



Solution Architect for Global  
Bioeconomy & Cleantech Opportunities



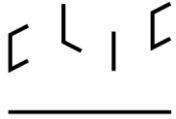
**arvi**  
Material Value Chains

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Porvoo

# ARVI - connecting with Finnish project partners – learning from the research done – looking at future implementation opportunities.

ARVI - verkostoitumista Suomessa – tärkeä tuki Borealixsen kestäväen kehityksen strategian toteuttamisessa paikallisesti.



# Borealis Polymers Oy

Production facilities are situated in Kilpilahti Industrial Area in Porvoo

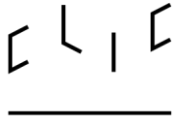
Borealis Polymers Oy is part of Austrian based Borealis Group.

In Porvoo Borealis produces

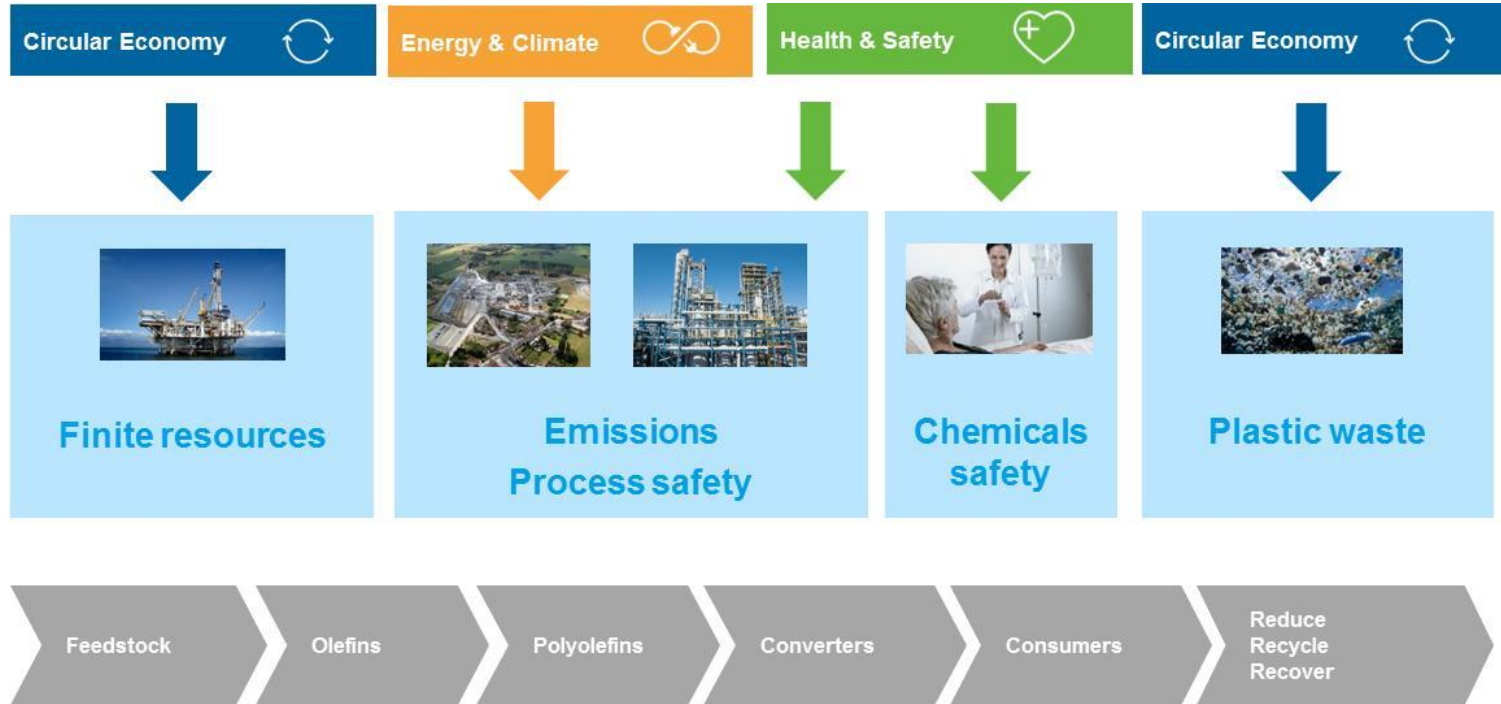
- Petrochemicals  
(ethylene, propylene, butadiene, phenol and acetone)
- Polyolefins  
(polyethylene and polypropylene)
- Compounds  
(polyethylene and polypropylene compounds)

About 70% of the annual polyolefins production is exported.

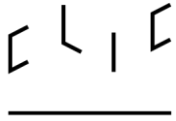




# Despite its great benefits, plastics and chemicals are often criticized. Our strategy responds to these concerns



**If we can't do it safely, we don't do it at all**



# Key drivers in the polyolefin market during the next decades

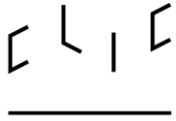
Innovation has always been the response to societal needs. Sustainability will create new markets, ultimately creating value for society.



Regulation	REACH, national legislations
Sustainability	Resource and energy efficiency, recycling
Ecological footprint	Reduced CO <sub>2</sub> emissions, waste management, marine littering
Purity	Environmental impact and consumer protection
Eco-design	Innovative materials to meet sustainability challenges

**“A company that does not add value to Society does not earn the right to exist”**

*Mark Garrett, CEO of Borealis*



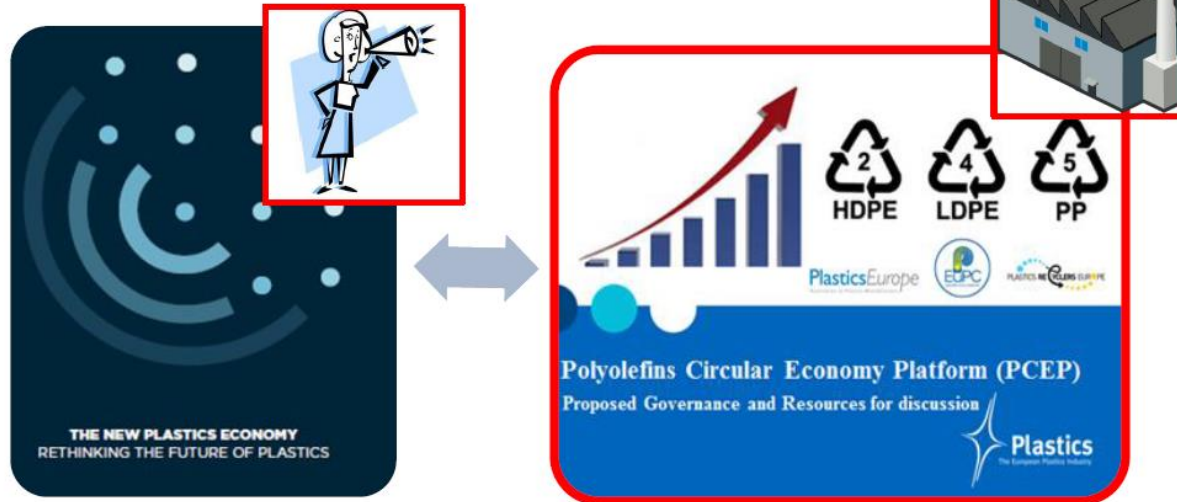
# Borealis strengthening focus on sustainability: resource efficiency and circular economy

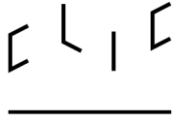
## Way forward

- Join Ellen MacArthur Foundation
- Support EU Commission in the development of the “Strategy on Plastics”



Create a PCEP a “coalition of the willing” to make it happen.





# Connecting and Learning in ARVI Plastics Theme

## Tasks

Possibilities to improve properties of plastic and rubber waste flows.

Plastics waste recycling via thermal conversion

Identification and management of health and environmental risks in plastics recycling

Mapping plastics and plastics waste flows in Finland

## Key Learnings

Compatibilisers and suitable matrix materials improve the quality of recyclates. End uses matching the properties of recyclates were identified.

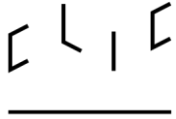
Pyrolysis was successfully tested. Liquid product composition depends on feed quality and process conditions.

Effective sorting mitigates product safety risks as well as improves the quality and purity of recyclates

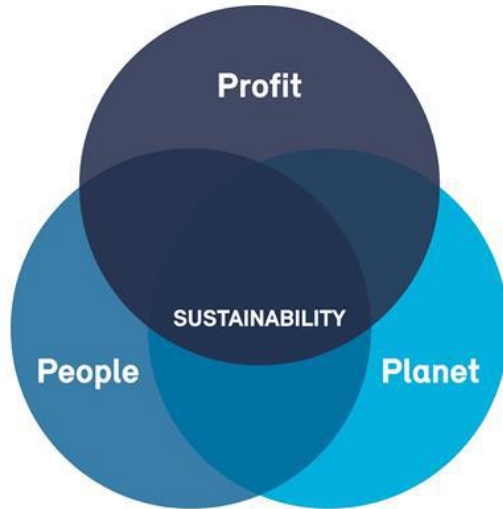
Majority of sorted household plastics waste consists of monomaterials







## ”Think Global – Act Local”



ARVI program has given valuable information and contacts supporting local implementation of Borealis Sustainability Strategy.

Continued co-operation on national level between all stakeholders is a key to achieve concrete profitable business of circular economy in Finland.