

# WASTE HANDLING VALUE CHAIN

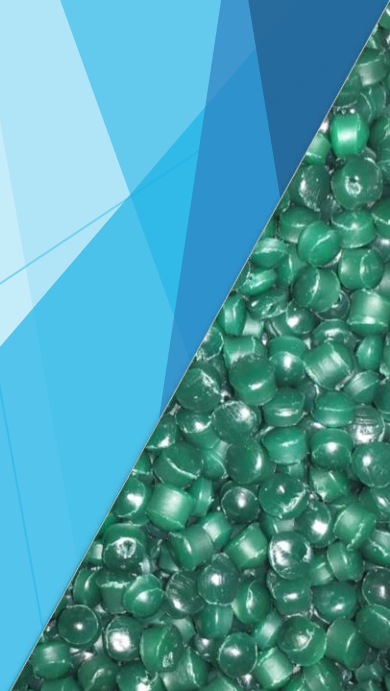
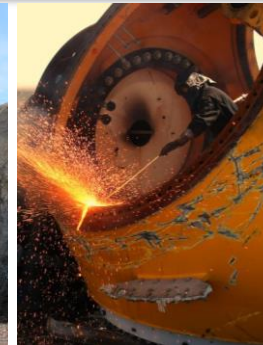
FROM MARINE PLASTIC WASTE  
TO SECONDARY RAW MATERIAL



# Matmortua waste handling facility



- ▶ Since 1979
- ▶ 25 employees
- ▶ Handling Industrial waste
  - ▶ Sorting facility
  - ▶ Transportation
  - ▶ Demolition crew
  - ▶ Shredding crew
- ▶ 8000 tonnes in circulation 2017

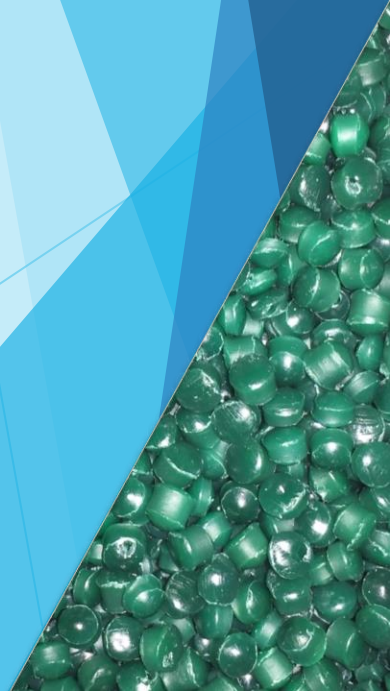


# Matmortua waste handling facility



**NOPREC**  
Norwegian Plastic Recycling

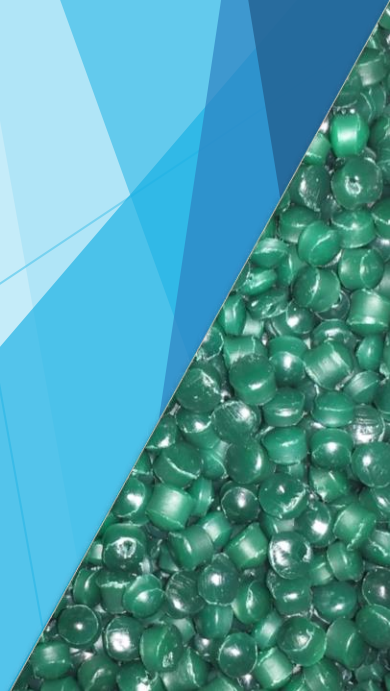
- ▶ Since 2017
- ▶ 3 employees
- ▶ Granulation of plastics
- ▶ 200 tonnes turnover 2017



# Matmortua location

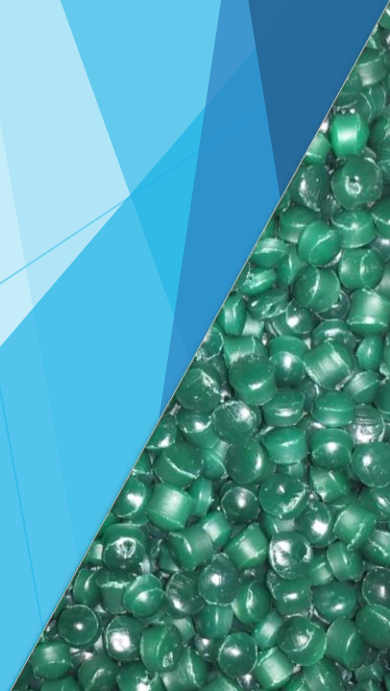


- ▶ Matmortua
  - ▶ Close to «Highway 1»
- ▶ North of us:
  - ▶ Maritime industry and aquaculture
    - ▶ Big volumes of high quality plastic waste
  - ▶ Expensive transportation
- ▶ South of us:
  - ▶ Infrastructure
  - ▶ Plastic industry



# Focusing on the plastics

- where is our raw material?



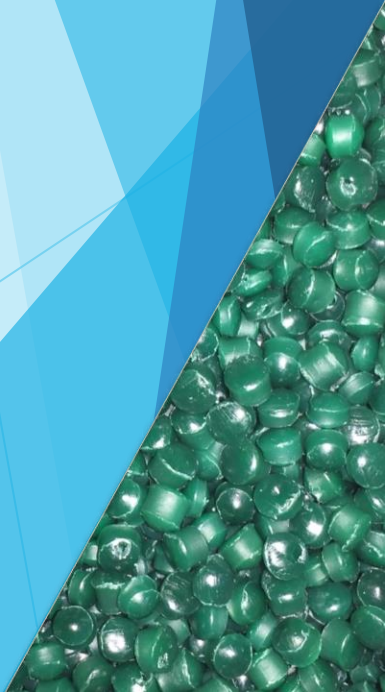
# Timeline

- ▶ 2008 -Shredding machine  
Transporting to Matmortua  
Shredding at Matmortua
- ▶ 2010 -Shredder rebuild, making it mobile
- ▶ 2011 -Launching «Merdekampanjen»  
Campaign with NOFIR  
Complete waste handling solution
- ▶ 2017 -Test production granulate



# The Cage Campaign -Merdekampanjen

- ▶ Containerservice
  - ▶ Cage pipes
  - ▶ Walkways
  - ▶ Feeding pipes
  - ▶ EPS inside pipes
- ▶ NOFIR
  - ▶ Ropes and nets



# The Cage Campaign -Merdekampanjen

- ▶ Containerservice
  - ▶ Cage pipes
  - ▶ Walkways
  - ▶ Feeding pipes
  - ▶ EPS inside pipes
- ▶ NOFIR
  - ▶ Ropes and nets



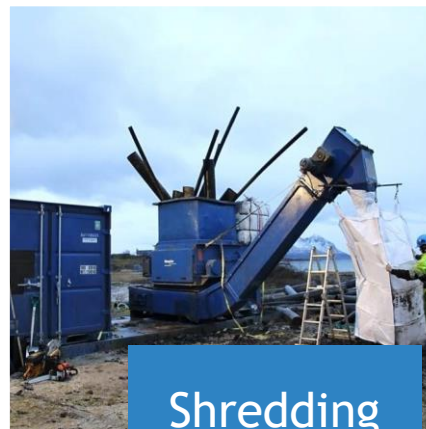
# Process chain



Cages to  
land



Dismantling  
and sorting



Shredding



Transport



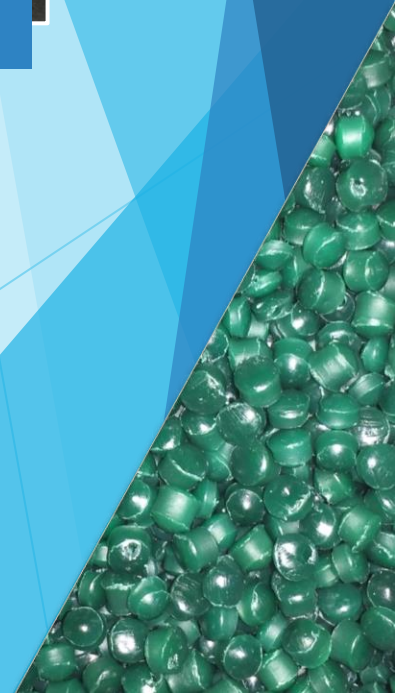
Storage  
Matmortua



Production  
Granules



Sale  
Granules



Shredding locations  
2016-2018

Norge

Sverige

Finland

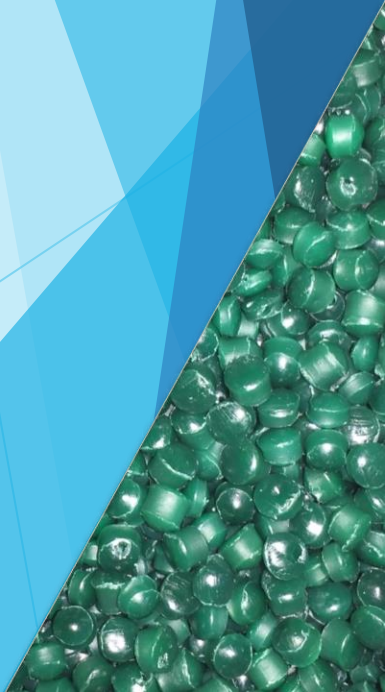
Estland

Bottenvika

Ostersjoen

- ▶ Fish farmers
- ▶ Waste handling facilities

- ▶ Volumes of high quality plastic
- ▶ Efficient transportation
- ▶ Making it a complete service solution
  - ▶ Customer convenience
  - ▶ «Doing the dirty work»



# Challenges in the value chain



Transportation costs  
Keeping it profitable



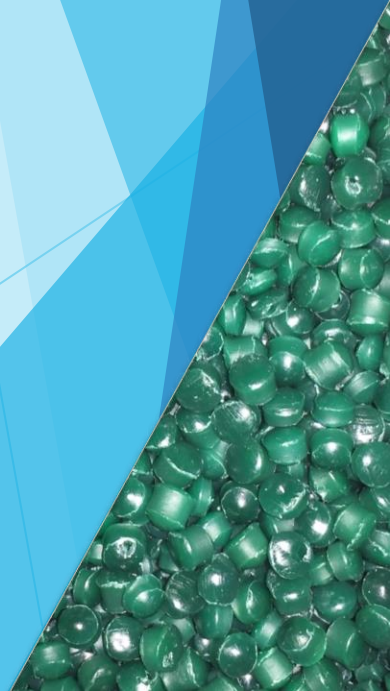
Waste quality control



Managing heavy  
equipment in remote  
locations



Selling granulate without  
guaranteeing specific  
material properties



# Granulate



Underground pipes  
HDPE

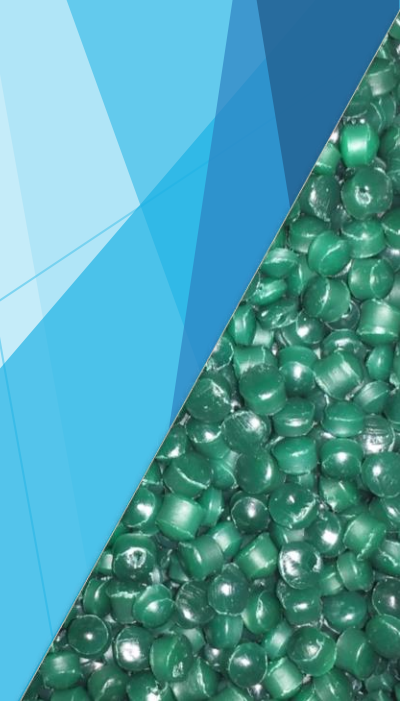
EPS  
PS

IBC-bins  
HDPE

PP big bags  
PP

Ropes  
PP/PE

Fish farming cages  
HDPE



# Customer products

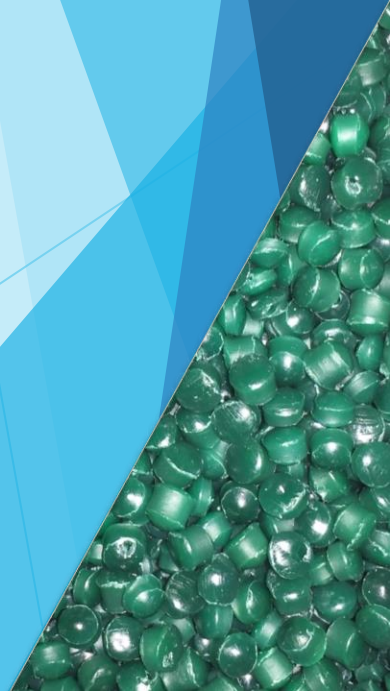
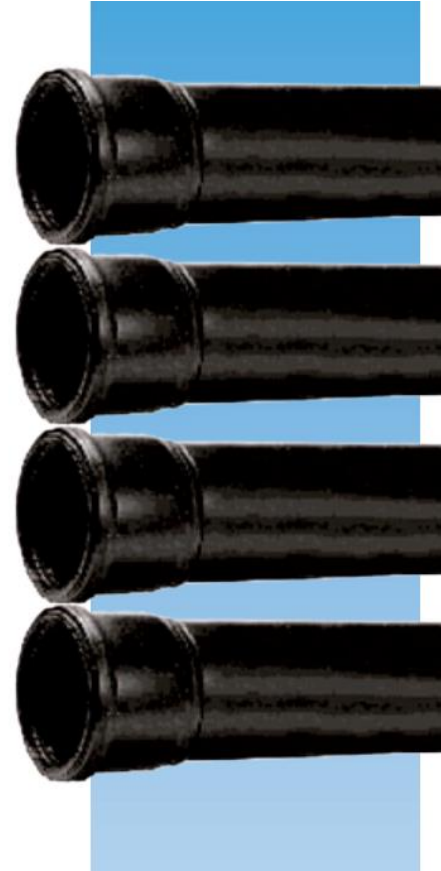
## ▶ HDPE

- ▶ Producing pipes
  - ▶ Drain pipes
  - ▶ Fish farming feeding pipes
  - ▶ Pressure-tested underground pipes



## ▶ PP

- ▶ Cable protection sheets
- ▶ Chairs
- ▶ Frames sunglasses



# Barrier: Waste management regulations

## Regulations for Landfill

- ▶ All waste shall be processed before landfill disposal.

## Exception

- ▶ No socio-economically profitable recycling measures

Landfill disposal of  
plastic waste in Northern Norway  
-Legal due to transportation costs

-It's being treated as garbage, although it is a valuable resource



# We need a change in mindset

Turning from recyclable plastics as  
problem waste

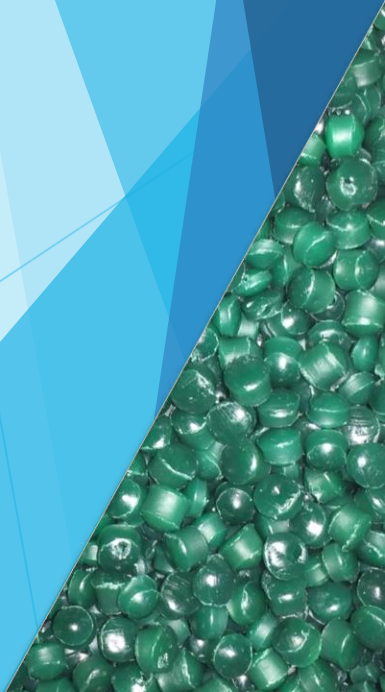


to valuable raw material,  
worth the effort of recycling

Customer not **aware** of  
recycled alternative

Customer  
No demand  
for change

Manufacturer  
No urge  
to change



# We need a change in mindset

Turning from recyclable plastics as  
problem waste



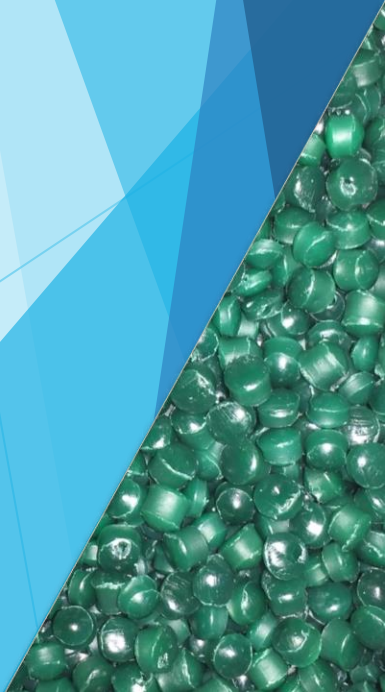
to valuable raw material,  
worth the effort of recycling

Customer **aware** of  
recycled alternative



Customer  
No demand  
for change

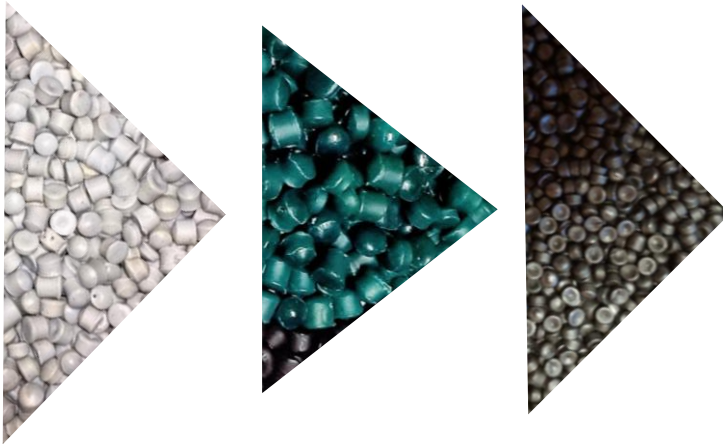
Manufacturer  
No urge  
to change



# Where do we continue?

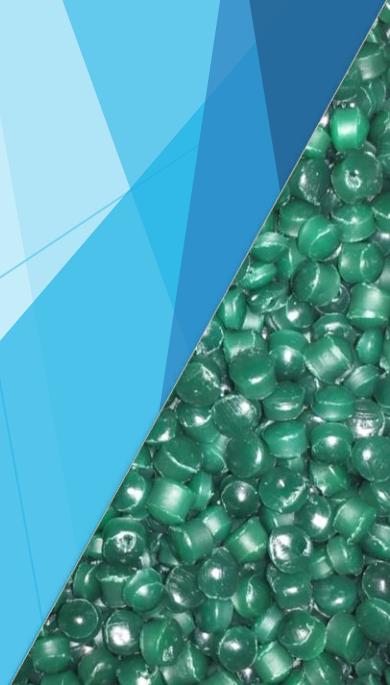
## Fractions

- ▶ HDPE cages and feeding pipes
- ▶ Ropes
- ▶ Non-maritime fractions



## Main goal

- ▶ Closing the loop
  - ▶ Returning granulate to origin manufacturers
- ▶ Continuing delivering service and quality
- ▶ Becoming a competent national cluster in the field of recycling plastics
  - ▶ Our own testing equipment



Thank you for your attention



**NOPREC**  
Norwegian Plastic Recycling