



RESSOURCE CITY
**MEASURES AND PROJECTS IN THE FIELD OF SUSTAINABILITY
AND CIRCULAR ECONOMICS**

Massimo Forti, Ragn-Sells

11.05.2021

COMPANY FACTS

6 409 MSEK
Sales

2 287
Employees

Sweden, Norway, Denmark, Estonia
Markets

96
Sites

6.3 MILLION TONNES
Material treated

Sales: **389 MSEK**
Employees: **110**
Number of sites: **6**



A portrait of Lars Lindén, CEO of Ragn-Sells Group, smiling. He is wearing a light-colored shirt and a brown jacket. The background is a blurred outdoor setting with green trees and a path.

**“RAGN-SELLS WILL BE
CLIMATE POSITIVE IN 2030
THROUGH INNOVATIVE
CIRCULAR SOLUTIONS
THAT BOTH DETOXYFY
AND RECYCLE BACK
CRITICAL RESOURCES
TO SOCIETY”**

LARS LINDÉN, RAGN-SELLS GROUP CEO



GUIDING PRINCIPLES FOR ACHIEVING CIRCULAR SOLUTIONS

When developing sustainable solutions for a circular society these three principles need to be considered.



1881 SELLBERGS HÄSTÅKERI IS
FOUNDED IN STOCKHOLM



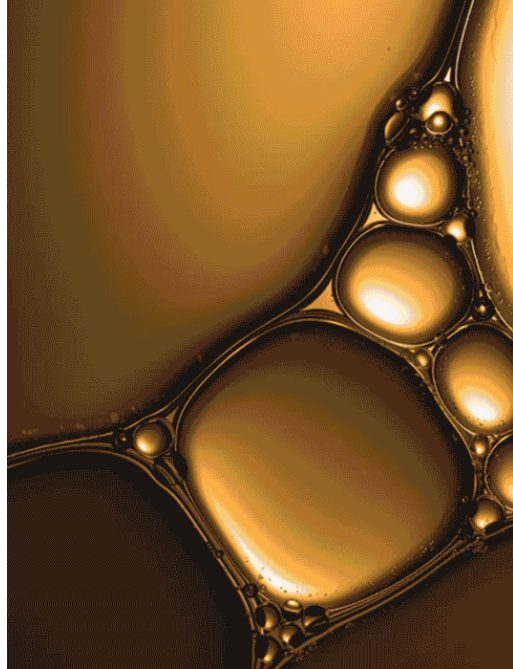
YESTERDAY: LANDFILLS
TODAY: MATERIAL BANKS



**HISTORY IS KEY
TO UNLOCKING
THE FUTURE**



RECYCLING IS IN OUR DNA



RESEARCH & DEVELOPMENT



FUTURE PROOF FLY ASH TREATMENT AT HÖGBYTORP

RAGN-SELLS CREATES SUSTAINABLE FOOD PRODUCTION FOR THE FUTURE

Ragn-Sells contributes to sustainable food production with a closed loop solution of detoxified nutrients that will be able to reduce the risk for several planetary boundaries.

INNOVATIVE
TECHNOLOGY
FOR A SUSTAINABLE
FUTURE

ragnsells.com

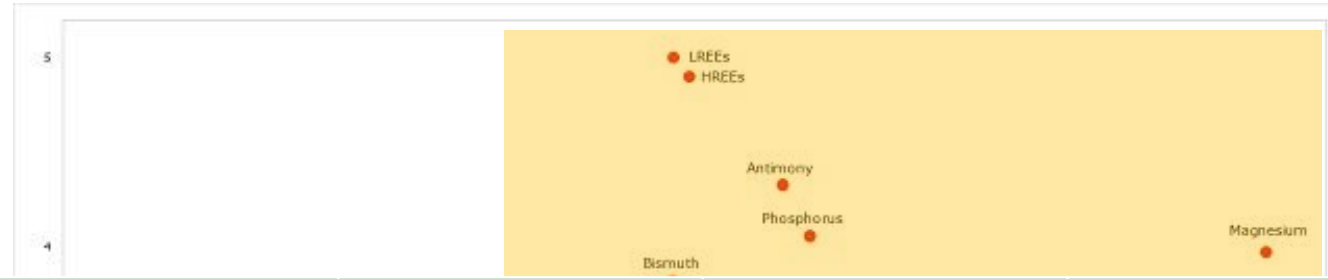
ASH2[®]PHOS

ASH2[®]SALT

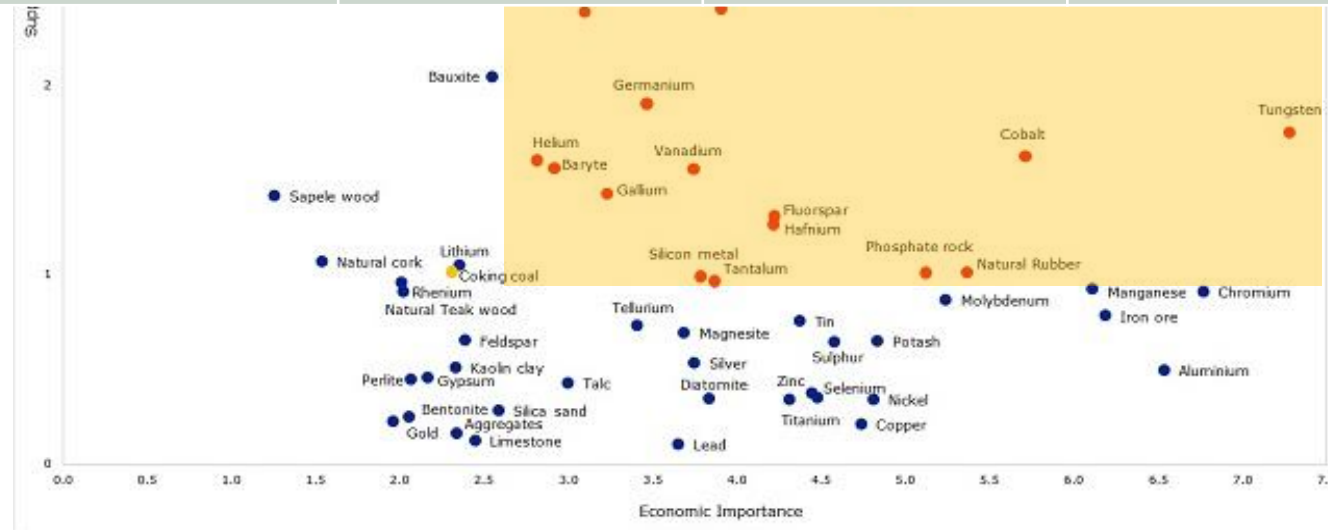
PROJECT NITROGEN

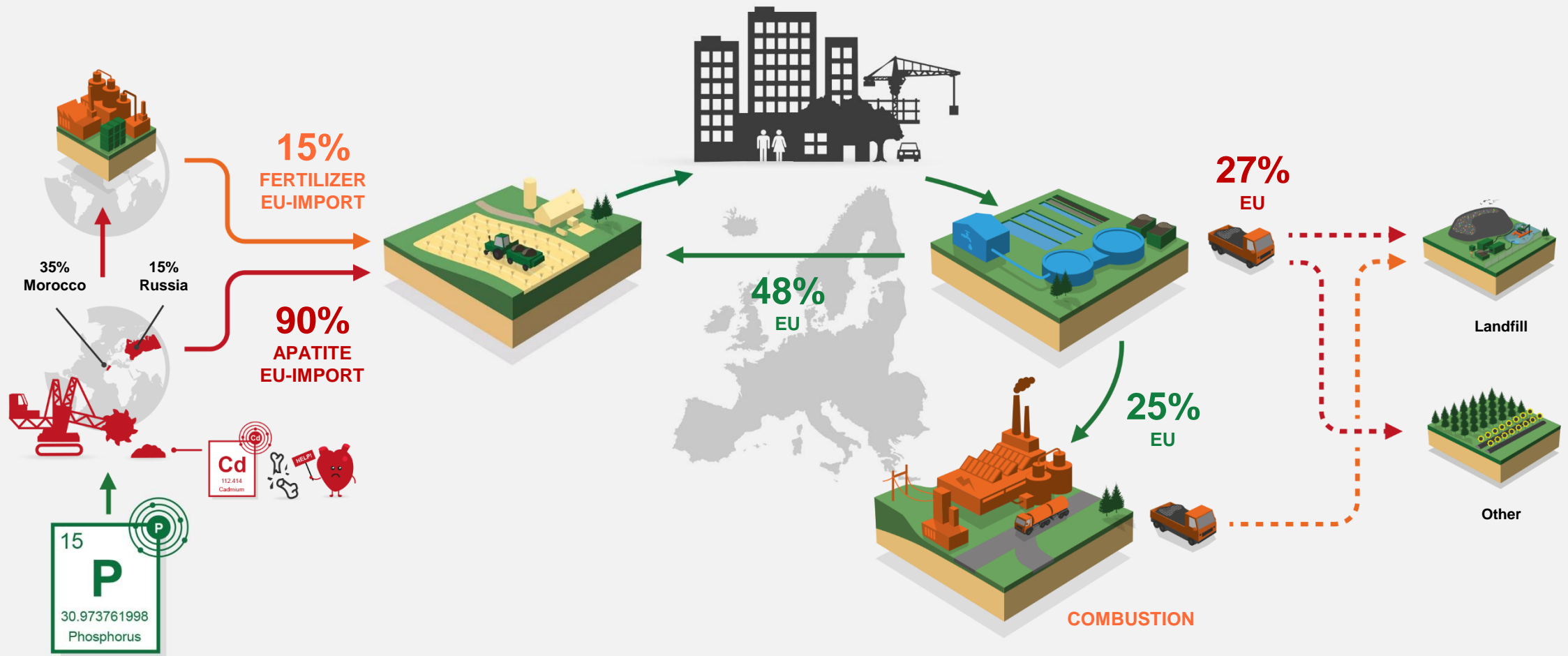
RAGN  SELLS

INCREASED SHORTAGE OF RESOURCES



Year	2011	2014	2017	2020
No of CRM:s (CRM = Critical Raw Materials as identified by EU)	14	20	27	30!

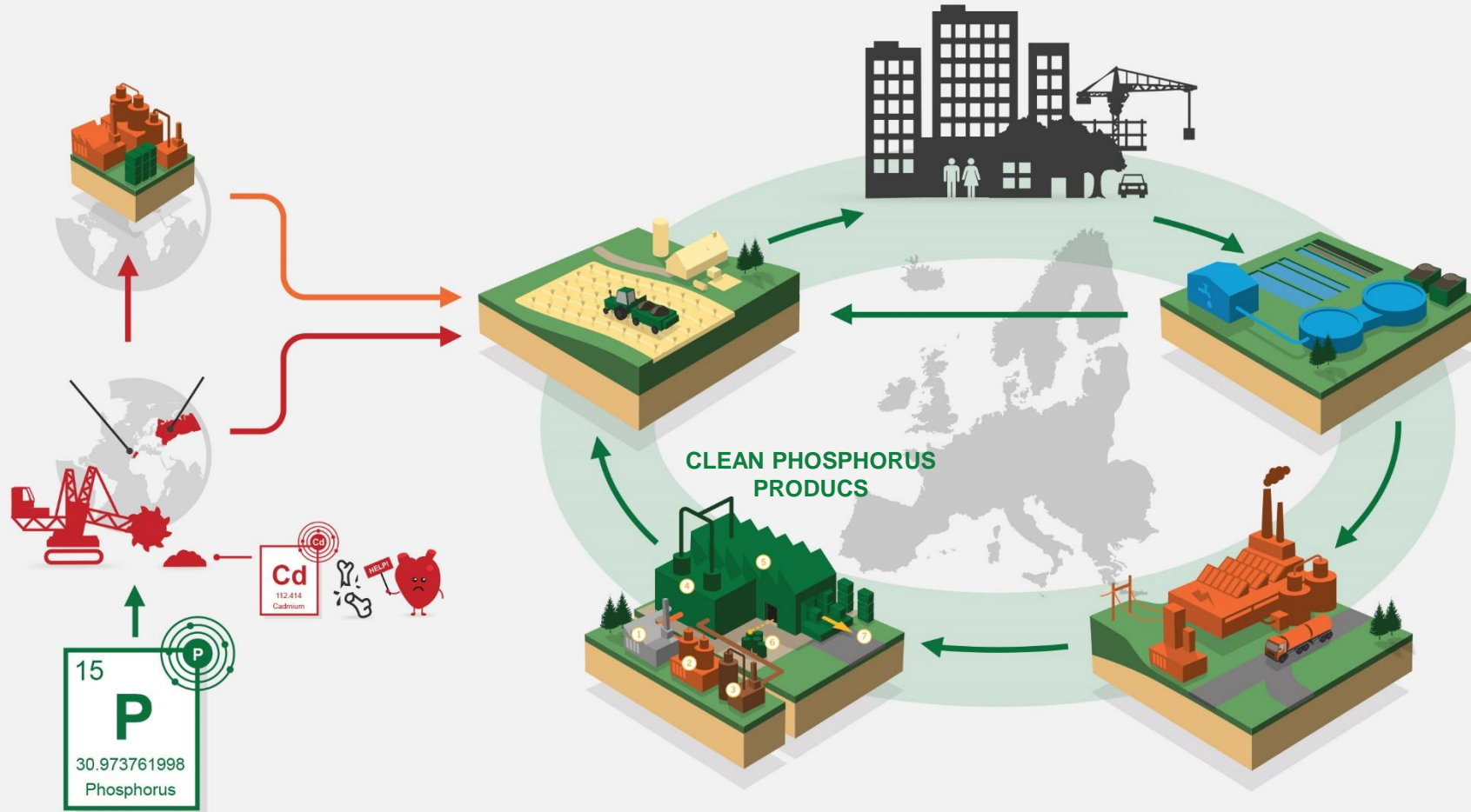




PHOSPHORUS / FERTILIZER USE IN EUROPE

Background / Current solution in Europe:
Phosphorus recovery from sludge ash.

OUR AMBITIONS





ASH2PHOS – PRODUCTS FROM THE PROCESS

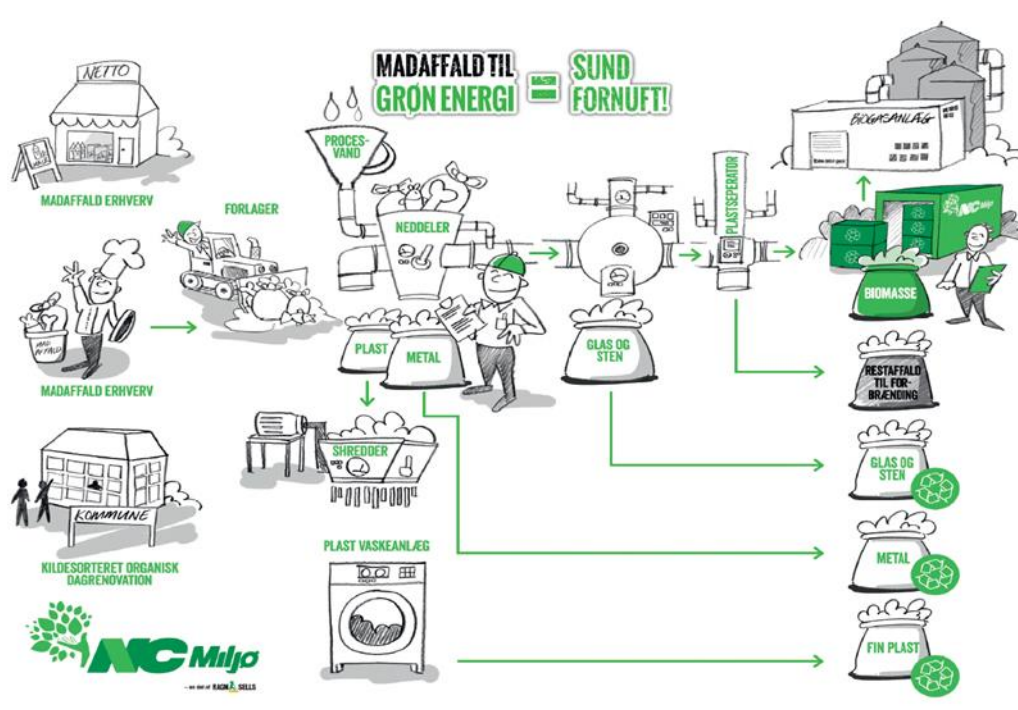
Ash2Phos results in clean, well known products where the input chemicals become part of the final product. Products are effective in their applications.

Products from the process >95% can be used

- Phosphorus
 - Precipitated Calcium Phosphate (PCP)
 - Converted PCP: MAP, SSP, DCP, MCP
- Precipitation chemicals
 - Iron Chloride
 - Aluminium product
- Silica sand
- Heavy metal

FAIR PLASTIC™

Pioneering washing technology enables the sorted plastic from organic waste to be reused as a raw material.



ÄLSKADE STAD/ELSKEDE BY

Cross industry cooperation for a more sustainable city.

- Less emissions
- Less noise
- Less traffic
- Together
- Improved atmosphere





TAKE HOME MESSAGES

For chemical recycling:

- Legislation for use of nutrients in fertilisers and feed need to focus on quality and not origin to open up the market for reused products.
 - Conventional farming still has legal barriers.
 - Organic farming is against chemical recycling in general, and don't focus on climate
 - Feed legislation need to focus on quality

For mechanical recycling:

- We all want to sort waste, but we forget to buy sustainable
- Price for recycling of plastic is more fixed compared to the volatile prices of oil

RAGN  **SELLS**