

SeeElefant

Marine Plastic Recycling



Bundespreis
ecodeSIGN



Bundesministerium
für Umwelt, Naturschutz
und nukleare Sicherheit

Umwelt
Bundesamt

FINALIST

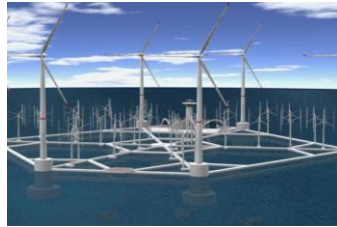


Deutscher
Nachhaltigkeitspreis
2021

Slide | 03.02.2025

oeoo
one earth-one ocean

Why plastic recycling on ships?

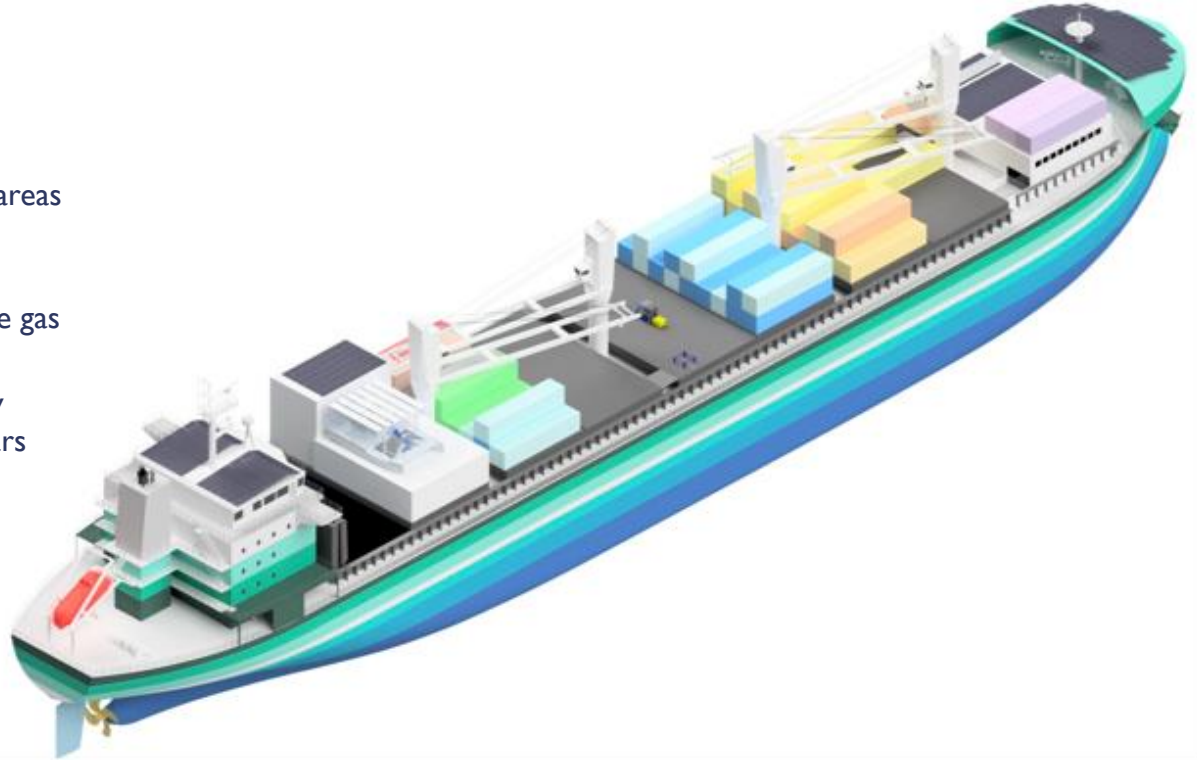


- + Ships are mobile → reduced investment risk
- + Shipyards are leaders in building complex systems → turnkey delivery, including testing
- + Ships are custom optimized → quality-certified, modular, scalable
- + Ships do not require additional areas at the place of use
- + Ships belong to the flag state → attractive financing and possibly subsidies

Shipbuilding + Recycling Technology

The best of both industries

- + SeeElefant systems reduce plastic pollution in coastal metropolitan areas
- + Combination of the leading technology from the areas of shipbuilding and recycling with flue gas cleaning
- + All systems have been successfully operated in practice for many years



SeeElefant

The Demonstrator: Ready for Use in 2026/2027

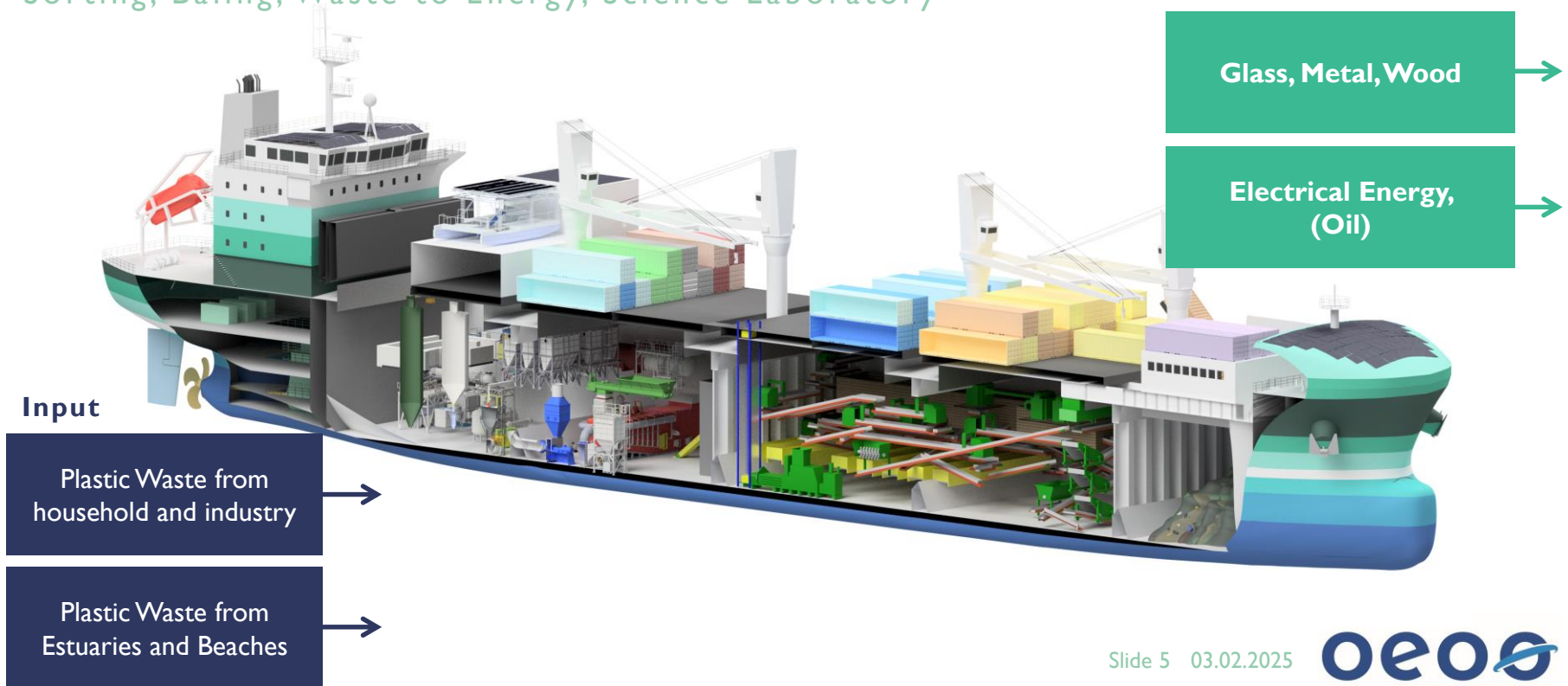
- + Conversion and refit of a 2nd-hand bulk carrier
- + Processing of 60,000 t/a plastic waste by on-board recycling plant
- + Container-based waste logistics including transfer terminal
- + Stationary operations
- + Income from single-variety plastics and electrical energy for the local power grid



Input + Output

Processing of Plastic Waste: 60,000 t/a

Sorting, Baling, Waste to Energy, Science Laboratory

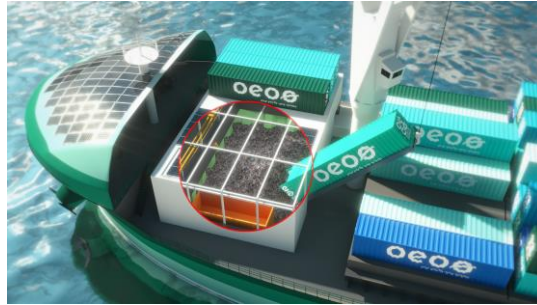


Innovative Details

Transfer-Station



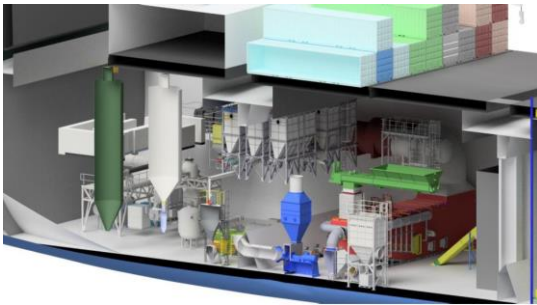
Tipping-Device



Bale Lift



BAT- Flue Gas Cleaning



Science-Laboratory



WasteCollection-Catamarans



Technical Data Sheet: Initial Design



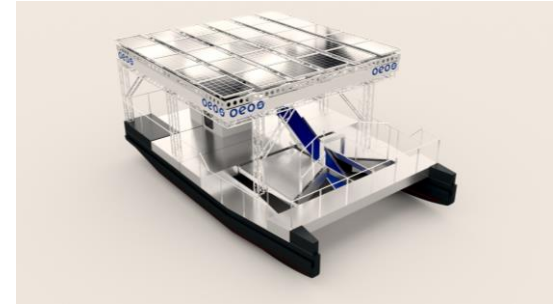
Ship

double-hull bulkcarrier Hyundai MIPO, Lpp=171m, B=27.8m, 14.000tdw at 6,50m draft, main engine=7.860kw/129rpm, gensets=3*900kw/900rpm, 4*cargo crane 30t/20m, hydr. foldable hatch covers, accommodation=25 cabins, converted with a waste recycling plant for stationary anchored operation, certified from IMO + DNV + strict European emission standards. Furthermore a fire detection- and extinguishing plant (sprinkler, waterspray, foam, monitors) will be provided.



Plastik Recycling

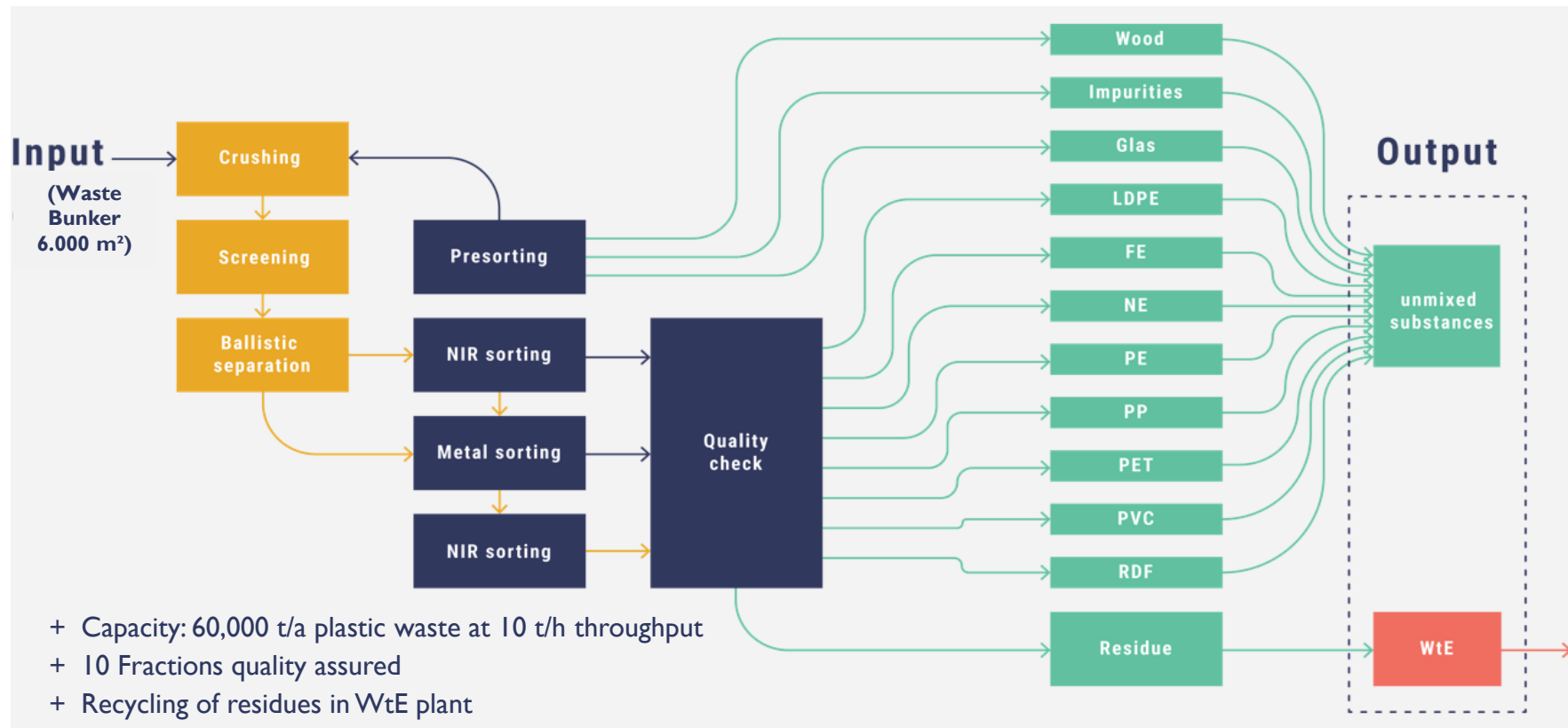
Plant for 60.000t/a plastic waste (density=0,2t/m³), consisting of a bunker with 5.800m³, a sorting plant 10t/h with survey cabins, shredders, filters, infra-red sorters, conveyor belts, bale binder with lift and container station for 10 different recycling materials. Residual materials (e.g. sandwich components) are transferred to a Waste-to-energy plant (WtE): 18.000 t/h with burner, filter, emission monitoring and a turbine for electrical power generation (4.000 kw).



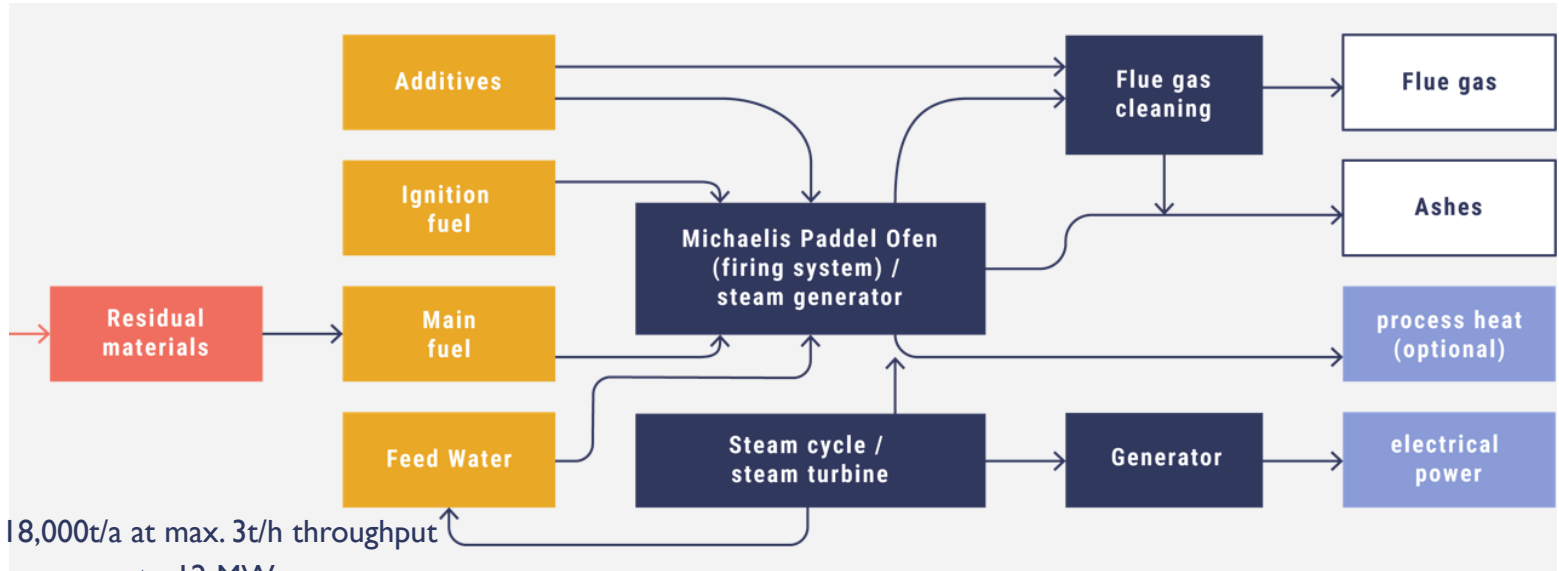
Highlights

Science laboratory for waste analysis and process optimisation,
Pyrolysis Plant / Waste to Fuel Technology
Swarm of small waste collection catamarans (2* SeeKuh, 6*SeeHamster) for fishing near-shore plastic: waste from estuaries, beaches and rivers

Flow Chart Sorting Plant



Flow Chart WtE Plant

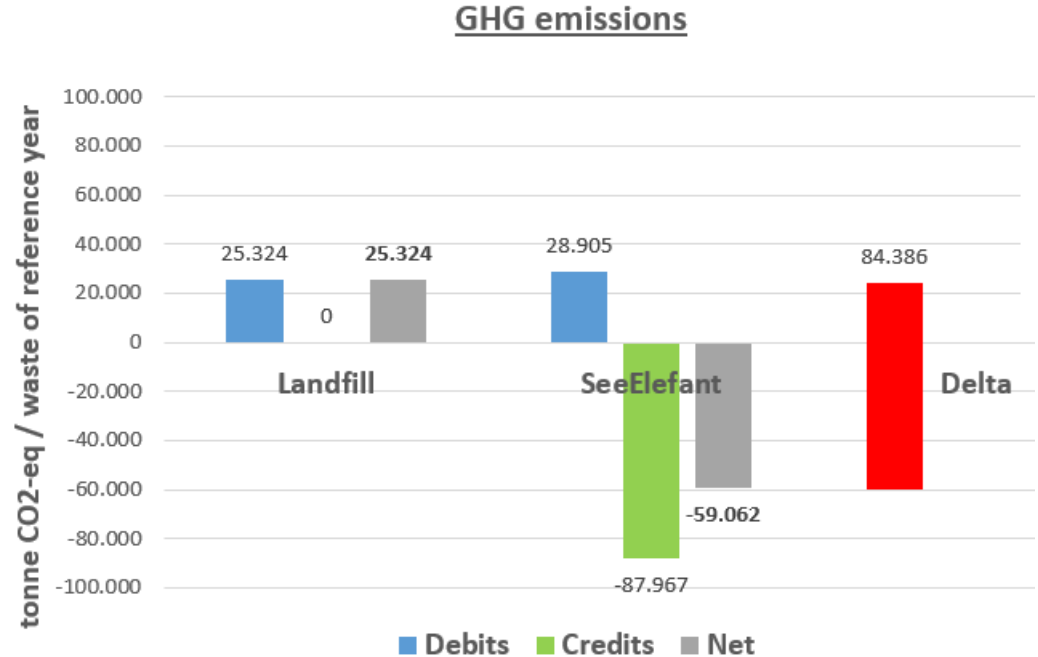


- + Capacity 18,000t/a at max. 3t/h throughput
- + Thermal power: up to 12 MW
- + Electrical power: up to 4 MW
- + Water treatment, combustion chamber, steam generation, generator
- + Electrical energy for self-sufficiency and feeding into the grid
- + Certified flue gas cleaning and monitoring

Ecological Benefits + Circular Economy

Advantages of using the SeeElefant

- + Positive contribution to decarbonization: savings of 84,000 t/a CO₂-eq
- + Substantial improvement in regional plastic waste disposal
- + Closing the material loop through high-quality recycling
- + Saving of primary material: increase in resource efficiency



Requirements for potential locations

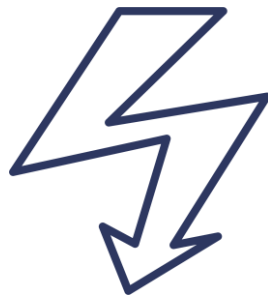
Metropolitan regions and islands are predestined



Existing disposal system and willingness to share the costs of waste disposal (gate fee)



Demand for clean beaches / increase in attractiveness for tourism



Demand for “green” electrical energy

- + Massive waste problems, inadequate disposal infrastructure, overloaded landfills
- + Political stability & democratic structures
- + Provision of a moving space, logistics area and connection to the local power grid
- + Embedding the SeeElefant concept in existing national green economy programs to avoid plastic waste and reduce emissions

Financial Planning

CapEx

80 Mio. EUR Total / Financing Components:

15 Mio. EUR Shipyard funding for innovative shipbuilding: German Subsidy

5 Mio. EUR European Innovation Fund – Green Deal CapEx Grants

15 Mio. EUR Equity Investors: Company Shares SPV Securion AG and Donations & Sponsoring*

45 Mio. EUR Debt Capital

OpEx

5,2 Mio. EUR p.a.

0,6 Mio. EUR p.a. Green Deal Subsidy

Turnover

- + Sorted Plastic
- + Other Valuables: Metal + Glass
- + Electrical Energy
- + CO2 - Certificates



- + Expectation for the Demonstrator-System: positive Operating Result
- + Objective: Increase in profitability through scaling and very positive GHG balance
- + *CapEx and Operations via Special Purpose Vehicle Securion AG: Project Partners & Sponsors acquire shares/company participation

Business Model

Parameterized planning of costs, services, payments and quantities

Business Model: SeeElefant / Planning 2025 - 2034 / Pilot Project V7.8				
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Sales	Costs	Cash flow	Quantities & Capacity	Charts
PRICES RECYCABLES	SHIP OPERATION	CASH & FINANCING	CAPACITY PLAN	SALES TREND
SALES SORTED PLASTIC	PLANT OPERATION		PLANT PARAMETER	COST TREND
SALES OTHER RECYCABLES	R&D-LAB		FLOW RATES PLAN	PROFIT
SALES ENERGY & CERTIFICATES	COLLECTION & SHUTTLE SHIPS		WASTE COMPOSITION/ONSHORE	QUANTITIES
WASTE DISPOSAL FEES	WASTE PROCUREMENT		WASTE COMPOSITION/OFFSHORE	COST PER TON WASTE INPUT
WASTE DISPOSAL GRANTS	DEPRECIATION		QUANTITIES PROCESSING	Information
PROFIT & LOSS STATEMENT		CapEx	QUANTITIES SORTED SALES	
		CAPITAL EXPENDITURES	QUANTITIES ENERGY SALES	
		SHIPYARD SUBSIDIES		READ ME: MODEL INFORMATION
				READ ME: MODEL ASSUMPTIONS

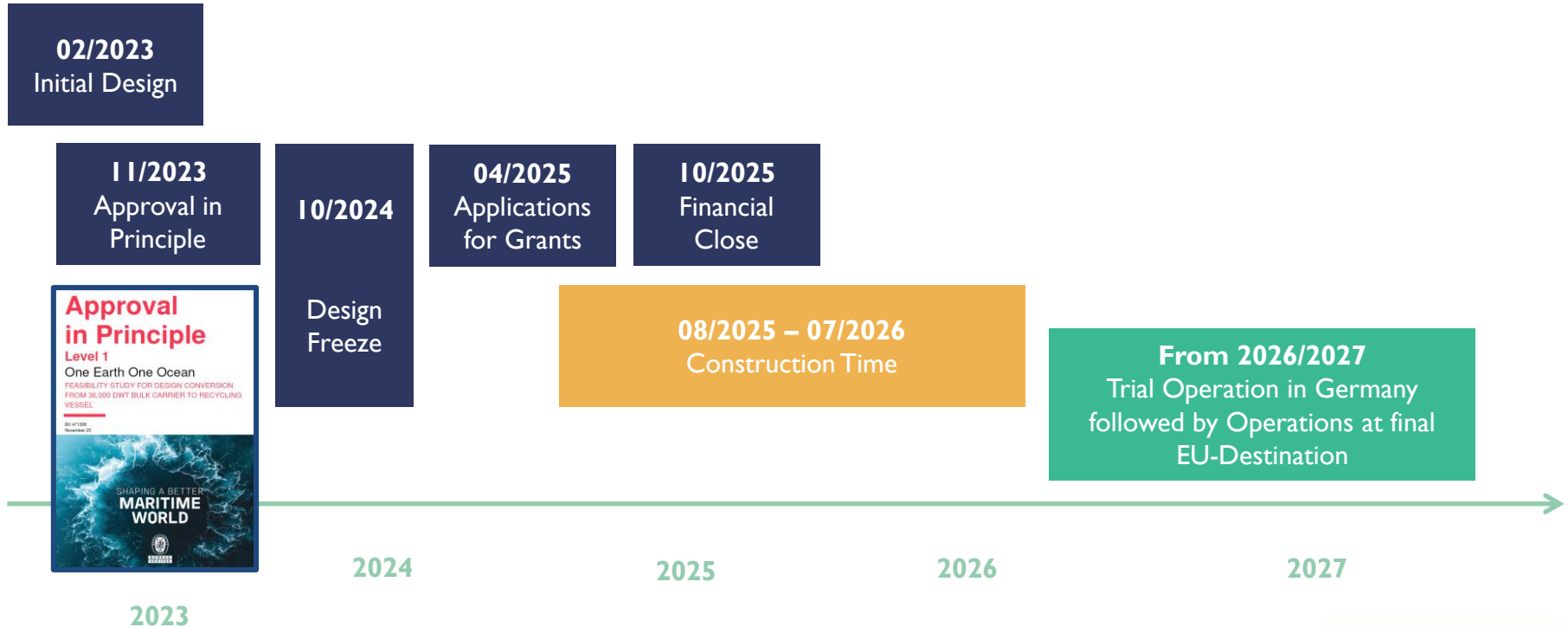
+ Creation of the greatest possible project and data transparency + Simulation options for a wide variety of data sets and assumptions

Conditions for Implementation

Conditions for Implementing the SeeElefant Pilot		
1	Owner / SPV / Operating Company	Securion AG, Munich
2	Project Sponsor / Idea Provider	One Earth - One Ocean e.V., Munich and Kiel / Non-Profit NGO
3	a. Applicant EU Green Deal Innovation Fund	Consortium Securion AG and One Earth - One Ocean e.V.
	b. Requirements for Funding	Total Financing proven via LOIs
4	Shipyard Funding Applicant	Shipyard to be commissioned
5	Financing / Debt Capital	Loans via Securion AG
6	Financing / Equity	Securion AG: Sponsors and Donors of OEEO, Current Project Partners SeeElefant and Future Supporters will form a Shareholder Structure
	a. Sponsors and Donors of OEEO	Examples: Schwarz-Gruppe, Holcim, Telekom, Electrolux, Röchling, Kärcher and other
	b. Actual Project Partner	Examples: NSB Niederelbe Schifffahrtsgesellschaft mbH & Co. KG, D-Buxtehude, Bureau Veritas SA Marine & Offshore, D-Hamburg, Bollegraaf Recycling Machinery BV, NL-Appingedam, Michaelis GmbH & Co. KG, D-Veitshöchheim u.a.
	c. Future Supporters	Recycling-/Impact-Oriented Companies, Vulture Capital Investors, Foundations, FMCGs
7	Management	Internationally experienced Experts from the Project Partners with C-Level Background

Time Planning

Status and Next Milestones



Network

SeeElefant Project Partner

- + NSB Niederelbe Schifffahrtsgesellschaft mbH & Co. KG, D-Buxtehude
- + Bureau Veritas SA Marine & Offshore, D-Hamburg
- + Howe Robinson Partners, D-Hamburg
- + SDC Ship Design & Consult GmbH, D-Hamburg
- + Michaelis GmbH & Co. KG, D-Veitshöchheim
- + Bollegraaf Recycling Machinery BV, NL-Appingedam
- + Minimax GmbH, D-Bad Oldesloh
- + S.M.I.L.E Engineering GmbH, D-Kiel
- + Impact Funding Europe GmbH, D-Kiel



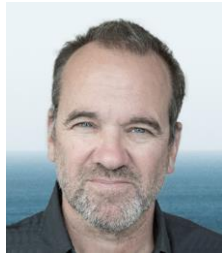
OEOO Project Team + Contact

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Board / CEO

Günther Bonin

ended his involvement as an IT entrepreneur in 2011 to counteract water pollution. With the establishment of the non-profit NGO One Earth-One Ocean e.V., he shows effective environmental protection in many internationally recognized projects.



Senior Manager Finance & Business

Dr. Harald Frank (Dipl. Volksw.)

was CFO in internationally oriented medium-sized companies for 15 years. As a consultant and interim manager, he has specialized in the development, financing and management of sustainability projects for many years.



Senior Naval Architect

Prof. Andreas Meyer-Bohe (Dipl.-Ing.)

was a project manager at the Sietas shipyard, head of the Tech. Offices of the Lindenau shipyard and director of the institute for shipbuilding at the University of Applied Sciences in Kiel. His professional skills lie in the areas of ship design, hydrostatics, maritime environmental protection and project management.



Senior Plant Engineer

Peter Berlekamp (Dipl.-Ing.)

has held various management positions in the Sulo Group as well as at Tönsmeier and in the Prezero Group for the operational management and planning of sorting and processing plants responsible.