are you interview and interview and I think.

Speaker 3 [00:15:33] This.

Speaker 2 [00:15:36] Because he is he's developing that program and. But the sustainability of that ships is also a very important issue and it's is also an important game for, I think, in ten years, because it costs a lot of money to to make a ship, an old ship, to make it sustainable for the future. So that's that's also a big challenge. You can't tell you because it's costs a lot of money. But we are also doing a project for students to research how you can do a can you do and sustainability. How do you make ship sustainable? I help a team with students of today that are starting, I think in February or in in April. But this year and I also hope I also hope that they will be demonstrate. Yeah. What they are reaching in in the building. So I hope will be some terrific students, a company in the building. And then, yeah, we can we can tell our ambitions plans and I hope a lot of stakeholders will be connecting with us. But it's a big challenge.

Speaker 1 [00:17:22] Are there any stakeholders which aren't involved yet whom you want to see involved in the future?

Speaker 2 [00:17:30] Yeah. Well in our neighbors are in the developing of the system very important. And a neighbor is, for instance, a hotel, much less. I hope all Muslims will also be really using such a system next year, for instance. And also that's an technical company in Holland. These are all my slides. There's also a company who's a neighbor. And also we hope this will be an important stakeholder in the next level for the system. And if they are cooperating of, we will be cooperating with them. Then we have three buildings. We have a system, I hope in two years or four years, and then we are growing shorter and sort. I hope. With all kinds of new stakeholders. Dysfunctional to be. One small space and two very big harbor system and I hope with. 20 to 30 or 40 stakeholders in the night in the harbor.

Speaker 3 [00:19:08] So we are snuffing out. And we were wondering if you knew in which we could send servants most efficiently to have our responses. Had any ideas.

Speaker 2 [00:19:30] Yeah, but yeah, of course. I think, um. Yeah, we. We can give you with permission of that person's, we can give you some emails of potential stakeholders. And that's a quite easy way of I hope we're evolving new stakeholders with this project. For instance, I'll tell my class. Holland Diesel mussels. See my charters. That's all very important potential stakeholders for us. So we can I can I can talk with this author about this with Martina. And Leo, how important to go for her. Pregnant is about to split. That's a possibility.

Speaker 3 [00:20:26] I think regarding those and those stakeholders, the HDMI timestamps and chargers and we have their email and have them as well. Okay. That their surveys were more toward the citizens themselves.

Speaker 2 [00:20:44] Okay.

Speaker 3 [00:20:45] And so we've put the QR codes in the city, but we're not really sure if there's a way to contact a lot of people at once with the survey.

Speaker 2 [00:20:56] Oh, then we have to this to discuss this with some employees of Muslims itself. Because I think that's this their responsibility. Yeah, I think. I know I have to discuss this with my daughter, Tina, but it must be possible to. To do some evidence in the in the harbor itself, so.

Speaker 3 [00:21:22] I think it would be great.

Speaker 2 [00:21:24] How many do you want to put under it? I so much people are not living in. I operate.

Speaker 3 [00:21:34] Yeah, 5050. That would be nice.

Speaker 2 [00:21:38] Okay, 50. Yeah. Okay. You must be on it. You saw. 50. I asked Martina, Do you have 50 emails of you? Well, I think. Do you speak? Martina? This week or next week or.

Speaker 3 [00:22:07] We already spoke to her back in December and we kind of contact by email as well.

Speaker 2 [00:22:16] Okay. We have tomorrow a meeting so she can or I can give you some information about this point tomorrow or Friday. Is that okay?

Speaker 3 [00:22:31] Yeah. That's great.

Speaker 2 [00:22:38] Okay. How many questions are you?

Speaker 3 [00:22:47] And just in the service of.

Speaker 2 [00:22:53] Okay. So it will be done in 5 minutes.

Speaker 3 [00:22:59] You know, it's an online survey, so they do an online survey.

Speaker 2 [00:23:10] Okay. You are for me.

Speaker 1 [00:23:15] Q Another thing I was curious about is like, is there a way in which like the. Like, okay, it's maybe a little abstract, but like how the sustainability of the harbor is like quantifiably measure like is there like data on, like emissions which are like tracked to like in the project? Is there a way of like measuring the progress in terms of numbers or is it.

Speaker 2 [00:23:44] No. No, no. At this moment, none.

Speaker 1 [00:23:52] Okay.

Speaker 2 [00:23:52] Nothing. But I hope in June or July, we have the first data from the small system in the building itself. Okay. And then we want to develop it Also at that point is, I think in a year we have a lot of more that the building itself, but also, I hope, of the building of hotel in the slums and of the building of IBM and see my charters and. Yeah. And I hope. But at this moment. Nothing. Nothing.

Speaker 1 [00:24:37] That's good to know.

Speaker 2 [00:24:39] There's also a challenge. But if there was any system at all with Cecil Victory, then then it's the moment that we demonstrate that we are also creating that. So it's quite easy these days with these deals with the new systems and also that the components and the registration meant to them with desperate intrusions in their areas. There are a lot of tools to to analyze data.

Speaker 3 [00:25:15] And.

Speaker 2 [00:25:16] Also. But I think in any year I hope we have a lot of more knowledge about this system.

Speaker 3 [00:25:30] You are also saying that. Still, financially, it could be a challenge.

Speaker 2 [00:25:36] Also.

Speaker 3 [00:25:38] We were wondering and we've seen that you thought that you got the heritage du budget. Yeah. Wondering what other financial. Subsidies or however is it?

Speaker 2 [00:25:56] Well, now the letters are very special. I learned about fund raising and subsidies. And we have also in in the Dutch, in the governmental organization. I feel like students or all the names I feel and there's a lot of subsidies for for doing the energy transition. And we have also. In Europe. She subsidies and we are trying to get some of this subsidies because it is a unique project that we are creating in our. So I hope we can get some a million or 2 million subsidy for. For developing the system. With completion to. And you don't.

Speaker 3 [00:27:04] I don't think I have the skills to. And I.

Speaker 1 [00:27:08] Think those are all the questions.

Speaker 2 [00:27:11] From us. If you have a question about this system, you can email or phone me. So. Okay, great.

Speaker 1 [00:27:20] Yeah. Thank you so much for your time.

Speaker 2 [00:27:23] And I wish you a lot of success, and I hope we're creating a lot of stakeholders, a lots of enthusiasm and motivation for creating this system altogether.

Speaker 1 [00:27:37] So absolutely, we keep you updated as well on our progress.

Speaker 2 [00:27:43] I've got a lot of success.

Speaker 3 [00:27:45] I.

Speaker 2 [00:27:47] Bye bye. We.

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Speaker 1 [00:00:00] I think if there is one said and that is also okay, we will translate it so well. Thank you for having us in your household. So it's very nice. And if you could just state so what exactly your job and your place in the association is. He said you're the vice president, you know.

Speaker 2 [00:00:25] And don't. An English chairman. Yeah, What was it? Chairman okay. Chairman.

Speaker 1 [00:00:32] So what exactly do you do and how does it how does it work?

Speaker 2 [00:00:36] The situation and there is no one man organization. I'm the chairman and and the the owner and the the organization that are organizations. Every ship has one thing we call it. I don't know. English Association. Association. Yeah. So every coach has an association and I am the chairman for the association above.

Speaker 1 [00:01:10] Okay. Okay.

Speaker 2 [00:01:11] Yeah. And I have to connect all the boats the same way, the same ideas to realize, yeah, the boat should to float and so on. Okay, great.

Speaker 1 [00:01:29] Okay, so we were just wondering, so you know about the heritage plan, but I feel quite impoverished. Right? And so of in your opinion, what is their aim with this plan?

Speaker 2 [00:01:45] Uh, to to make a slow tourist place. Mm hmm. People have to come to Maslow's, uh, at five Maslow's, and we'll call it experience. Experience? Maslow's. With the local shops. And what? To make my life better. And everyone knows what's life. Mm hmm. A few years ago, 2016, Saint Nicholas came to Maslow's the official version. Yeah, Along with I'm the Maslow in Saint Nicholas. Oh, that the dead. I don't mean the job. I was a Blackfeet. So, um, they want to, um. We call it in Dutch and translate it. We set Maslow's on the map.

Speaker 1 [00:02:46] Mm hmm. Yeah.

Speaker 2 [00:02:47] So, everyone. Yeah. When you are in Utrecht, Dallas, you are. Where is Maslow's? Hmm. Yeah. And we want Maslow's. Everyone knows one place after Saint Nicholas. A lot of people came around the whole country to look. Where was this? In Nicholas F before he was here. There were tourists to look where he come. Oh, yeah. So Maslow's. Want to go bigger? We now have 35,000 inhabitants. Mm hmm. And long time. It was 32 years. Four years. Four years. I know. When I was a kid, it was 1001 or on group cut, because I said in the class with wrong group, like another one. So I know the name. And this now, I was ten, 15 years ago. There's 30000 to 50 years, only 5000. And now they want to grow to develop. Okay.

Speaker 1 [00:04:02] Um, so just when the project was brought to the city, what did you think of it initially? And now that it's been a year that it's been put into place, has your opinion on it changed and what do you.

Speaker 2 [00:04:20] Think you change? Yeah, I was very skeptical. Okay. I know the people on the boat. Mhm. They want. Yeah. Yeah. They want their own boat not connected with other boats and now we want one. What would you call it to the building. One building tools. Yeah. Yeah. All the boats in it with historic change. Glass want stories to show. Right. And, and they are how you database.

Speaker 3 [00:04:59] Stubborn.

Speaker 2 [00:04:59] Stubborn. Oh, yeah. Yeah. So you just have to wait. Stubborn. So they say it must be a lot of water through the waterway. Will it be realized? That's it. That's. And I think. What?

Speaker 3 [00:05:17] The same.

Speaker 2 [00:05:19] Yeah, that's saying a lot of water to the waterway, so it, it takes a lot of time. Mhm. And my in my opinion my role is to. Easy, easy, easy. Connect with everyone. I can say we do the boat every day. A boat afloat. Mhm. Then they have no fabulous, uh, volunteers of volunteers for the moment that are all work force. Everyone is volunteer except the F for themarket big money. Mhm. So if I'm in a meeting. Yeah. They, they get both.

Speaker 1 [00:06:08] Yes.

Speaker 2 [00:06:09] And I got nothing. That is not a problem. I'm quality but is a bit cruel. It's not. Right. Mhm. So the other people on the boat, they do the work. I, I don't work. They do the work. Yeah. Like nothing place. Yeah. One party after the season. Mhm. And be a Yeah. Yeah. That's enough. But therefore you are a volunteer. Mhm. But they want in ten years. I have the plan for ten years is a good plan. Mhm. And now you see including including me we see life on the horizon. Okay good. It's possible but it's not possible to do it with profit.

Speaker 1 [00:07:07] No.

Speaker 2 [00:07:08] Always. There has to be money in it from the government, from the city, from Formosa. I don't know. Trust, trust, trust. So it's a long way? Yeah, it's a very long way. LA Seasons. Every Saturday there was a boat floating. It would.

Speaker 3 [00:07:31] Set.

Speaker 2 [00:07:32] Sail, you know, sailing. And then Gonzalez. Yeah. But, um, everything that must be paid for the boat because the diesel is so sky high. €1, the liter and the fuel. This is steamboat. Yep. One day it's five days. I have to bring it on. The steam cost five days and then they can say, you know. Mhm. Yeah. Of course. A lot of the diesel. €3,000 for Santa Claus to sail for Santa Claus. That is to the stone route here. You know just over here. There's them in the waterway. Yeah. When there's high water they closed down the storm luckily. Then we go back. Yeah, of course. There's €3,000 to steam up, and so. But it's going the right way. Okay, But step by step.

Speaker 1 [00:08:33] They're thinking it's fine.

Speaker 2 [00:08:36] And you know, the couple we had followed by.

Speaker 3 [00:08:49] All right, let's see what we I've had like a bit of a follow up question. Would you be open to the idea or like, would you rather it remained a volunteer program or would you be open to the idea? The volunteers also would get paid or.

Speaker 2 [00:09:05] And for the next year it's not possible for volunteers because one man has to be paid in this sort of benefit. We lost the building. Yeah. Tunisia. A little short. How do you call it theater? Well, lessons can be made. Simulate everything. And one man has to control all that. And it's not possible. 40 hours a week. Yeah. Job. So you must be a complete person to come. All right. A volunteer. I mean, I think there are less opportunities for volunteers of. For to do it. It's to make it. Yeah.

Speaker 1 [00:10:06] So, about the project. What did you think of the sustainability part of the project?

Speaker 2 [00:10:13] Take a look through the fossil hydrofoil mobile.

Speaker 3 [00:10:18] Going to show the sustainability is there. Yeah. Yeah, definitely.

Speaker 2 [00:10:23] And this is very difficult because it is steamboats. Yeah. I mean, he and sea salt batteries. They want to introduce. That's good. And the solar panel, you know there were two panels.

Speaker 1 [00:10:40] Yeah, sort of solar panels. Yeah.

Speaker 2 [00:10:43] Solar panels. Yeah. Yeah. I have two solar panels. That's a good step. But all chips. Yes. Sustainable, no less. Yeah.

Speaker 1 [00:11:00] Well, regarding the ships then, so. Yeah. You don't think there is a way to make them sustainable?

Speaker 2 [00:11:08] Electricity? Yeah. The solar panels. All the electricity we use. No electricity. Not a green. Yeah, not sustainable. So that's a possibility. Okay. Okay. And this very good thing.

Speaker 3 [00:11:22] Would also be would you be open to the idea that some of the engines will be replaced, more sustainable engines like electric engines or hybrid engines?

Speaker 2 [00:11:35] Yes, I like that with. I don't think the volunteers like that. Okay. That's the chime on, old chap. Yeah. And then, you know, it's a possibility, A maybe the law says you have to do it. Mhm. Otherwise it and, and the boat is forbidden to sail and then. Okay. It's a volunteers, it's black and dirty and they, they love it. They love it. Yeah. Mm. So and then the electricity. Yeah. You know, nothing for electricity, you know, there's one electrician on a listing boat but I think that's a very hard decision to make.

Speaker 1 [00:12:31] And. So just as a city itself, do you think it is desirable and it is possible for the city to become sustainable? The city of.

Speaker 2 [00:12:45] You? Yeah, I think so, yeah. Yeah.

Speaker 1 [00:12:47] Within those ten years of their program.

Speaker 2 [00:12:51] You know, step by step. Mm hmm. And after ten years, it is not what you want to stay in the moment, but it goes the right way. And the mayor is very interesting and very. And he pays a lot to realize this problem, so that that's a good thing.

Speaker 3 [00:13:13] Okay. Um, let's see. So also regarding sustainability. Does it, in your opinion, relate to the heritage of the city? Can the city and sustainability projects go hand in hand?

Speaker 2 [00:13:43] We have high level and have to show good.

Speaker 3 [00:13:45] Effort.

Speaker 2 [00:13:46] So that this together is a good combination. I think that this can work. Our food system is necessary. They have to know how to collect money from the trust and they know the waste and they have the connection with other people to bring it to a close. So I think it's a good combination there.

Speaker 1 [00:14:21] And then so do you think that becoming sustainable can also help the economy of this house?

Speaker 2 [00:14:27] Yeah, yeah, yeah, yeah. I think that everyone. But then they have to pay also. Mm hmm. And the restaurants?

Speaker 1 [00:14:40] Yeah.

Speaker 2 [00:14:42] They get more customers, in my opinion. So we have to pay for the boats to let them make them. My son's a plumber, and that's diving for a quarter. And the shops. So they have to pay. David. Mm hmm. Tomorrow there is a meeting up with layer with some restaurants in in the city. So they have to think like this and they have to pay this. Otherwise it's not possible. Yeah, we've had one, and nothing is possible.

Speaker 1 [00:15:26] Um, but we've already talked about this. Um, so you were talking about the building. So they're living love, right? The theater, like learning environment. Um, so what do you. Understand is going to be done in the living lab. And what do you think the living lab can bring or what's your opinion of it?

Speaker 2 [00:15:54] I'm a little bit skeptical. Okay. They want to. Teach students the technique. I was teaching on technical school. Yeah, and in the early eighties. The government of the Netherlands wants to be or wants to recruit women.

Speaker 1 [00:16:27] Okay.

Speaker 2 [00:16:28] In the seventies, there were millions of guilders in their time in advertising. I've seen no movement in the technique. The same way, if you are a girl, you will win. You give her the car and all. The most women to build the most baby boys whose car I know know why? It doesn't matter to me. But they do that you can push women into the technique. They want it. They go into. We don't have advertised for millions. Now the living left wants to be more so school for and trust in and fabric in nearby to have educated people in the family. Yeah I think it's. A little bit. Hmm. It does not work. So we want to be to work a little bit. But you have to be trying. Mm hmm. You know, we promote. No, that not come across. You know, that is a short fiber baron. Okay. He is retired. He has a technical education. He was CEO at less Heo Alpha throne. Mm hmm. Is it? Jukes from.

And he only has the technical education and low technical education. If you if you want to write for me. Mm hmm. Well, he is. He has a plan to build building a living that he has the plans. Yeah. You know, the money is rich. So he has three boats in the harbor. He out? Mm hmm. Television report to play it.

Speaker 1 [00:18:46] Yeah.

Speaker 2 [00:18:47] And he is. And he is all he's trying to. Will Walker.

Speaker 3 [00:18:57] Attract.

Speaker 2 [00:18:57] Attract people to an educated and technical way? It's moving. It's a very long way with the kids in the hall. And you don't want to have to do hands. Mm hmm. You think a community and economy of you can earn the money? Ten different state. Yeah. Mm hmm. It's all the vice technique. Doesn't pay. Doesn't pay? Mm hmm. So it is so lonely with living now that you have to pay. Yeah. Yeah. Okay. All right. Um.

Speaker 3 [00:19:44] Yeah. So also about living that, what do you expect of the relationship between the living vibe and the couples? What would you.

Speaker 2 [00:19:55] Want to see out there? Uh, I hope that the volunteers don't want to be part of it and teach the children or the students the technique or the data is in connection. I prefer, like, mustaches. Fantastic. But they have said they want to be busy on their own boat, on their own. The first one painted and the other one liked to cook and machinist. That is very nice. I'm pinching myself. It's very nice to teach children and to learn something this very night because it's necessary. And if the children want to learn. And I think when someone in the living lab, they want to learn. Otherwise they come that way. My. My children's. Do you have to sit in the school? Yeah. It's necessary. It's not a choice. Yeah, You have to go to school. So there's otherwise. And I think that the connection between the two, most people and living there should be possible. Mm hmm. But. I love the water crew. The walkway.

Speaker 1 [00:21:25] Um. Is there any sustainable technologies that you could think of that you think should be or could be like, put into place in Maslow's?

Speaker 2 [00:21:41] I mean, that would be what a major lender to the. Yeah. Only thing I. I'm not the man of the ideas, but garbage collect garbage and black plastic. That is already done in this life. So there is nothing to gain. And no further. Further? I don't know. Okay.

Speaker 1 [00:22:16] Um, and then we had also a question regarding the relationship between Ms.. Louse and other harbor cities. Do you think that having more cooperation between different cities could be helpful to this project?

Speaker 2 [00:22:32] No, it's not only helpful, it's necessary, I think. Okay. You have to be reasonable. So we know Dallas West long, you know, excellent for today. There's a lot of warehouses. Yeah, we call it vessels. And a lot of people come to my like, okay, I saw two cinder blocks and a lot of people also like green. So a lot of people from the restaurant come to look at the incoming information. Okay. They have also sent glancing, but they come one simple boat. Very simple. We have standard a real high above. So it is better. It is nicer. Mm hmm. So we have in the cooperation with Rotterdam with a slave museum. Okay. Yeah, but last year, it didn't work. Oh, we sell tickets to boat and float to Rotterdam. Mm hmm. And on the back, there were 22 passengers. Okay. It was not good. So you have to make good decisions and good luck.

Speaker 3 [00:23:59] And I spoke. It's critical that when you.

Speaker 2 [00:24:08] Make a deal, the deal you might have to make good deals. We do that. You do that? Yeah. So that is also a long way. Mm hmm. Okay. Yeah.

Speaker 3 [00:24:22] All right. I had also a question also going back to the. The volunteers because I noticed that the Zika that the corpse is are much less, uh, are you than open to the there would be a European it could adhere to maybe may involved the Zika that with this project.

Speaker 2 [00:24:43] It's already done. They are sitting in by the meetings from the stem. So. But the problem is taking that in the oldest 25 volunteers, the youngest. 56. Mm hmm. There are a lot of old elder people now. Nowadays, we have an advertising campaign. Mm hmm. To get volunteers. And we want young volunteers. Mm hmm. But young volunteers have other things. Things to do. They don't want to know anything about it. Mm hmm. Of. They want to go to the sea, and we have a poster. Then they like it. But when they don't, then the volunteer, they have to go. Three months will see. And then you have no volunteer. And then they are three months of one on one month free. So they can volunteer on the boat. But just to two young people I volunteer felt a huge gap between old and young. And you can. Kevin Alderman, 5:00 Saturday evening in a man I may not know, I get a beer. Young people go you there and they have all of. Now the talk is different. You know, we famously overact, but I don't know all the people. And yeah, I'm sitting in all the elements. And so it's very difficult.

Speaker 3 [00:26:36] Serious age.

Speaker 2 [00:26:37] Guys. Yeah. Yeah. But we have €5,000 for this campaign to get volunteers who don't look boats and prefer young people. But are they, are they in life? Yeah, they are in this, but not for us. Like I said, that they play football. Or seven. Friday night got lost in the disco. They said they were snoring on the couch. But we tried over €55,000.

Speaker 1 [00:27:24] Um, and then we were wondering about the relationship between the tugboat associations and the museums. Um, how do you see that, that relationship and that cooperation working?

Speaker 2 [00:27:37] Yeah. And museum is also by the meetings. Yeah, it is in. And I heard from one of the tugboats. Yeah, it's a sort of museum. They work together with the Slave Art Museum. The other museum. This much closer museum. Yeah, I think 100 visitors a year. Oh, well, yeah, Yeah. There's hope when they so together. Hmm. You have to be a good gallery to lock people into. Attract attract people to go to the museum. And in the new building, it's possible. There's a lot to see. You can see men working from the tables. You can see a simulator. You can even let go. That's a very positive. Okay. Yeah. But one museum and flight. Museum of paintings. Thomas lives. Who wants to loophole be closed? Yeah. The old Russia was inevitable. Mm hmm. I like it. Oh, that's. That's my boat. Let's go. That style for a tourist? Yeah. Yeah. I don't go to another city Tombs, and I visit a lot of museums, but I don't go to a historical museum from door to door. Well, it's really interesting. Interesting? Yeah, that's nice. But painting. Okay. Yeah. So that's. That's very difficult. And. And. Yeah. 79 physicians in the year being visitors is very difficult, but together they may be strong. You know, the start of this project.

Speaker 1 [00:29:41] It was the Hudson. Yeah.

Speaker 2 [00:29:42] Okay. You know, this person cost us too much and almost death. Yeah. Yeah. No, it's not. It's difficult. And the he to the board. The board? Yeah. The board is a school, so that should be new board. Yeah. Who wants to be chairman of sinking ship? Yeah, yeah, yeah, yeah. There's difficulties. Continue. You know, ship. Lot of history from the. Well, Rosatom, so it's very interesting. But if no once and you can come up the tugboat because when you are handicapped it's very difficult. Yeah. So that means, you know, new railway, railway and gangway and you know.

Speaker 1 [00:30:40] Right. Do you have any other questions?

Speaker 3 [00:30:42] Um, none that spring to mind.

Speaker 2 [00:30:46] It was kind of trying to. Hello? Do you want something to eat? I have toasted April.

Speaker 3 [00:30:53] Um, I'm fine.

Speaker 1 [00:30:55] Yeah, I'm okay. Okay. Um, is there anything else that you think we should be aware of when looking at this project and everything, And.

Speaker 2 [00:31:05] In my opinion, is one thing very important. This connection with the volunteers. Okay, Okay. Everyone wants to feel it, you know, And I don't know.

Speaker 1 [00:31:18] Yeah, I get that.

Speaker 2 [00:31:20] Yeah, but the volunteers have to do it. Yeah, and you have to instruct them, too. It's nice job what they do. And if they want, have to. And every said they work. Mm. If it's work, then it goes wrong. It's HOBY.

Speaker 1 [00:31:40] Yeah.

Speaker 2 [00:31:41] And it's in the Highland Newtonmore here in Long Island. The only most. Okay, let, let me, you know, literally translated only most. Then you know. Yeah. No, you don't have any, you know, zaniness.

Speaker 3 [00:32:00] Um, I was.

Speaker 2 [00:32:02] Uh. They don't want to do it. Yeah. Yeah, they don't want to do it. It's worth the the most people on the food segment. Yeah, they are 70.

Speaker 1 [00:32:12] Yeah.

Speaker 2 [00:32:13] In the last four years, two cocks and they want to milk and cook and cook. Cook and go to with only two cooks or die young and old. 80. Yeah. The third one we said. And young. So puzzled. Yeah.

Speaker 1 [00:32:38] Okay. Um. Do you think there is anyone you think is important for us to interview regarding this?

Speaker 2 [00:32:45] Well, there are plans to connect with them. And this name. Okay. How do they win? You know, in the state of Texas, the remote, yet with the laws for it?

Speaker 3 [00:33:00] Oh.

Speaker 1 [00:33:01] Yeah, the. Okay.

Speaker 2 [00:33:02] Yeah, the tax code. Yeah. So it's. And that's what the. How do they win. Okay. How do they name and tell us that name foul about the following.

Speaker 3 [00:33:17] Okay.

Speaker 2 [00:33:18] There's an electric boat. Okay. Just bills. No volunteers. Oh, yes, bills. But when they go to model with the electric motor, then of course, for it. And then the wash. Oh, yeah, Yeah. Okay. And when they can go to Don. Mm hmm. Then one tugboats can with people to see them. Mm hmm. And people change. And then when we get home, the next time in Mattituck will also be they get our plans. And, uh, nowadays we want the small boat. Small boat with 12 people in it. And the big boats. 50, 40 and 1180. Well, okay, then you can. Yeah, we make an instant profit. Profit so you can profit at. The small boat to. Two over one and one day two sales. Okay. 2 hours and 3 hours. Then you can generate more money. Mm hmm. And we don't give an inch, but that's. No, no. Yeah, yeah, yeah. There's also €10. But the question to the French.

Speaker 1 [00:34:49] Yeah. Then the game. Yeah.

Speaker 2 [00:34:51] So, shall we have two more tomorrow? We have to talk about bills. Yeah. He wants to make money. Make profit. So.

Speaker 1 [00:35:01] Okay. Thank you very.

Speaker 2 [00:35:04] Much. Missing hockey Lovato.

interview Roy de winter.mp3

Speaker 1 [00:00:04] So just if you can just say your name and your job title and which sector of expertise you're in. So it's just for the.

Speaker 2 [00:00:11] Yeah, sure. Uh, so, uh, my name is Roy de Winter. I'm, uh, research and development engineer at C-job Naval architects. And at the same time, I tried to obtain a pHd here at Leiden university in the direction of optimisation of algorithms.

Speaker 1 [00:00:28] Um, so yeah, just as we were saying. So this is in the context of this heritage plan that's being made by Erfgoedkwatiermakers. Mm hmm. Um, and in the city of Maassluis. And so we're doing a minor in sustainable development. And as part of our minor, we kind of act as a consultancy helping them with this project and doing interviews. Yes, as Sasha said of experts and people who are already working with Erfgoedkwatiermakers. Um, so I'm guessing you've not heard of this plan before?

Speaker 2 [00:01:06] No, no, no, no, not really, no.

Speaker 1 [00:01:09] Okay. Um, and from what we've said, what do you think of the project? Do you have any more questions about the project? Because we've been quite vague with it.

Speaker 2 [00:01:18] Yeah. You've been quite vague. Yeah. So it's just only for the harbour of Maassluis. So it's not that doesn't have anything to do with, uh, the Rotterdam harbour.

Speaker 3 [00:01:30] Um, The project is mainly focussed around the Maassluis Harbour and its boats. But most of the development in is potentially in collaboration with other harbours and the main Rotterdam Harbour.

Speaker 2 [00:01:47] Okay.

Speaker 1 [00:01:48] But it's just potentially it's not the, the idea is more like Maassluis itself as a city is kind of struggling economically and is trying to dynamise like its city. And so it's like it has a lot of maritime heritage, so it wants to use that maritime heritage to bring tourism and to develop the city more. So in parallel to that, they want to be more sustainable, um, in the tugboats that they have in the harbour itself.

Speaker 2 [00:02:20] Yeah, because you've been mentioning tugboats. Yeah. There's only one type of ship that there seem the harbour of Maassluis then.

Speaker 1 [00:02:26] Yeah, it's because they have four um.

Speaker 3 [00:02:30] They have about nine tugboats uh, which are like for them which are heritage, uh, sort of. So those are, um, how do you call it, Um, the, the historical tugboats, you know, not necessarily in operative use, but they are part of the city and they also plan on making them more sustainable, perhaps.

Speaker 2 [00:02:56] Okay, because they still sail on it sometimes. Because...

Speaker 3 [00:02:59] They do, so they do sail on it. They're not operational in the sense like they don't tug boats from the Rotterdam Harbour to okay, and vice versa.

Speaker 1 [00:03:09] So the focus is on these tugboats because they are historical and they're transportation. Yeah, mostly. Yeah.

Speaker 2 [00:03:15] Okay. All right. Because in Maassluis you also have the 'pond' that goes back forth along the canal, right? Across the canal.

Speaker 3 [00:03:24] yes. That's.

Speaker 2 [00:03:26] That's also involved in this research or not?

Speaker 1 [00:03:29] Not specifically, no, we've not focussed on.

Speaker 2 [00:03:32] Oh, so you only focus on the nine, heritage tugboats?

Speaker 3 [00:03:34] Uh, yeah, Yeah. Those are the, the main heritage. So maybe they wants us to focus on the tugboat. Yeah. Yeah.

Speaker 1 [00:03:43] Um, so. Yeah.

Speaker 2 [00:03:45] Okay. That's a bit more clear now, haha.

Speaker 1 [00:03:49] Um, so we were wondering just, um, about your research. Have you done research regarding the sustainable optimisation of ships?

Speaker 2 [00:04:02] Um, so my research mainly focuses on optimisation algorithms. And, um, that means that, I get a design of a ship. And then, uh, the naval architects. That would be one of my colleagues here at C-job. Would ask me, how can you improve this vessel? And, uh, I would do that by referring to size of the vessel by trying different kind of shapes, different kind of sizes to make it wider or smaller or longer, or make it deeper so that you can get a smaller boat or, or try different propellers or trying different locations of rooms within the ship so it becomes more stable in the water and that kind of stuff. So usually what they say is, um, um, yeah, we will use this engine type, this fuel type. Okay. And then I have to optimise the whole ship around it. So for me, it's usually it's already given what the fuel will be or if it'll sail batteries or sail or operate on something else.

Speaker 1 [00:05:11] Okay.

Speaker 2 [00:05:12] So that's not active. My active field of expertise. But off course, I have colleagues who have done and talk a lot about this stuff. Yeah.

Speaker 1 [00:05:25] All right.

Speaker 2 [00:05:25] Who would. Yeah. Like explain me, like this is why we use batteries for this vessel or this use. And when you go for this vessel or other sustainable sources yeah.

Speaker 3 [00:05:38] Um. Yeah. Then I would want to ask about the engines then, because you get that they are already, say what engines they're going to use and you then optimise to boats then like. Yeah. Yeah. Um, do you have any opinions on for example, alternative engines to diesel engines for example: in one study it was said that hydrogen cell engines could be used for tugboats.

Speaker 2 [00:06:13] Yes. Okay. So there are different fuels and therefore also different engines and, um. Yeah, fuel cells and stuff. Conversion engines and. Yeah. Okay. So the idea is, of course, if you want the fuel which is 100% sustainable, which means that. Yeah, uh, you don't emit any CO2 by burning it, for example. That's the ideal goal, right? uh, but, uh, right now, those vessels don't really exist yet. Except for, uh. Yeah. Vessels that sail on batteries.

Speaker 1 [00:06:57] Mm hmm.

Speaker 2 [00:06:57] The batteries are only interested. It's interesting if you sail very short distances. Okay? Because when you have very big ?, then you want to cross the Atlantic, for example, You need a lot of energy, and you can only store as much energy in, in, uh, yeah, in a battery pack. And the battery pack would be, would have to be very large if you want to sail across the Atlantic for one or two weeks or three weeks. So for short distances, batteries and Yeah are sustainable, I would say. Mm hmm. If. Yeah. Yeah. And you can charge them during the night or when they're in port waiting for passengers to enter the ship, for example. Or so for short distances yeah batteries which could be. Yeah. Could be very good. um, However, it is also this, um, problem here. If you have batteries, they are only sustainable if you put in energy, which is, uh, generated with yeah also sustainable energy generators, for example, solar panels or wind farms. Mm hmm. I would consider nuclear power also to be green. Yeah, some people don't think that but yeah, I think it's. I think that's green. Um, so this immediately also one of the other engines that could be used is a nuclear powered vessel. And, you now only see them in warships and very few commercial ships who bring containers from all around the world and they are already very, very large, they are recent research ... showed that it could be commercialised in the near future. Only right now, uh, there's no there's not a lot of rules for, uh, uh, nuclear powered ships. Uh, at least for commercial ships at least. And the rules that exist are from the 1980s. Some say maybe they need to be updated. Yeah. Before you can. Actually. Actually. Yeah. Put the thing to use. And yeah, there's also other, uh, fuels which you can use it. One of them, for example, is hydrogen.

Speaker 1 [00:09:23] Mm hmm. Um.

Speaker 2 [00:09:26] Yeah. And it's also going to make hydrogen. You can get it from the air or something, right?

Speaker 1 [00:09:32] Yeah.

Speaker 2 [00:09:33] You have to make hydrogen.

Speaker 1 [00:09:34] Yes.

Speaker 2 [00:09:34] And making hydrogen. Um, if you do that again with sustainable energy source then hydrogen could be potential. A zero emission fuel. But only if you make it by using sustainable energy sources. And, uh, one of the other ones is ammonia. And it's also sometimes used to to sail very long distances. and, um, so there's, like, three levels. We would consider them as three levels you have batteries for short distances, you have hydrogen for medium distances or for a couple of days or maybe a week. And then ammonia if you want to sail very long distances and ammonia is also one of the fuels which you can create, make with yeah energy sources.

Speaker 3 [00:10:29] Okay.

Speaker 2 [00:10:30] So I consider these three to be the most interesting.

Speaker 2 [00:10:33] Mm hmm.

Speaker 2 [00:10:34] Maybe uh methanol.

Speaker 2 [00:10:37] Methanol.

Speaker 3 [00:10:38] Right. Yeah. There have been plans to add sea salt batteries in the harbour itself. And then the idea would be that the engine would be replaced, perhaps by a hybrid engine or an electric engine. And then the sea salt battery will be used to charge the boat itself. Would that then, in your opinion, be like a sustainable way to use batteries.

Speaker 2 [00:11:09] sea salt batteries?

Speaker 1 [00:11:14] Um, yeah. There are new technology that has been like that they are looking into in this project. Um, have you heard of them before?

Speaker 2 [00:11:27] I heard this. It was not a sea salt battery but it was like more salt nuclear....

Speaker 3 [00:11:38] I don't think they're going to add nuclear to Maassluis.

Speaker 2 [00:11:43] Sea salt batteries no I've nothing with it, like is maybe a little bit new.

Speaker 1 [00:11:47] Yeah, I think so. I think it's not a fully operational yet.

Speaker 3 [00:11:52] It will be in combination with, of course, solar panels and yes, such things.

Speaker 2 [00:11:56] Okay. So, uh, solar panels they generate some electricity, uh, but you need a LOT of solar panels to for. Yeah. So if you would have a vessel and you put a lot of solar panels on top, just put the entire deck filled, so that's still not enough energy to sail. So, they're only like, you know, triple converting. So I mean, yeah, of course it generates electricity. But usually is only just enough to, to for the, how do you call it, auto load. So you have a vessel and then the vessel has a kitchen and everything and lighting inside and then the solar panels are usually just enough to you know, to generate electricity for the auto ?.

Speaker 3 [00:12:54] They're not enough to actually propel the boat.

Speaker 2 [00:12:58] Yeah. Okay. So you use a different energy source for this.

Speaker 1 [00:13:05] And what's your opinion on hybrid engines then?

Speaker 2 [00:13:08] Hybrid engines where you use. I know. Diesel generator.

Speaker 1 [00:13:14] Mm hmm.

Speaker 2 [00:13:15] Um, that's good. That that could be an option. I mean, that's a step in between. Yeah, because you needs to slowly, maybe slowly and maybe fast go to a final solution. Um, but at the other hand, if you would. Only if you. If you would have a vessel uh, uh, a diesel generator onboard, then the crew will think, Oh, we have this generator. So whatever. We will not charge the batteries, we don't the batteries, right?

Speaker 1 [00:13:48] Hmm. Okay.

Speaker 1 [00:13:50] So and well, if you give the vessel only batteries, then the crew will automatically rely on the batteries. Um, so from a design perspective and from a green perspective, I don't think it's wise to include the diesel generator because that way. Yeah, maybe they will, they will. Just a regular diesel generator.

Speaker 1 [00:14:13] Yeah.

Speaker 1 [00:14:14] That makes.

Speaker 2 [00:14:14] Also I think that's kind of ridiculous because um, if you burn diesel. Yeah. You can, you can generate electricity if you use it in a generator and the electricity can be used to power propulsion engine for example. Um, or you can use it to, uh, to fill up and, uh the battery. Mm hmm. And then from the battery propel, uh, an engine but when you do it via the battery, then you lose lost power because you have to. Then you lose power. And there is some efficiency loss when you have to store it, but you have to start ? the battery first and then charge the battery again, then you lose some efficiency. So that's also not very nice. I think and then and there's also this vessel that sails between Desso? and Noord-Holland and that sails back and forth. Yeah. And many times a day. And it has also diesel generators on board and also batteries. And the batteries are used for a big saving is what they call it, and big savings means that when, the batteries are leaving the ports. That needs more energy than what the diesel generators can produce. So it empties the batteries. Well, if it's important that the diesel generators keep on running because it spins the diesel generators very efficient and they charge the batteries because there's no propulsion. And then they sail out the port and discharge the batteries again. And then when you go the other side, then you have to charge the batteries again. And then this way you yeah, you don't need the very large diesel generator that you can use. Exploits the batteries for the times when there's big loads.

Speaker 3 [00:16:26] Okay. So a peak saving, big saving is very will be a good addition to engines and tugboats.

Speaker 2 [00:16:36] Yeah, maybe. But you know so this vessel itself back and forths. Mm hmm. Yeah. This one specific operation. Right. Because it lays still in harbour for like 10 20 minutes i don't know. Mm hmm. And then the the, You can charge.

Speaker 1 [00:16:52] Mm hmm. Yeah. Yeah.

Speaker 2 [00:16:54] And go when you're content to continuously sailing around, then there's need for big savings.

Speaker 1 [00:17:02] Yeah.

Speaker 1 [00:17:02] Right. Yeah.

Speaker 3 [00:17:04] Like I said, the tugboats will mainly be used for tourism. Like, tour boats. Yeah.

Speaker 1 [00:17:09] Yeah.

Speaker 2 [00:17:10] I think they maybe, you, I don't know how long distances they will sail, but maybe a couple of hours.

Speaker 3 [00:17:17] Something like that. I think. I could not find any real details, but I think it's kind of fluid. Uh, what exactly, the tour, how long it takes that you could count on at least, like a day of sailing.

Speaker 2 [00:17:34] Okay. Maximum of a day. Because, if it's only a maximum of one day. Yeah, I don't know if the batteries will fit, but maybe then ten batteries is more than enough. Mm hmm. Yeah. So they can charge the batteries during the night.

Speaker 1 [00:17:47] Yeah.

Speaker 2 [00:17:47] And I don't know how the size of the tugboats, because tugboats are not very large.

Speaker 3 [00:17:52] Sizes differ.

Speaker 2 [00:17:56] Do you have any sense of, remember sign number or name of this tugboat?

Speaker 3 [00:18:02] We had written down.

Speaker 1 [00:18:05] The Elbe.

Speaker 3 [00:18:05] There's that. You've got the Elbe yeah.

Speaker 1 [00:18:07] Yeah.

Speaker 3 [00:18:08] I think if you'd also search Maassluis tugboats.

Speaker 3 [00:18:13] I think Elbe was one of the bigger boats.

Speaker 1 [00:18:14] Yeah. There is Furie as well. Mm.

Speaker 2 [00:18:23] Is. This is really the name, right?

Speaker 2 [00:18:27] Yeah.

Speaker 3 [00:18:28] I think the Elbe still does, what was it again? Uh, coal right? It's like a coal engine or steam engine, at least.

Speaker 2 [00:18:40] Shall we check real quick. Okay, So if this is. I think this it. Yeah. It's in Maassluis, close to Maassluis right now. Maybe you can just quickly check. How long it sails per day. I have to, I track ships every, every minute of the day, all ships. That's right. You see, I saved some data from this vessel and see how much it appears on there, maybe something. This will take sometime, maybe we can continue.

Speaker 3 [00:19:46] Continue with a few question yeah. Yeah. Um. Okay. Um, so let's say that, um, the tugboats go for, I think, an electric engine. Mm hmm. Yeah. Would then be, in your opinion, be useful or necessary to or even possible to perhaps optimise the tugboat itself.

Speaker 2 [00:20:12] Okay, So this is these vessels already exist, right? Yeah. So then it's very difficult to to modify it, if you if you have this vessel and it only moves around people.

Speaker 3 [00:20:27] Yeah.

Speaker 2 [00:20:28] Then. And it sails at a certain speed then there's not really an option. Okay.

Speaker 2 [00:20:34] Yeah.

Speaker 2 [00:20:35] Maybe you can. Okay. Because vessels sometimes have a bof? what they call a nose that uh kind of you know, you can, you know, you can modify the boat, that, that's usually very expensive, so it's probably not worth it. And because it's already very old.

Speaker 3 [00:20:55] Yeah.

Speaker 2 [00:20:56] Yeah.

Speaker 2 [00:20:57] So optimising this vessel is probably not worth it. Uh, and that the method that I do is for vessels that are, have not been built yet. So I have my hands on vessels.

Speaker 1 [00:21:08] Yeah. Yeah. Beforehand.

Speaker 1 [00:21:10] Yeah.

Speaker 1 [00:21:10] Yeah.

Speaker 2 [00:21:11] But replacing an engine is certainly an option.

Speaker 1 [00:21:16] Yeah. Then do you think that that could make them lose their cultural heritage?

Speaker 2 [00:21:21] No. No. Right. It's only more comfort for the passengers who go on it. I think.

Speaker 3 [00:21:28] Because it was part of the issue that there's often a certain value to an engine of a boat.

Speaker 1 [00:21:37] Especially a tugboat.

Speaker 3 [00:21:41] Yeah, sometimes there's a certain value placed on the engine of the boat. Okay. So one of the questions like we'd like to ask is like opinions about does it change the culture heritage, if you also change the engine?

Speaker 2 [00:22:00] For me it doesn't but, I can imagine that there are some nostalgic people who have been sailing this vessel forever. And then they're like, Yeah, if you put away the engine, then, uh, but if you have tourists, they just want to have a nice time. Yeah, they don't want this loud engine room, so. So it's been seen quite a bit (the Elbe)

Speaker 3 [00:22:25] These are also older because the corporation from Maassluis that was called... a tugboat corporation. It's a very well known tugboat corporation. I forgot the name, though.

Speaker 1 [00:22:48] The youth thing?

Speaker 3 [00:22:49] No, no, the tugboat corporation. All the in Maassluis are made by.

Speaker 2 [00:22:57] The shipyard?

Speaker 3 [00:23:02] No. Yeah, the shipyard. But it's not that one. So. Pretty sure it's in our sources.

Speaker 2 [00:23:15] Is this the same ship was built in 1959, 64 years ago sailing in the flag of netherlands, this is currently in Maassluis. Yeah. This.

Speaker 3 [00:23:36] Um, but it's, uh, it's the, um, um, tugboat. And, uh, you called it, uh, recovery. Um, don't know the name for that. Uh.

Speaker 1 [00:23:53] Do you know it in Dutch?

Speaker 3 [00:24:06] ?

Speaker 3 [00:24:06] In dutch sascha says something

Speaker 2 [00:24:08] Recovery.

Speaker 3 [00:24:08] Yeah, but those companies merged and started Maassluis. And most of the historical tugboats are from that company. The company now moved on, and they also had, like, work in Norway, I think.

Speaker 2 [00:24:23] All right. Oh, okay.

Speaker 3 [00:24:24] So that that would explain why it's in Norway.

Speaker 2 [00:24:28] It's also been in Hamburg before. So I've been collecting some data from this vessel in the last one half year, so I've looked for over 66 days. Mm hmm. And it's only been selling for 107. So most of the time it's out of service.

Speaker 1 [00:24:52] Yeah.

Speaker 2 [00:24:54] Yeah. So I expect that if it's only sending one in three days, then you can probably use batteries. And also the speed is very low. The most occuring speed here is between eight and a half and nine and a half knots. So it's about 15 kilometres per hour. Yeah. So also because of this then it's probably not. It's probably not used a lot.

Speaker 3 [00:25:23] Mm hmm. I think it.

Speaker 2 [00:25:25] Probably doesn't require a lot of energy. So maybe batteries, which are sustainable sources? Mm hmm. And I wouldn't. If it's not sailing that much per day, then maybe, you know, don't put a diesel generator on it.

Speaker 1 [00:25:58] So we talked about different fuel sources or different energy types that we could use, but we were wondering if there were any other like sustainable technologies that you could think of are related to either the harbour or boats specifically that you could tell us about.

Speaker 2 [00:26:16] Yeah, maybe something already mentioned in my emails that how you have the idea to make the ship sailing hydrogen, for example.

Speaker 1 [00:26:29] Yeah

Speaker 2 [00:26:30] We have a great idea. And you say to the ship owner, Yeah, you should try hydrogen, but that's only half of the story because you can then build a ship that sails on hydrogen but there's if there's no bunker station nearby where you can get hydrogen and yeah, you still cannot operate it.

Speaker 3 [00:26:52] Okay.

Speaker 2 [00:26:53] So I think that's really important aspects and yeah that not only the vessel should be. Yeah. About, but also the harbour itself.

Speaker 1 [00:27:08] Yeah.

Speaker 2 [00:27:09] And there should be infrastructure to charge batteries, for example, or to bunker hydrogen or to get ammonia somewhere.

Speaker 1 [00:27:19] Yeah, I think I related to this. Um, just the in the plan, they have bought a building on the harbour that's going to be used as this living lab. So where experts will be in and yeah, there'll be a lot of studying and stuff like that. But also that's where they would plan to have the sea salt batteries if they decide to use them. So I think that would probably be where they would be putting whatever technology we need in order for the boats to be working properly. Okay. So yeah.

Speaker 2 [00:27:54] Yeah. Yeah.

Speaker 1 [00:27:58] I don't know. Yeah.

Speaker 2 [00:27:59] Yeah. So. You know, if you want to charge batteries, then there should be some connection close to the shore as well. Mm hmm. And they should be talks with the, how do you call it, with the "dutch word".

Speaker 1 [00:28:29] I can't help you with this.

Speaker 3 [00:28:33] A network supervisor.

Speaker 2 [00:28:36] The network operator. Operator of the electricity net because. Now, if I. If I charge my boat with the power plugs here, it will last a long time. It's just like with an electric car. You need to charge charging station to recharge your electric car and for ships if the batteries are bigger or if you want the charging faster, then you need stronger or more powerful charging locations so yeah. I think I don't think just the building is enough. All right. There's so much, so much, much more to do. Okay. Yeah. That was the question right.

Speaker 3 [00:29:24] Uh.

Speaker 3 [00:29:28] Yeah. Yeah.

Speaker 2 [00:29:29] What do you? What other things I think are important?

Speaker 1 [00:29:32] Yeah. What are the things you think are important or technologies that you've heard of that you think could be useful for us or.

Speaker 2 [00:29:41] Yeah. Yeah. Okay. And maybe just one other project. Where we are involved in right now, at C-Job, which is very interesting for you, because I know that there is a vessel in ? which is also tugboat and is being transformed right now as by taking out the engine and putting in sustainable fuel and then working on this for some time that actually I don't know if this project is public. So I'm going to check.

Speaker 3 [00:30:16] I think it came across something like that as well. Yeah, when I looked at the different engines used for tugboats. So that's something about a project in the USA.

Speaker 2 [00:30:40] Okay, I found it, let's now check if it's also on the web. I think I found it. It's Engimonia.eu This page is worthless. But. This is okay. So this will use ammonia to. To decarbonise the big vessels with maybe this project. I want to go to talk my colleague. Let's see if I can. Find it. Okay yeah. Maybe just one interesting thing to mention is that, um, that, as I said, there's. There is different ideas for different distances that you should write. And just because of the density of the fuels or the density of the batteries, because some fuels are very high and, you know, you can store a lot of energy in a very little space. So some fuels that they don't weigh lot and you can still get some you can get a lot of energy out of it. And others, like batteries, yeah they weight a lot. And you can and it's very straightforward. So it is nice that you can assert that much energy in it compared to other types. So I this was one of the important things to consider in your research, saying that there is this trade off between. You know how much you can bring.

Speaker 1 [00:33:54] Mm hmm. Yeah. Okay.

Speaker 2 [00:33:55] How much space you need? Uh, because ammonia, for example, is toxic, so.

Speaker 1 [00:34:01] Yeah.

Speaker 1 [00:34:03] So if you consider that for passengers, so maybe it's not the right choice. Yeah. I will talk to my colleague and then send you the project if it's okay.

Speaker 1 [00:34:20] Okay.

Speaker 1 [00:34:21] Okay. So there. Uh, yeah.

Speaker 1 [00:34:25] Okay.

Speaker 1 [00:34:26] Now.

Speaker 1 [00:34:27] Do you think you could give us his contact if he's ok?

Speaker 2 [00:34:32] Yeah.

Speaker 1 [00:34:32] And just, um. Is there anything you wanted to ask?

Speaker 3 [00:34:37] No, I think, uh.

Speaker 3 [00:34:39] It's just, uh, final question. Um, do you think there's. Do you know any other pHD candidates or supervisors that would be available to answer our questions in this sector or people that.

Speaker 3 [00:34:52] Yeah, I think if you wanted to. And you should reach out to some professors in Delft.

Speaker 3 [00:34:57] Okay. Okay. Yeah. Um.

Speaker 3 [00:35:00] Because it's really maritime oriented.

Speaker 3 [00:35:02] Mm hmm.

Speaker 3 [00:35:03] And there's not many of them in Leiden. Okay, So, yeah, I don't have many connections to the sustainable guys over here.

Speaker 3 [00:35:14] Mm hmm.

Speaker 3 [00:35:15] But I do have some connections to some professors who also work on the design part.

Speaker 3 [00:35:20] Okay.

Speaker 3 [00:35:22] Uh, let meforward you the contact of my colleagues at C-Job. Okay. And he will have some connections see if he is available. I think he is still on holiday at the time. All right, so at least he was abroad this week.

Speaker 3 [00:35:38] Mm hmm. All right. Well, thank you so much.

Speaker 3 [00:35:41] Thank you. Um.

Luuk Vroombout interview.mp4

Speaker 1 [00:00:00] Let us know your name and what what your job title is and what it entails.

Speaker 2 [00:00:08] My name is Lucas. Wrote about starting with V. The r and O the UK. And at the moment it's my first week that I am retired from my position as the chief executive officer of El Centro Marine Company, which is a company I founded myself 33 years ago. And it does have some stress to a company with down to almost 50 employees. So I'm pensions. I'm still executive advisor to the board of that company. And besides that, I do a lot of voluntary work in my apartment and other jobs. But it's not that I wasn't.

Speaker 1 [00:01:06] Yeah. Thank you. And so could you let us know a little more about the company that you founded and what exactly the work it does.

Speaker 2 [00:01:17] And that's a company which you can you can Google. Alpha Marine is a company active in marine navigation and communication systems for ships. And we are busy in as well. Small ships, big ships, cruise ships, passengers yards inland, shipping. So my my know how about Marine is quite in-depth the company I had dreams of science and sounds something like my own company three years ago and yeah it went well and the company is doing about one the €30 million in turnover and never made any loss. But there is a time in life when you become older, you have to say, okay, I'm 69. Now that you have to say, I think it's time to be more relaxed. Because running a company nowadays is so many people in that company. In Singapore, a company in Malaysia, a company in Houston, a company everywhere in the world, it's not easy to control. Yeah, I guess so. But the company is really disturbed by shared by bolt by another big company. Japan Radio Company in Tokyo. I'm visiting Tokyo already for 22 years, so I'm quite acquainted with the Japanese culture, which is totally different from the Dutch. And nevertheless, we get together, they talk, my guess. And now I'm in the air and the room. But when you Google our story, you can find all kinds of things about the company. And let's say that the background quotes myself as a person saying or telling you something about the marine and the environment, and especially my spouse, because I'm born not at the key site, but then the house that's on.

Speaker 1 [00:03:22] Okay. Well, you really are the perfect person to talk to, then.

Speaker 2 [00:03:28] Yeah, you get that. You get all this work, love you show.

Speaker 1 [00:03:32] And so with your. Yeah. Background and expertise. How how would you say that? Like, have there been a lot of, like, maybe technological advancements in the marine sector, particularly with with respect to sustainability or do you see that maybe slower compared to other sectors?

Speaker 2 [00:03:55] Yeah, it's it's, it's, it's a really slow one. It's my expectation that it'll take at least 20 years before the ships can do without fossil fuel. There are a lot of technologies at the moment like metal, hydrogen and electricity of course, but it's not easy to repair the ship in the middle of the Atlantic Ocean. But there are no people onboard. Plus, there's also a tendency less people are autonomous. So this will happen, but some people are a little bit too positive about it. On the other hand, I think when we start with smaller and medium sized vessel, but especially boats, there is a lot of weight. Because the boats, they need the power only when they have the thought. And when they don't revolt, we should tell they don't need all the power. So then you can run the ship alone. So that is why I brought up the idea in the Maslow's hierarchy. You are aware most of you will be aware that there will be a living creation. And the losing list is more or less based upon upon the IDs list that rolled in in the last year. I started by the whole message just about put it in 2005. It's now 2022. In that time we have collected, we have we have formed a complete fleet of ships. It is a museum and I like to link that all together in one sentence. But it's not only a museum because youngsters are not interested in museums and. You'll have to make effective. You have to combine technology, bio sustainability, and you have to combine history with a future. That's my concept. And when I go back to your question, it's the sustainability in the Marine. Yes. That is what drives so many hills to play.

Speaker 1 [00:06:10] And which which of those hurdles that you mentioned are like, most like. Like most specific to Maslow's in the sense that when like when we talk to other people from from Maslow's and like we asked oh is there maybe like a similar situation in other harbor cities. But they said that there were certain challenges which are like very specific to Maslow's, which you don't find anywhere else. Are you also of a similar opinion or do you think we could maybe learn from other harbor cities?

Speaker 2 [00:06:43] Yeah, the similarities between Harbor Cities is that your power should be generated by solar, wind or something else. All the ships more alongside are using artillery engines. 90% of them. So 90% of the ships they isolate the ports are polluting. So when you start by connecting those gifts to an electrical source so they don't need the ability generators. That's a big step. But you have also to try to generate the power by solar or wind. At that time in my life. We could start by powering up the museum's fleet, which is consisting of about nine ships, eight ships by power derived from the sun and the wind. Because we have winter, nothing much less, and they are sun in all of this. But let's say we can at least by adding this idea of short battery. Maybe you've heard about it. We can create our own energy source in the lithium. And that energy source will then be brought to the ships moored in front of the living and ships in the inner harbor. That is the sustainability which we can do in a relatively short period. But that town's also for all the ports in the world. That's not specifically for the message board. Where I was also made the remark that the most important I don't smoke and don't consume so much energy compared with a container ship of 20,000 containers also laying idle for 7 hours and consuming. Absolutely From that by bye bye generators. And where we can make it unique in the place is that we concentrate beautiful football. Everything to do with the boats and that history is already under 20 years old in my size. Well I'm looking at now is to create together with universities and with technical. It's not my problem, but. I want to be. Okay, so. Now my mind is picking smoke up, making those notes. So the the idea to make the ports more sustainable. My idea is to take one of the boats out of the fleet. It starts by changing the whole, I would say, in the ship. So we will be an example for many of those of us who have existing troubles. And I want to make them very. And the owner of I'm a I'm also one of three of the ships in the ports and the other temple, which is then now is the symbol of the bunker. And the gun owner is willing to commit to see that we get that as a as a as a leading project for sustainability for. But. The other ships are not suitable so much because you have to realize that the engines on board the ships, 60 years old, 70 years old, and when you are going to change the fuel for those engines is a problem. But this is from 1976. And in my eyes, we are going to take out the engines that we will need subsidy from the some sort of something because it's a lot of money and all we can show that it is possible.

Speaker 1 [00:10:45] So if I understood correctly, you want the old engines of the tugboats to be replaced by newer ones.

Speaker 2 [00:10:53] Maybe, or we are going to see if we can modify the existing engines to run on non. Fossil fuel. Of course, gosh, it's still for sale, but gosh, it's cleaner. But we have to do a study and that is already going on, I hope, with the high school in Rotterdam. Quite impossible. If we can change engines and we might be changed by everything. And the power that I'm from hydrogen. And that is really a project where we can massage in the full terms. Something to do with the. Not to do with other kids. Basically, that's where, again, we have the unique situation that it is not assuming a lot of power when certainly it's only consuming power when we.

Speaker 1 [00:11:57] See. Yeah. Sorry, sir. I do have a question.

Speaker 2 [00:12:04] Uh. Yeah, I do. So if I. If there would be. Let's do this properly. Would you rather see a preference on making the tugboats more sustainable or perhaps making the harbor more sustainable?
This, I think, disguises boats that when you have a more sustainable, if eye opening show a powertrain from a power plant and a power plant must be made in the and less. Five. By weight. By solar. By a low. And maybe, of course, the battery. So we have, let's say, in the data and I look at these calls. Yes. But the first object is how can we make this case is brought to the museum hot spots and still have it after we make that hopper more sustainable by putting out all the ships when they are laying in the harbor without pollution. That's something different from going to do a thinking at study side of study in how can we make the boats more green by abiding, by fully taking all of them, which are not yet ready for stress. Don't rebuild them into a green instead of buying new ones, because new ones at the moment it's difficult to build ships because there are not enough people anymore. Bandwidth it. The materials are very difficult to get. So we can better study. How can we modify and retrofit existing vessels? Right. So there's a dual threat to the port and ships and we the ships. You need a chef who is suitable to do it and not esteemed them from 1960. We also have.

Speaker 1 [00:14:23] And you you mentioned that like some of your like some of the other boat owners are like also like, willing to do as you suggest. Is it the case that, like, there's like other boat owners who aren't as enthusiastic about wanting to change their boats or like some like is there maybe like a like a compromise with like putting the balance between like we are preserving the heritage of like, like the history of the boat versus making it sustainable and modern.

Speaker 2 [00:15:00] They are the people who are responsible for their own suffering and their own heritage. And you cannot simply say, I have the votes of 1968 with an engine which is really an art that's built. And it's when you look at that engine, you will never find them anymore. So to keep the engine in good condition and to show the people that it is, you cannot simply say we take out the engine we make the ships carry than because then you destroy that. So those people are not so much interested in doing anything with the ship, which changes the character of the vessel. And that accounts for 80% of the fleet. But that's why I was looking for and not for another ship, which is also that where there is also resistance from some people when we start to modify that vessel. But the owner of the vessel is quite willing to assist and the owner is of course the most important when the owner refuses. And that ship is not a foundation, it's a private ownership. This means that. That is why I brought this already up. The nature of the city that we take that as a really example, how we can change existing vessels and a part of the city and a part of the work must be done out of the living. A lot of people can see it and people can follow it. So in front of the ship, going in front of the leaving, that is the ship. It's we will invite guests to see the process companies. But I more preferred to do it together with the university Dallas people are really studying how we can do it better. And make it a project, which is really a yeah, a launching project for for the Netherlands, not only for the Netherlands in Europe. Okay.

Speaker 1 [00:17:14] And you mentioned that you were like you're collaborating with the mayor on on this as well. How how? I mean, I'm sure you've heard of the like The Ten-Year Development Plan, which the municipality had worked for, like the city, but which also addresses the harbor as well. Do you have an opinion on the plan and like, whether you think it's good enough for the harbor.

Speaker 2 [00:17:46] And now the plan? Yeah. For me, it's difficult to say because the plan is partly made for my own ideas.

Speaker 1 [00:17:53] I see. Okay.

Speaker 2 [00:17:55] So this means that there are a lot of things written in the plan. But I always set my plan of, let's say the initial plans are safe. The music we have, which are as unique as the first museum in my life, but that symbolism will not succeed any more in ten years. People are getting older. The policies. And the building is totally not suitable for people with it. Because you have only steps. No elevator, nothing. So I said, let we preserve what we have in the new center. Let we preserve the history of the city of massage also in that new census, and that we combine that young people will know that because they can do that, they can sail on the real ship, on the simulator, that they can sail out of the harbor. And the simulator is provided by my company. So I know that youngsters are very interested in the blame on the chair and to say all the shit out of the house, but if they are really upset. Similarly. Then. Furthermore, I want youngsters to have. And that's that then. Yep, yep. And that's why youngsters are coming in. They can they can navigate the ship by programing something on the level. Where they make a room. And but I also want to be sure that there are people who are starting to learn how they well think that they must be Also in the city center, a training center. At a recognized, officially governmental recognized meeting center of practical training to youngsters. All who really need them carry out a job which is still life. And we wish them well with little. See what I mean. So the focal plan, I very much back it up. But the excellent idea is to combine a history with the future and to attract young people in order to go for that job, because otherwise we can think all kinds of plans together, but then we don't have the chance anymore to do it. So it. It cannot be done. So you would consider attracting young people into the projects as quite important. That is the lifeline that still lives. And we cannot attract young people in this ten year plan. The plan will say, okay. Because all the people who are there now who are settling, hundreds of those who are involved in all kinds of foundations, they are mostly about 55, 60. So in ten years time, we've got 70. So by the time the plane is sending the people out, I hope they're still there for 1970 until that month. So the basic idea is that we do a lot of make the world greener and environmentally in the marine vessels so as ships. And younger people to take part in the technology. Technology. You are young, less so young people around you, friends and you probably can think about how come you motivate them. Because with all respect for all the people who are now on universities and on all kinds of schools, at the end of the day, we have no work for them anymore. Because you cannot do everything on earth in this case. And Aleppo, you need tanks and then you probably in the future earn more money than the people are purely for the original. Okay. That's what I. That's what I really see happening. Yeah, this is a concern that has been brought up by multiple people and the truths that young people need for more young people in the project. Um, I was also, uh, I'm aware there's Zika that's a presence in my

son's wedding, that they are also being involved with the project. Do you know anything about that or. Yeah, I'm one of the sponsors of the Zika that's given by navigation equipment. They have to deal with the 2030 onset and in the later left there will also be training facility for those individuals because they don't have to pay some of these sponsorships. So in my plan, I get all all the all the what I mortality by making a plan. Where what? And one of the parties who will be in a classroom, a multi multi-functional classroom for studying not only the Zika that's in some of my studies, but also from the rest. Okay. So they can come there. And the idea that you'll be trained by by professionals. Although they are still young and they are still very, very young. Maybe we have something we should. And I hope that we can get people out of that group because also that that's fine with that situation. It's very interesting to join the initiative. So that's why in my drawings. I have the USIA, I have the Innovation Center. I have an attention for the history of the arts. Well, there's a place in the region, like the old man building, Christo Ski Dome. And I like to combine all those things in one center. So when you come in that center. You'll see not only a little of all the history. Now you see also things happening by drone flying through the building and taking pictures, and then the next thing to go and so on. But I'm a technician myself, so that's maybe a different approach from my ability instead of what you start a hobby. Okay. Okay. Remedy, if anything.

Speaker 1 [00:24:29] And yeah, like who? Like whom do you think are also like. Like, like, like, as you mentioned, that are like the young people who are important to involve in the project. And of course you're collaborating with the municipality as well. Other like perhaps other stakeholders, which you feel are important in this process.

Speaker 2 [00:24:53] Companies who are also looking for engineers and not only looking for engineers, but also willing to help by training. So that is why I'm very much in favor to form a combination of companies around my size area or around as an area where doing something in the maritime sector. Where we can combine the well, can you say the apprentices? They actually go some way. And I know that I know places anymore. There's not enough room or space or time to train them. So in this sense, I want to unify the training with people. So every company is delivering a feature. Maybe a half a day or a day. And we collect a lot of practical teachers who can teach the youngsters what to do and how to to gain experience. So stakeholders, there'll be a lot of companies around. But not only was that both of them planning a skit on the club. And the company should be involved. And that's. It's already going on. The company should be involved by not only supplying material, but also features. Because you cannot learn a practical joke at school. You have to do it. And it will not change even over 50 years. You still need people and there are no robots welding a ship. Yeah, partly. But you still need people with a lot of brains who can create something. So schools already start by getting into that from the from the people who are on the elementary school and 11 years. To get them already to the center, to make them to make them more safe. That this is also a nice job to do. Is that is that the parents also that they have to go through universities and colleges everywhere? Because at the end of the day, we have 80% people who try to tell the others what to do but try no other. That's maybe experience of 69 years in this world. Okay.

Speaker 1 [00:27:28] To. Yes, sir. Do you have any questions?

Speaker 2 [00:27:34] I do not have any more questions. I think as we get a pretty clear picture of every. Yeah. Yeah. It almost always send an email when you have any other questions, of course, But in principle you can not modify edit You set vessels into a modern ship, which is totally, let's say, a change in character, because then you lose your heritage. Hmm. We have a heritage ship which is suitable to show that we can do a lot in making them greener and blah blah, blah, blah. But we need, we need funds for that because that project will at least take €3 million or something. But we like to do it together with the schools and some companies who are also willing to look. I want to emphasize. And the second thing is that you can make the harbor more sustainable by creating your own power. And that's really, I think, the only real. Way to make up a screen. Because the ships coming into that harbor, they change every day. But the hammer is still there. So you have to start by making the harbor cleaner. And when a ship comes, they connect to the cable and all the engines go down and it's quite. Well.

Speaker 1 [00:29:09] Kate. Yeah. Thank you so much for your time and for sharing. Yeah. Or your knowledge. It's going to help us with our research for sure. And yeah, if, if we have any other questions, we would definitely love to send an email to you about that. Yeah. Thank you so much and have a good day.

Speaker 2 [00:29:30] Thank you very much. And I have one question. You are from Leiden University. Yes. I'll ask you to do the study. Did the city or address look pretty much.

Speaker 1 [00:29:39] If we are going to American to.

Speaker 2 [00:29:41] Watch? Okay. Okay. Good night. I'm involved in the whole service. So therefore, what the Americans, as well as the city, as the companies around the city. So that is why I tell you, this is not only based on my own experience, but being involved in the whole circus. So most happy to do it. And when you need to know anything, please let me know.

Speaker 1 [00:30:12] Thank you.

Speaker 2 [00:30:13] Good. Thank you very much. Okay. Bye. Bye. I. Yeah.

Commissioner interview

want from us? how to use the sea batteries in other buildings and monuments? Quais are going to be rebuilt, possibility to put water tanks in the quais and heat them up in the summer, and use them to heat winter => what are the advantages? => already a plan in Amsterdam to implement this (solar, water, and PVD) => Already done in the vlaverborder?

- Focus: or the ships, or the museums (offshore experience in the Rotterdam maritime museum => big hydrogen) look at the future in museums not only the past, or urban decline of inner city, or the buildings of the inner city?
- Deliverables: depends on our RQ. If on the living lab: ideas, state of the art interesting knowledge to show in it, ideas to be attractive, more than a report, a design.. If focusing on the museums: a presentation with all the stakeholders.
- Alderman of culture of maassluis: Corinne? She is curious to how the project goes, but difficult because they want to know where it goes already.
- What specific factors are causing urban decline in Maassluis (population loss, concentration on one economic sector, concentration of immigrant/lower-income groups in the centre)? To what extent are we expected to tackle urban decline in Maassluis? Maassluis struggles with small buildings in the city centre, with old people who own the shops => no one to take over. Not very rich city, people are not able to buy the buildings in the city centre => an imminent threat. Lacks dynamism. Aim=> to attract people from close cities (Den Haag, Rotterdam, Delft..) (ex: tugboat visits => it works) need for marketing + improving services
- Idea= markets (Christmas market); boat Christmas market

Current Status:

- What is your opinion on the 10 year plan and its advance till now? 1 year it's been going on, lots of projects in place already, but organic project always looking for new projects and ideas. Cultural expositions on the deck of the Hudson and solar panels on the roof of the podium => big change but also very attractive.
- What stakeholders are you already working with, which ones should we contact? Not only work with the tugboats but also work with education (inside and outside maassluis; i.e.

shipping an transport college of rotterdam) and industries, we need funds (barely enough money for maintenance). Already helping the tugboats with subsidies. BUt also cooperation with other industries would be interesting in a financial way.

- Museums: Chairs of the museums, talk to a few maritime industry people who work in sustainability, put in contact with tech people,
- What is the current status of cooperation between the municipality and Rijnland?
- Out of what has already been implemented, what are the results?
- Do you have any data you can provide us with? (Emissions, citizen surveys, info on 10-year plan, on the productivity, environmental impact forecast?) Yes we can find it.
- Are you working towards the regulating guidelines of the Port Environmental Review System? Would you want to? Any other organisation guidelines? Difficult to go towards this for now, closed minds towards too much change for now. Volunteers => each tugboat has their own association and never work together, but they are working together for the first time last year = Stichting Sleepboot/Motor Maassluis, Furyharbor ? Most of the volunteers have a background with the tugboats (mostly old men) need to attract younger volunteers with/without maritime background.
- Tugboats are owned by the Stichtingen = private ownership.
- Have you included the Ministry of Interior & Kingdom Relations' guidelines on urban decline? Is it relevant to include this in our project?
- What budget is available for the Maritiem Erfgoed Maassluis project? Is it all from the Heritage Deal? No real budget, organic as well...
- What would you identify as the most commercially viable fields in your local economy? Lely, education for technical students with other cities to make the boats more sustainable. Use to be a lot of works in the maritime industry (but has left the city now). People leave Maassluis to work => aim would be to make more job opportunities in here

Technical Qs:

- What engines are the tugboats on?
- Boat tourism is very different (Speedo in Rotterdam)
- Maassluis= only city that uses its tugboats
- Connect all the cities on the Maass with boats (Schiedam, Maassluis, Rotterdam, Vlaardingen..) already been done and want to increase this. Region likes this and probably would be ok to give money for this. Also maybe with Dordrecht with inland ships (use ships both for living and moving and Base), connect different museums in the region= leafwerf the bischbosch.
- What would you identify as the most commercially viable fields in your local economy?
- Dowing boat tugged by horses in Maassluis.

Commissioner Role:

- What role do Erfgoedkwartiermaker and LDE play in the process of our project? LDE we dunno.
- How can we contact each of you? Email is fine. Martine: monuments, Hans: innovation, Leo (jan): arrangements with organisations. Regular updates.

De Haas

0:0:0.0 --> 0:0:2.80
Steentjes, L.V. (Lydia)
I'm not fully fluent in Dutch.
0:0:2.710 --> 0:0:3.190
Govert De Haas
OK.
0:0:3.220 --> 0:0:6.650
Steentjes, L.V. (Lydia)
I grew up in the US, even though I have a Dutch surname.
0:0:7.440 --> 0:0:8.510
Govert De Haas
OK, very good.
0:0:9.530 --> 0:0:10.440
Govert De Haas
No problem for me.
0:0:9.410 --> 0:0:11.700
Steentjes, L.V. (Lydia)
Yeah. Is that a OK?
0:0:12.450 --> 0:0:16.90
Steentjes, L.V. (Lydia)
Uh, to begin, could you please?
0:0:17.10 --> 0:0:22.470
Steentjes, L.V. (Lydia)
Introduce yourself, distract. Describe your job title and your expertise.
0:0:25.80 --> 0:0:28.390
Govert De Haas
No, like clear for you. My name is hovered, Haas.
0:0:29.670 --> 0:0:33.440
Govert De Haas
This is a family owned company for more than 140 years.
0:0:35.240 --> 0:0:39.250
Govert De Haas
I took it over from my brothers and sisters. I'm the youngest of eight.
0:0:40.940 --> 0:0:44.470
Govert De Haas
And the other seven in line did try to.
0:0:44.810 --> 0:1:0.480
Govert De Haas
And run the company tasted. It didn't like it and did go for other opportunities. And well, I was the last one in line and the beginning of the 80s.
0:1:1.450 --> 0:1:1.700
Govert De Haas
And.

0:1:3.900 --> 0:1:4.860
Govert De Haas
And I did.
0:1:6.0 --> 0:1:9.600
Govert De Haas
Jump in like an entrepreneur, I can say and.
0:1:10.650 --> 0:1:15.460
Govert De Haas
The situation was critical at that time because the globalization.
0:1:15.560 --> 0:1:28.270
Govert De Haas
Uh meant that the borders did get open for competition from other countries that had low labor cost and other benefits environmental wise.
0:1:29.490 --> 0:1:42.540
Govert De Haas
And in other ways, so the competition did get immediately a lot of more serious at that time. For me, big challenge to convert to the company that we are now because in the past 40 years.
0:1:43.450 --> 0:1:44.220
Govert De Haas
We did.
0:1:45.810 --> 0:1:48.670
Govert De Haas
Change our strategy to be a.
0:1:50.220 --> 0:1:52.650
Govert De Haas
For fleet owners, be a.
0:1:55.860 --> 0:2:11.350
Govert De Haas
Company that they could rely on not only for the building and the maintenance of the ships, but to do the complete shape management and if we build or design or maintenance maintain ships, we do that in a.
0:2:13.90 --> 0:2:23.440
Govert De Haas
Really modern way if you compare that to the old fashioned way, what we used to do in the past, that means a lot of efficiency.
0:2:26.40 --> 0:2:35.720
Govert De Haas
Lot of sustainability already for long time. It's now very hot topic, but we started basically with that 40 years ago.
0:2:36.590 --> 0:2:39.310
Govert De Haas
The driven, by the way I was.

0:2:40.440 --> 0:2:43.150
Govert De Haas
Growing up and teach by my parents and also.
0:2:43.810 --> 0:2:48.600
Govert De Haas
Uh. Because at that time I was the youngest in the industry.
0:2:50.820 --> 0:2:54.240
Govert De Haas
Because I was in my 20s, ten 2122.
0:2:55.590 --> 0:2:58.510
Govert De Haas
And then you have other look at things then the.
0:2:59.310 --> 0:3:5.190
Govert De Haas
Really old fashioned sinking management. People in the other shipyards at the time.
0:3:5.960 --> 0:3:9.490
Govert De Haas
So my skills, if you want to.
0:3:11.470 --> 0:3:15.220
Govert De Haas
Put that in a frame, then. Then you should say entrepreneurship.
0:3:17.190 --> 0:3:18.580
Govert De Haas
Very cooperative.
0:3:20.130 --> 0:3:25.730
Govert De Haas
With the customer, with the people that are employed in the shipyard, but also with the.
0:3:26.910 --> 0:3:41.550
Govert De Haas
People around us in the city where we operate mostly. So that's what we do. And if you look at what we do today then that is fleet management. We build ships and this is really.
0:3:42.770 --> 0:3:45.570
Govert De Haas
Partly your niche market because we.
0:3:46.660 --> 0:3:49.730
Govert De Haas
Supply special vessels.
0:3:50.740 --> 0:3:57.970
Govert De Haas
Because the standard must produce vessels, that's not what we are building. We maintain them.
0:3:58.650 --> 0:4:2.420
Govert De Haas
In the fleet program, but not in the building program.

0:4:3.90 --> 0:4:6.400
Govert De Haas
You can see that a little bit on our website if you look what we build that's.
0:4:7.120 --> 0:4:10.380
Govert De Haas
Then you look at the four Navy purpose.
0:4:11.760 --> 0:4:18.140
Govert De Haas
Mine sweepers that, that that can do mine sweeping autonomously. So that's basically a drone.
0:4:19.850 --> 0:4:20.170
Steentjes, L.V. (Lydia)
Right.
0:4:20.530 --> 0:4:20.990
Zaaijer, S.P. (sascha)
Alright.
0:4:19.610 --> 0:4:24.180
Govert De Haas
Very high tech and we do build interceptors for.
0:4:26.510 --> 0:4:31.690
Govert De Haas
Customs and antipiracy groups in the in the world that work.
0:4:33.670 --> 0:4:40.260
Govert De Haas
With that type of threshold, but then under difficult circumstances, rough seas, long distance.
0:4:42.620 --> 0:4:44.470
Govert De Haas
Very high demand on the.
0:4:45.340 --> 0:4:50.180
Govert De Haas
Impact of the waves that they run through. If you look at the.
0:4:50.850 --> 0:4:55.950
Govert De Haas
At the people on the vessel that needs to be capable to do a mission when they arrive.
0:4:58.700 --> 0:5:5.390
Govert De Haas
That's just our, I mean building, we also do sometimes special survey vessels.
0:5:6.800 --> 0:5:7.680
Govert De Haas
Officials that have.
0:5:8.360 --> 0:5:11.760
Govert De Haas
Yeah, I could capability to investigate.

0:5:11.840 --> 0:5:18.390
Govert De Haas
The the sea bottom for Internet cables. Power cables from wind farms.
0:5:22.580 --> 0:5:22.960
Zaaijer, S.P. (sascha)
Mm-hmm.
0:5:20.70 --> 0:5:42.40
Govert De Haas
But it's all niche. If you look at what we do in maintenance, that's the mass of, for example, we do a lot of police hessels custom vessels, pilot vessels, search and rescue and that's that's also a big part of our business. And I can tell you the whole afternoon in detail what we do, but I hope a little, did you visit my slides actually in person?
0:5:41.810 --> 0:5:43.330
Zaaijer, S.P. (sascha)
Uh, we did? Yeah.
0:5:42.740 --> 0:5:45.270
Steentjes, L.V. (Lydia)
Ohh yeah, a couple of times.
0:5:44.110 --> 0:5:46.400
Govert De Haas
So this is so you have a.
0:5:47.190 --> 0:5:48.880
Govert De Haas
ID not only.
0:5:56.290 --> 0:5:56.580
Zaaijer, S.P. (sascha)
Yeah.
0:5:50.350 --> 0:6:2.100
Govert De Haas
From what you read and what you see on pictures, but also real time, what? Yeah, it's I was happy that you had a possibility to come to us because I can tell you about it, but she it is.
0:6:7.780 --> 0:6:9.90
Zaaijer, S.P. (sascha)
Yes, definitely, yes. Yeah.
0:6:3.70 --> 0:6:9.400
Govert De Haas
Much more impressive, I think, than that gives a better picture, so maybe not now, but in the future.
0:6:10.200 --> 0:6:16.690
Govert De Haas
Maybe an ID to to if you have the opportunity to possibility to one time.
0:6:17.980 --> 0:6:18.610
Govert De Haas
Visitors.

0:6:20.360 --> 0:6:20.730
Steentjes, L.V. (Lydia)
Yeah.
0:6:20.420 --> 0:6:20.800
Zaaijer, S.P. (sascha)
Yes.
0:6:21.970 --> 0:6:22.730
Govert De Haas
So that's me.
0:6:22.250 --> 0:6:22.870
Steentjes, L.V. (Lydia)
We were.
0:6:24.110 --> 0:6:24.330
Zaaijer, S.P. (sascha)
Yeah.
0:6:24.30 --> 0:6:25.0
Govert De Haas
And that's the company.
0:6:24.750 --> 0:6:25.230
Steentjes, L.V. (Lydia)
Awesome.
0:6:26.140 --> 0:6:40.770
Steentjes, L.V. (Lydia)
Yeah, would love to visit you sometime. Sadly one of ours. My schedule changed today quite quickly and I have a mandatory meeting to attend for my course, so I was unable to make it to myself today.
0:6:41.760 --> 0:6:43.280
Steentjes, L.V. (Lydia)
Umm but.
0:6:44.100 --> 0:6:56.600
Steentjes, L.V. (Lydia)
Uh, continuing with talking about the masseuse harbor. Have you heard of the heritage plan put in place by Earth food quarter markers from Maslow's?
0:7:0.110 --> 0:7:9.340
Govert De Haas
Not not in detail, but I know that the plan is there and I was a little bit surprised by the by the content of it and.
0:7:9.710 --> 0:7:10.150
Zaaijer, S.P. (sascha)
Alright.
0:7:10.640 --> 0:7:13.490
Govert De Haas
I just waited until I get more information.

0:7:14.630 --> 0:7:14.980
Steentjes, L.V. (Lydia)
OK.
0:7:15.580 --> 0:7:16.410
Steentjes, L.V. (Lydia)
Umm.
0:7:15.570 --> 0:7:21.260
Zaaijer, S.P. (sascha)
All right. What? What follow up? What exactly were you surprised by?
0:7:21.740 --> 0:7:23.640
Zaaijer, S.P. (sascha)
Uh, from what you heard of it?
0:7:25.440 --> 0:7:27.520
Govert De Haas
Sometimes you see that in a study.
0:7:28.900 --> 0:7:31.670
Govert De Haas
And that's in this example also that that.
0:7:34.300 --> 0:7:36.490
Govert De Haas
People try to invent what's already there.
0:7:37.990 --> 0:7:55.20
Govert De Haas
I invited them to our company and they talk about study and school and skills of people and possibilities to get unemployment. People get educated by possibilities and technical and they want to set first steps in that which is very difficult.
0:7:55.530 --> 0:7:55.970
Zaaijer, S.P. (sascha)
Umm.
0:7:55.820 --> 0:8:11.320
Govert De Haas
And it's also complicated in the scene in the in the if you want to have to offer people a study environment, that's not easy to do. And the way they explain to me how they wanna do that, I think that it's not really.
0:8:12.280 --> 0:8:24.0
Govert De Haas
Uh. Realistic to look at it at. That's why. And I invited them in our company because I say what you talk about is already here. We are a qualified.
0:8:25.520 --> 0:8:37.470
Govert De Haas
Education company by schools for people that work in the blue suits and in the white suit, they for office for production.

0:8:38.610 --> 0:8:39.980
Govert De Haas
I'm all kinds of levels.
0:8:40.910 --> 0:8:46.530
Govert De Haas
We have the offer this if you come to us today, I can show you.
0:8:48.170 --> 0:8:58.570
Govert De Haas
A handful of people, all always that one, is learning for diesel mechanic. The other one electrical, the next one on engineering all.
0:9:3.970 --> 0:9:8.190
Govert De Haas
And and part of the school education is the the work.
0:9:9.90 --> 0:9:10.470
Govert De Haas
Slash study.
0:9:11.370 --> 0:9:12.590
Govert De Haas
Program that they do.
0:9:13.330 --> 0:9:17.660
Govert De Haas
And what you try to invent is already there and it's very successful.
0:9:18.400 --> 0:9:19.30
Govert De Haas
And.
0:9:19.750 --> 0:9:22.0
Govert De Haas
With the sources that they.
0:9:23.130 --> 0:9:27.880
Govert De Haas
Explained me like historical vessels and like a museum.
0:9:28.900 --> 0:9:32.440
Govert De Haas
Type of environment is not, you cannot.
0:9:33.370 --> 0:9:45.30
Govert De Haas
Educate people there on the level that is necessary in my opinion. So I explained that to them. I I took them on our shipyard and I showed them.
0:9:45.950 --> 0:9:55.970
Govert De Haas
Real time what was happening and I they were actually very impressed, I think. And they also did understand at that time a little bit better that what they.

0:9:56.650 --> 0:9:57.410
Govert De Haas
Suggested.
0:9:58.770 --> 0:10:1.720
Govert De Haas
They want to do is not so easy that they.
0:10:11.10 --> 0:10:11.500
Zaaijer, S.P. (sascha)
All right.
0:10:3.600 --> 0:10:15.580
Govert De Haas
In the first term taught, so I have the idea. After that it was all very quiet on on their side to us actually. So I'm I I you're the first one to to.
0:10:16.960 --> 0:10:19.170
Govert De Haas
To pick up the project and I'm very curious.
0:10:21.20 --> 0:10:33.240
Govert De Haas
What? What's the what? The progress is because on one side we see that city and the people that get the subsidies that also are in play involved in your study.
0:10:34.30 --> 0:10:36.320
Govert De Haas
Are very eager to.
0:10:38.30 --> 0:10:44.290
Govert De Haas
To create jobs and to create an environment where people can learn.
0:10:45.30 --> 0:10:46.450
Govert De Haas
But in the other.
0:10:47.220 --> 0:10:51.290
Govert De Haas
Floor in the city house, they figure out plans to.
0:10:54.250 --> 0:10:54.740
Zaaijer, S.P. (sascha)
Mm-hmm.
0:10:52.480 --> 0:10:56.80
Govert De Haas
So it goes away. Basically we have trouble with with.
0:10:56.750 --> 0:11:2.360
Govert De Haas
With issues that you cannot imagine in in mistakes that are made by.
0:11:4.250 --> 0:11:8.340
Govert De Haas
The local government in the in in allowing people to.

0:11:9.960 --> 0:11:10.890
Govert De Haas
Develop.
0:11:11.830 --> 0:11:23.700
Govert De Haas
Living spaces and and other type of buildings and development that are really is limiting us in our possibilities, but also is.
0:11:24.780 --> 0:11:25.230
Govert De Haas
Uh.
0:11:26.100 --> 0:11:34.990
Govert De Haas
Something that we have to fight against all the time, because our rights are not respected in this way. It's it's not that we are.
0:11:38.470 --> 0:11:51.780
Govert De Haas
We we work in the lines of the law and all the permits that we have, but it's just that a city worker make a mistake and gives a permit to somebody that shouldn't get it because that is our.
0:11:52.780 --> 0:11:57.960
Govert De Haas
Area for sound and space and and other kinds of.
0:11:58.800 --> 0:12:10.650
Govert De Haas
And needs for us to operate and then they make a mistake and and the permit is there and they say sorry but they don't take any action to solve the problem for us.
0:12:11.360 --> 0:12:12.160
Govert De Haas
So we are.
0:12:12.850 --> 0:12:13.460
Govert De Haas
Little bit.
0:12:15.110 --> 0:12:19.350
Govert De Haas
In the process of what do you want the government? Do you want us to go? Do you want us to?
0:12:20.180 --> 0:12:30.500
Govert De Haas
On the one hand, we see that that there's in, there's a development of trying to get the Port Harbor in a way helping the economy and.
0:12:31.210 --> 0:12:36.330
Govert De Haas
Education of people and all kind of development in that way and in the other way we see.

0:12:37.280 --> 0:12:40.110
Govert De Haas
City developers that are completely syncing different.
0:12:41.150 --> 0:12:41.560
Zaaijer, S.P. (sascha)
OK.
0:12:42.500 --> 0:12:42.900
Zaaijer, S.P. (sascha)
All right.
0:12:42.940 --> 0:12:43.230
Steentjes, L.V. (Lydia)
All right.
0:12:45.480 --> 0:12:49.290
Steentjes, L.V. (Lydia)
What do you think specifically about the sustainability part of the plan?
0:12:50.650 --> 0:12:51.970
Govert De Haas
I didn't see a plan.
0:12:53.930 --> 0:12:54.420
Govert De Haas
Cool.
0:12:53.950 --> 0:12:54.940
Steentjes, L.V. (Lydia)
Ohh the.
0:12:55.620 --> 0:12:58.210
Govert De Haas
What they communicate with us by talking?
0:12:58.910 --> 0:12:59.330
Steentjes, L.V. (Lydia)
OK.
0:12:59.220 --> 0:12:59.970
Zaaijer, S.P. (sascha)
OK.
0:13:0.110 --> 0:13:2.410
Govert De Haas
So we did get a visit and.
0:13:5.210 --> 0:13:10.980
Govert De Haas
Also on the ship stainability issue, we discussed this and I did ask them what they.
0:13:11.80 --> 0:13:11.530
Govert De Haas
Uh.

0:13:14.300 --> 0:13:19.30
Govert De Haas
What? What? What is the vision and what? What are the the target?
0:13:21.360 --> 0:13:34.450
Govert De Haas
But also in our biggest contractors are government. So we are ahead, I can say in sustainability, rebuilt electric vessels, we build battery powered vessels we are.
0:13:35.840 --> 0:13:37.690
Govert De Haas
Involved in a.
0:13:38.550 --> 0:13:38.850
Govert De Haas
And.
0:13:39.730 --> 0:13:42.490
Govert De Haas
I would say that in English the.
0:13:43.990 --> 0:13:45.20
Govert De Haas
Let me say Markt stuff.
0:13:45.740 --> 0:13:46.970
Zaaijer, S.P. (sascha)
Uh, hydrogen?
0:13:47.490 --> 0:13:49.580
Govert De Haas
I just didn't driven vessels.
0:13:51.490 --> 0:13:58.130
Govert De Haas
We actually are on a we have other regard in Rotterdam, we are very close to be a the 1st.
0:13:59.320 --> 0:14:5.330
Govert De Haas
Possibility to to get oxygen hydrogen as a load station.
0:14:6.20 --> 0:14:9.20
Govert De Haas
So that in a pilot situation, there are a lot of.
0:14:9.900 --> 0:14:14.260
Govert De Haas
People in the market at want to run the boats on hydrogen. The only thing is.
0:14:14.900 --> 0:14:20.400
Govert De Haas
It's not available either water site, so we are involved in this project so.
0:14:22.180 --> 0:14:27.530
Govert De Haas
If you look at our business customer wise, but also our own business, this is a hot topic for us.

0:14:28.560 --> 0:14:37.590
Govert De Haas
And I was curious about the study in what direction that did that go. And the only thing they could tell me that they were planning to make.
0:14:39.810 --> 0:14:41.300
Govert De Haas
Some kind of special?
0:14:41.960 --> 0:14:43.770
Govert De Haas
Uh with salt?
0:14:44.880 --> 0:14:45.500
Govert De Haas
Three different.
0:14:44.780 --> 0:14:46.470
Zaaijer, S.P. (sascha)
Uh seesaw batteries? Yeah.
0:14:47.800 --> 0:14:48.290
Zaaijer, S.P. (sascha)
Or.
0:14:46.310 --> 0:14:49.300
Govert De Haas
She she shall batteries on the talk about Hudson.
0:14:49.790 --> 0:14:50.190
Zaaijer, S.P. (sascha)
Yeah.
0:14:50.670 --> 0:14:51.340
Govert De Haas
And.
0:14:52.470 --> 0:15:6.920
Govert De Haas
Well, actually I wasn't really impressed by that because I know the Hudson and I know the circumstances there and it was if it it, I was curious about what's the plan and they could not tell me more than what they just what you told me.
0:15:7.700 --> 0:15:12.350
Govert De Haas
And I was just curious about the details and I'm waiting for that, but I still don't have anything.
0:15:12.800 --> 0:15:15.190
Zaaijer, S.P. (sascha)
All right. Yeah. For us first we.
0:15:16.240 --> 0:15:28.310
Zaaijer, S.P. (sascha)
Understand about the Cecil batteries. Uh, was that? It was mainly an onshore energy source, so they would have the seasonal batteries onshore and will provide energy for the tug boats.

0:15:29.70 --> 0:15:30.360
Zaaijer, S.P. (sascha)
This is what we gathered from it.
0:15:31.780 --> 0:15:33.560
Zaaijer, S.P. (sascha)
Umm so yeah.
0:15:35.660 --> 0:15:35.890
Steentjes, L.V. (Lydia)
Yeah.
0:15:39.140 --> 0:15:39.520
Zaaijer, S.P. (sascha)
Alright.
0:15:35.90 --> 0:15:42.290
Govert De Haas
Well, that's enough date then. That was not from what I did understand. They were actually at that time planning it to do it on the vessel.
0:15:43.950 --> 0:15:51.570
Govert De Haas
But I did ask a few questions about how do you accommodate your students? How do you regulate safety? How do you regulate?
0:15:52.850 --> 0:16:2.920
Govert De Haas
All kinds of issues that has to do if you if you start to produce energy, there's all kinds of regulations.
0:16:3.650 --> 0:16:4.740
Govert De Haas
And.
0:16:5.550 --> 0:16:25.540
Govert De Haas
Also, for safety for the environment, because that's that is not allowed to do that in my ID. If you look at the Hudson, that's two steps away from living spaces. That is not. And then then I start my questions and then I did understand that I was the first one to ask this question so.
0:16:26.530 --> 0:16:31.240
Govert De Haas
I left it there. I wasn't impressed. Honestly, by what they were talking to me telling me.
0:16:31.50 --> 0:16:31.440
Zaaijer, S.P. (sascha)
Yeah.
0:16:33.90 --> 0:16:33.410
Steentjes, L.V. (Lydia)
Period.
0:16:34.370 --> 0:16:35.300
Steentjes, L.V. (Lydia)
Ohm.

0:16:36.650 --> 0:16:46.440
Steentjes, L.V. (Lydia)
Couldn't concerning the the schools being built. What do you know of the living lab initiative and what is your opinion of it?
0:16:47.250 --> 0:16:48.270
Steentjes, L.V. (Lydia)
As in the.
0:16:47.500 --> 0:16:48.550
Govert De Haas
I know I.
0:16:49.760 --> 0:16:51.500
Govert De Haas
I know not enough to have an opinion.
0:16:52.730 --> 0:16:53.160
Zaaijer, S.P. (sascha)
OK.
0:16:52.170 --> 0:16:54.480
Steentjes, L.V. (Lydia)
OK so.
0:16:54.620 --> 0:17:2.240
Govert De Haas
We we we did not get more information than a conversation and that six months ago with the kickoff of the project.
0:17:2.950 --> 0:17:4.540
Govert De Haas
And I invited.
0:17:4.620 --> 0:17:5.170
Govert De Haas
The.
0:17:6.840 --> 0:17:15.890
Govert De Haas
The the the people that are working in the project to visit us and we offered help because we I think a lot of things that.
0:17:17.330 --> 0:17:21.650
Govert De Haas
That are discussed are already here in place or we can.
0:17:22.910 --> 0:17:26.530
Govert De Haas
We do or we can cooperate in a way, so learn from each other.
0:17:34.960 --> 0:17:35.280
Zaaijer, S.P. (sascha)
Alright.
0:17:28.370 --> 0:17:36.250
Govert De Haas

And until now, it's quiet. You know, this is the first contact that we have. So I'm pleased by the fact that you are.
0:17:38.10 --> 0:17:44.460
Govert De Haas
Involved in this and tried to to get a plan from plan to.
0:17:45.600 --> 0:17:46.120
Govert De Haas
Do act.
0:17:46.670 --> 0:17:47.30
Zaaijer, S.P. (sascha)
Umm.
0:17:50.610 --> 0:17:58.700
Steentjes, L.V. (Lydia)
Additionally, do you believe it is possible and desirable for most slaves become a sustainable city within the next 10 years?
0:18:1.660 --> 0:18:2.230
Govert De Haas
Well, it's.
0:18:2.960 --> 0:18:3.620
Govert De Haas
If it.
0:18:5.700 --> 0:18:6.970
Govert De Haas
If it is possible that.
0:18:7.780 --> 0:18:14.670
Govert De Haas
That's also the definition of sustainability is also not black and white, so that.
0:18:14.750 --> 0:18:15.100
Govert De Haas
The.
0:18:16.610 --> 0:18:23.40
Govert De Haas
But I think that that it it's anyway very good thing to make progress in the development.
0:18:23.970 --> 0:18:24.440
Zaaijer, S.P. (sascha)
OK.
0:18:26.180 --> 0:18:32.70
Govert De Haas
But to to make an quote or make a statement that it's done in 10 years, then first you have to.
0:18:33.710 --> 0:18:37.520
Govert De Haas
Make a definition what you want, because sustainability is.
0:18:39.210 --> 0:18:54.790
Govert De Haas

Yes, I at this time electric cars are driving around, but the electricity supply is not sustainable. So how's sustainable is there in the car that that is what you should consider? I think if you make statements like that, but.
0:18:55.940 --> 0:18:57.460
Govert De Haas
I think that the the.
0:19:0.420 --> 0:19:1.270
Govert De Haas
Everybody is.
0:19:2.390 --> 0:19:12.350
Govert De Haas
Is on one line that that is. That is good to to develop in a more sustainable world. And I think that that Maslow's is.
0:19:13.370 --> 0:19:16.580
Govert De Haas
Actually doing right a lot of things in the good direction.
0:19:18.100 --> 0:19:19.0
Govert De Haas
And.
0:19:20.740 --> 0:19:24.310
Govert De Haas
Yes, I we have to move forward with that and and.
0:19:25.610 --> 0:19:32.550
Govert De Haas
The relation with the with the project that you actually work on now and the sustainability I cannot.
0:19:33.280 --> 0:19:35.930
Govert De Haas
Have an opinion about it because I don't have the information.
0:19:38.880 --> 0:19:39.250
Zaaijer, S.P. (sascha)
Alright.
0:19:43.10 --> 0:19:53.420
Steentjes, L.V. (Lydia)
I mean the project that we're working on now is quite new and there's currently not a lot of information available on the project.
0:19:55.70 --> 0:19:56.680
Steentjes, L.V. (Lydia)
To give you some backgrounds.
0:19:58.600 --> 0:20:9.420
Steentjes, L.V. (Lydia)
So Erfgoedkwartiermakers is going to work with a lot of students and sustainable developments from Leiden, Delft and Erasmus to help conduct research.

0:20:10.70 --> 0:20:13.840
Steentjes, L.V. (Lydia)
To help assist in the implementation of the.
0:20:14.760 --> 0:20:16.370
Steentjes, L.V. (Lydia)
Of their goals.
0:20:17.390 --> 0:20:18.520
Steentjes, L.V. (Lydia)
And their heritage plan.
0:20:20.140 --> 0:20:27.650
Steentjes, L.V. (Lydia)
And in for the background of the tin becoming sustainable and 10 years.
0:20:29.220 --> 0:20:37.850
Steentjes, L.V. (Lydia)
I know the municipality has a 10 year sustainability plan or 10 year plan for sustainability and that they want to become.
0:20:38.730 --> 0:20:39.590
Steentjes, L.V. (Lydia)
I believe.
0:20:40.540 --> 0:20:49.170
Steentjes, L.V. (Lydia)
Like 50% the city be 50% based off of a sustainable energy and sustainable sources.
0:20:49.800 --> 0:20:50.480
Steentjes, L.V. (Lydia)
Uh.
0:20:51.920 --> 0:20:54.720
Steentjes, L.V. (Lydia)
Do you think that's possible at 50%?
0:20:57.840 --> 0:20:58.470
Steentjes, L.V. (Lydia)
Change.
0:20:58.170 --> 0:21:11.670
Govert De Haas
Well, I I think that a lot of power, but that's that has nothing to do with the project. Yeah, that we get is we cannot generate our own power limited to sun panels and winters. No possibility here.
0:21:12.530 --> 0:21:20.20
Govert De Haas
So that depends really on the availability of sustainable energy that we can get supplied by the energy supplies.
0:21:21.190 --> 0:21:23.580
Govert De Haas
I think if it's available that we could do it.

0:21:24.310 --> 0:21:25.410
Govert De Haas
And I can of course.
0:21:26.130 --> 0:21:27.630
Govert De Haas
Imagine that there are a lot of.
0:21:29.200 --> 0:21:37.440
Govert De Haas
Small steps that you can make by looking at all kinds of local energy consumption and the way that is organized.
0:21:38.320 --> 0:21:44.990
Govert De Haas
But the main energy sources I think in in my slows is gas and.
0:21:46.320 --> 0:21:46.950
Govert De Haas
Electricity.
0:21:47.820 --> 0:21:49.680
Govert De Haas
That we cannot do on our own.
0:21:51.970 --> 0:21:52.360
Steentjes, L.V. (Lydia)
OK.
0:21:54.640 --> 0:21:58.670
Steentjes, L.V. (Lydia)
Specifically, what challenges do you see when it comes to?
0:22:0.90 --> 0:22:3.30
Steentjes, L.V. (Lydia)
Sustainable refurbishing and design of boats.
0:22:9.30 --> 0:22:15.100
Govert De Haas
That is too complicated to do. To discuss that in this meeting, a vessel is.
0:22:16.920 --> 0:22:28.870
Govert De Haas
Very, very able in the way that it is in service. If you look at the petrol boat that is doing a survey where on the river which mainly means slow.
0:22:29.790 --> 0:22:36.620
Govert De Haas
Sailing and investigating the water bottom levels and the debt levels and all kinds of.
0:22:37.370 --> 0:22:38.300
Govert De Haas
Water quality.
0:22:39.720 --> 0:22:48.540
Govert De Haas

We are already working on specials that can do that on hydrogen with a fuel cell and electric propulsion.
0:22:49.510 --> 0:22:51.520
Govert De Haas
Which is there, I think very soon.
0:22:53.80 --> 0:23:0.370
Govert De Haas
If you look at the the vessels that are driving people, bringing people to the wind farms on the notchy.
0:23:1.370 --> 0:23:13.290
Govert De Haas
We see also a development there that you have diesel driven vessels that if they are on sailing speed that they can use hydrogen as a extra fuel so.
0:23:14.100 --> 0:23:27.970
Govert De Haas
When the the shape is starting it starting on 100% diesel and if it's on sale then it goes from 100% easel to fifty 6070% hydrogen and the rest is diesel.
0:23:29.460 --> 0:23:29.930
Govert De Haas
Uh.
0:23:30.900 --> 0:23:37.970
Govert De Haas
Other developments are both that are getting more efficient help shape so that they.
0:23:39.980 --> 0:23:45.30
Govert De Haas
Really have a lower track when they sail.
0:23:46.200 --> 0:23:51.500
Govert De Haas
We are involved in a project that's called Flying Fish from the Delft University.
0:23:52.190 --> 0:23:57.990
Govert De Haas
Which is a combination of electric driven boats with hydrofoil.
0:23:58.890 --> 0:24:5.750
Govert De Haas
So then you get a wing only your boat, which means that it's like a hydrofoil like we did. See on other vessels.
0:24:6.930 --> 0:24:17.440
Govert De Haas
Diesel driven, especially in Russia, they use a lot of them for public transportation purposes, but that is if you look at the, the, the.
0:24:18.280 --> 0:24:25.490
Govert De Haas
In the sale racing sport, the this this is also used this technique and this is a.

0:24:26.320 --> 0:24:30.340
Govert De Haas
Extreme reduction of drag. If you can put a boat on wings.
0:24:31.150 --> 0:24:37.220
Govert De Haas
So indeed development is because the weight of energy in electricity.
0:24:38.490 --> 0:24:50.170
Govert De Haas
Packed in a battery or in hydrogen is still more than 50% heavier than in diesel. It's complicated to make a fast boat that is not riven on diesel.
0:24:52.750 --> 0:24:53.220
Govert De Haas
So.
0:24:53.90 --> 0:24:53.460
Steentjes, L.V. (Lydia)
Right.
0:24:54.130 --> 0:25:4.120
Govert De Haas
But if this is just a a sample of what's going on, but like I say, this is, this is if we look at it in depth, there is so much development.
0:25:5.180 --> 0:25:8.890
Govert De Haas
In in propulsion in in the way of thinking.
0:25:8.970 --> 0:25:11.740
Govert De Haas
The alternative fuels.
0:25:12.980 --> 0:25:17.760
Govert De Haas
And all kinds of technical technology. But there's a there's a big.
0:25:23.210 --> 0:25:23.560
Zaaijer, S.P. (sascha)
OK.
0:25:19.590 --> 0:25:31.630
Govert De Haas
Challenge, but also big change coming I think especially when it is to the inland festivals or the coastal vessels. If you look at the ocean transport so from.
0:25:32.480 --> 0:25:33.420
Govert De Haas
Worldwide.
0:25:34.420 --> 0:25:36.290
Govert De Haas
There's also development, but that is.
0:25:37.420 --> 0:25:45.690
Govert De Haas

There, it's not going so fast. So if you look at the really big container boats and the real, the cruise ships and that kind of vessels, they change but.
0:25:46.400 --> 0:25:51.440
Govert De Haas
Not too dramatic in the other stuff that that's around a lot of things are changing.
0:25:53.820 --> 0:25:54.70
Steentjes, L.V. (Lydia)
Right.
0:25:54.0 --> 0:25:54.390
Zaaijer, S.P. (sascha)
OK.
0:25:55.320 --> 0:25:58.100
Zaaijer, S.P. (sascha)
I am because one of the plans of.
0:25:59.340 --> 0:26:4.380
Zaaijer, S.P. (sascha)
The project was to make the historical tugboats.
0:26:4.640 --> 0:26:9.490
Zaaijer, S.P. (sascha)
Uh commercial touring vessels for tourism.
0:26:11.350 --> 0:26:12.530
Zaaijer, S.P. (sascha)
What did them be?
0:26:13.450 --> 0:26:19.800
Zaaijer, S.P. (sascha)
Perhaps beneficial to have a refurbish of the engine? Maybe make it more.
0:26:19.880 --> 0:26:20.390
Zaaijer, S.P. (sascha)
Uh.
0:26:22.740 --> 0:26:23.690
Govert De Haas
Sustainable.
0:26:21.510 --> 0:26:31.900
Zaaijer, S.P. (sascha)
Uh, how do you called, uh, sustainable, yeah, or a hybrid engines? Or perhaps make use of lighter fuel fuels? Would that be?
0:26:34.230 --> 0:26:38.600
Govert De Haas
Well, a lot of the emission can be reduced by using cleaner fuel.
0:26:39.970 --> 0:26:40.760
Govert De Haas
Uh.

0:26:43.90 --> 0:26:46.750
Govert De Haas
I was thinking, what's the stuff that they take out now at fuel?
0:26:49.240 --> 0:26:50.670
Govert De Haas
Saw it in English sometimes.
0:26:52.550 --> 0:26:54.380
Zaaijer, S.P. (sascha)
You you can say it in Dutch on my.
0:26:54.30 --> 0:26:54.500
Govert De Haas
The.
0:26:55.600 --> 0:26:56.870
Govert De Haas
Forwards mice. It's marvel.
0:26:57.710 --> 0:26:59.380
Zaaijer, S.P. (sascha)
Uh, so I thought. Uh, sulphur.
0:26:59.930 --> 0:27:0.590
Govert De Haas
Sulfur.
0:27:0.950 --> 0:27:1.270
Zaaijer, S.P. (sascha)
Yeah.
0:27:2.520 --> 0:27:5.750
Govert De Haas
And there's, for example sulfur, but also in other.
0:27:6.690 --> 0:27:7.150
Govert De Haas
Uh.
0:27:9.130 --> 0:27:20.180
Govert De Haas
Part of what was in the marine fuel in the past cannot be burned now in marine fuel in the areas where we live, so that can only be used in transatlantic.
0:27:21.680 --> 0:27:32.630
Govert De Haas
Which is in my idea little bit stupid because now they take everything out, put it in the marine fuel that is used on the Atlantic and it's still getting in the environment. But that's how the world works.
0:27:34.890 --> 0:27:36.930
Govert De Haas
But yes, if you want to make them cleaner.
0:27:37.830 --> 0:27:56.810
Govert De Haas

Clean fuel would be an option to make it a little bit cleaner if I've pretty sharp picture of the current fleet of historic vessels and it would be really complicated to make really progress and make them cleaner. This is such old fashioned.
0:27:57.620 --> 0:27:59.460
Govert De Haas
Techniques that it is.
0:28:0.970 --> 0:28:4.110
Govert De Haas
Uh, hard to get any result.
0:28:5.670 --> 0:28:10.230
Govert De Haas
The cost would be extreme I think, and the.
0:28:11.650 --> 0:28:16.180
Govert De Haas
The yield to fit the the the reduction in emission would be limited to.
0:28:17.270 --> 0:28:18.510
Govert De Haas
To just a little bit.
0:28:19.990 --> 0:28:20.360
Zaaijer, S.P. (sascha)
OK.
0:28:19.670 --> 0:28:31.260
Govert De Haas
And so I, that's my opinion and I'll I challenge people to to if if there's if there's a solution. I'm very curious because I like to learn.
0:28:32.60 --> 0:28:32.430
Zaaijer, S.P. (sascha)
Umm.
0:28:32.30 --> 0:28:49.210
Govert De Haas
But from what I the way I look at it, if I look at the elbow or I look at the foodie or the other ships, this is really, really old fashioned propulsion engines. And we did do quite a lot of experience we have with that because now every.
0:28:49.910 --> 0:28:53.470
Govert De Haas
Ship that's built or every engine that is installed.
0:28:55.510 --> 0:29:4.100
Govert De Haas
I have the regulation which is named States five, which means that's an engine with the after treatment system, similar to what you see in a car.
0:29:5.260 --> 0:29:11.10
Govert De Haas
On the guarded, sometimes they call it blue tech, or it means that you have to put at blue in your car.

0:29:12.390 --> 0:29:13.820
Govert De Haas
And that vision and.
0:29:16.340 --> 0:29:22.750
Govert De Haas
Technique to wash your exhaust gases to low level of.
0:29:22.840 --> 0:29:26.340
Govert De Haas
A dirt put it that way.
0:29:26.100 --> 0:29:26.520
Zaaijer, S.P. (sascha)
Umm.
0:29:27.300 --> 0:29:27.550
Steentjes, L.V. (Lydia)
Umm.
0:29:28.100 --> 0:29:37.850
Govert De Haas
In the past, when this technology was developed, we were involved in a lot of pilot projects, from factories and from customers to invent the systems.
0:29:38.690 --> 0:29:42.370
Govert De Haas
So we know what type of engines are.
0:29:43.250 --> 0:29:43.990
Govert De Haas
More or less.
0:29:46.930 --> 0:29:57.740
Govert De Haas
Possible to do this technology and where the line is that you cannot cross because the technique is too old and we have also in our Group A.
0:29:59.790 --> 0:30:3.50
Govert De Haas
Company. It's called power port. Maybe you did cheat on our website?
0:30:3.770 --> 0:30:6.580
Govert De Haas
So we supply propulsion systems for ships.
0:30:7.220 --> 0:30:11.70
Govert De Haas
It's mainly diesel driven, but also electric or hybrid.
0:30:12.10 --> 0:30:21.210
Govert De Haas
Uh. And like I say in the past 2025 years, a lot of our customers, but also the factories that we are connected to this experiment.
0:30:21.810 --> 0:30:45.770
Govert De Haas

Because they want the field experience and we have the customers and we have to connect you to the factory. So for example from port of Rotterdam we had a lot of vessels in all kind of ages that were that we built in the the pilot projects. So signability. So after treatment systems to see what was possible and what was not.
0:30:47.260 --> 0:30:56.840
Govert De Haas
With that experience, looking at the fleet of the historical boats in the slides, I think there's not much to do there with the reduction otherwise then.
0:31:0.660 --> 0:31:1.100
Zaaijer, S.P. (sascha)
Umm.
0:30:58.440 --> 0:31:3.590
Govert De Haas
Maybe the accelerate power you can think of the electric.
0:31:5.110 --> 0:31:16.400
Govert De Haas
Generators and in fuel and maybe little light after treatment or or better adjustment of the engines of.
0:31:17.930 --> 0:31:18.400
Zaaijer, S.P. (sascha)
Yes.
0:31:21.370 --> 0:31:23.40
Zaaijer, S.P. (sascha)
No, with a.
0:31:18.870 --> 0:31:23.940
Govert De Haas
But you cannot get them clean. That's an illusion. That's not possible. Especially this. Yeah.
0:31:24.270 --> 0:31:27.420
Zaaijer, S.P. (sascha)
Yeah, we've heard similar responses yet so.
0:31:28.270 --> 0:31:28.590
Govert De Haas
OK.
0:31:28.280 --> 0:31:32.50
Steentjes, L.V. (Lydia)
Yeah. We actually spoke to the elder and they were very.
0:31:33.290 --> 0:31:37.440
Steentjes, L.V. (Lydia)
Clear on the limitations of their engine.
0:31:38.390 --> 0:31:38.640
Zaaijer, S.P. (sascha)
Yeah.

0:31:39.260 --> 0:31:39.640
Steentjes, L.V. (Lydia)
Yeah.
0:31:39.70 --> 0:31:50.860
Govert De Haas
Well, what what what we experienced in the past that if you if you build equipment on older engines, that's basically like you're close your throat.
0:31:51.780 --> 0:31:52.260
Govert De Haas
And.
0:31:53.640 --> 0:31:55.720
Govert De Haas
You can really damage the engine.
0:31:56.740 --> 0:31:58.160
Govert De Haas
By uh.
0:31:59.10 --> 0:32:0.780
Govert De Haas
Changing the circumstances.
0:32:1.690 --> 0:32:4.950
Govert De Haas
Wait with everything that I have to do with air and exhaust.
0:32:6.410 --> 0:32:6.810
Zaaijer, S.P. (sascha)
OK.
0:32:6.480 --> 0:32:8.370
Govert De Haas
So basically you invest.
0:32:9.860 --> 0:32:15.530
Govert De Haas
Extreme amounts of money because it's really expensive. The the good after treatment system can.
0:32:16.230 --> 0:32:20.290
Govert De Haas
Go as high as much as 30 or 40% from the price of an engine.
0:32:21.590 --> 0:32:21.940
Steentjes, L.V. (Lydia)
Wow.
0:32:21.650 --> 0:32:22.270
Govert De Haas
But then.
0:32:22.930 --> 0:32:30.550
Govert De Haas

Imagine that you have the elbow which has the historical engines that were built in the 50s that are no longer in production.
0:32:31.420 --> 0:32:37.660
Govert De Haas
And the engine would be getting damaged by the after treatment system. That's a nightmare for them.
0:32:38.420 --> 0:32:38.800
Zaaijer, S.P. (sascha)
Umm.
0:32:38.690 --> 0:32:40.250
Govert De Haas
Because then the historical.
0:32:40.970 --> 0:32:47.420
Govert De Haas
Aspect is gone that you can put a new engine in, but that, yeah. Then it's not historical anymore so.
0:32:49.440 --> 0:32:49.850
Zaaijer, S.P. (sascha)
Alright.
0:32:49.390 --> 0:32:51.740
Govert De Haas
I think that that's that's not the.
0:32:52.650 --> 0:32:57.320
Govert De Haas
That's not the serious way to direction to sink in.
0:32:59.410 --> 0:32:59.750
Zaaijer, S.P. (sascha)
OK.
0:33:1.170 --> 0:33:1.480
Steentjes, L.V. (Lydia)
That.
0:33:0.680 --> 0:33:8.690
Govert De Haas
Especially also because we believe if you look at the current development that diesel is.
0:33:9.950 --> 0:33:15.310
Govert De Haas
In a way, also on a busy in the in the last.
0:33:16.30 --> 0:33:23.410
Govert De Haas
Part of his life, I think if we not in 10 years, but 20 or 30 years from now, I think that the.
0:33:27.830 --> 0:33:39.140
Govert De Haas
Operating in the port as supply vessels or as tugboats or as firefighters or pilot vessels or crew crew.
0:33:40.310 --> 0:33:43.140
Govert De Haas
Crystals all dot that type of hessels I think.
0:33:44.40 --> 0:33:44.530
Govert De Haas
22.

Survey Questions and flyer

1. Which age group do you belong to?

- 0-17
- 18-30
- 31-40
- 41-50
- 51-60
- 61+

2. Have you heard of the City Maritime Maassluis project? If yes, what is your opinion on the project?
3. In the past year, have you seen any changes in the harbour in terms of sustainability if yes, please elabourate?

For the following six statements, please indicate whether you disagree, slightly disagree, are neutral, slightly agree, or agree:

1. I think sustainability is an important part of my daily life.
2. I think sustainability should be taken seriously for the Maassluis harbour.
3. I am okay with replacing the historic engines of the tugboats to make them more sustainable.
4. I believe the maritime heritage of the Maassluis harbour is important to preserve.
5. I believe sustainability will help the economy of Maassluis.
6. I believe sustainability will make Maassluis more attractive to new residents.

10. Do you have any suggestions for how to make the Maassluis harbour more sustainable?

Universiteit Leiden

Duurzamhaven x
Erfgoedkwatiermakers
x LDE

RESEARCH MAASSLUIS

WE NEED YOU!

Give us your opinion on your town!

Answer in Dutch or English!

This will take only 5 minutes of your time

https://linktr.ee/group1maassluis