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# The Chemical Strategy for Sustainability: BASF Perspective

Dr. Boris Gaspar
Dr. Paul-M. Bever

# BASF: Our corporate purpose
## We create chemistry for a sustainable future

- **We are focused on value chains**: Our customers are our number one priority and are at the heart of our strategy.

- **Our core business is the production and processing of chemicals**. Our strength here lies – both now and in the future – in the Verbund and its integrated value chains.

# Verbund Site Ludwigshafen: saving energy and ressources

## The largest coherent chemical site in the world, owned by only one company.

**34,405**
Employees
BASF SE

**~2,000**
Buildings

**~200**
Production facilities

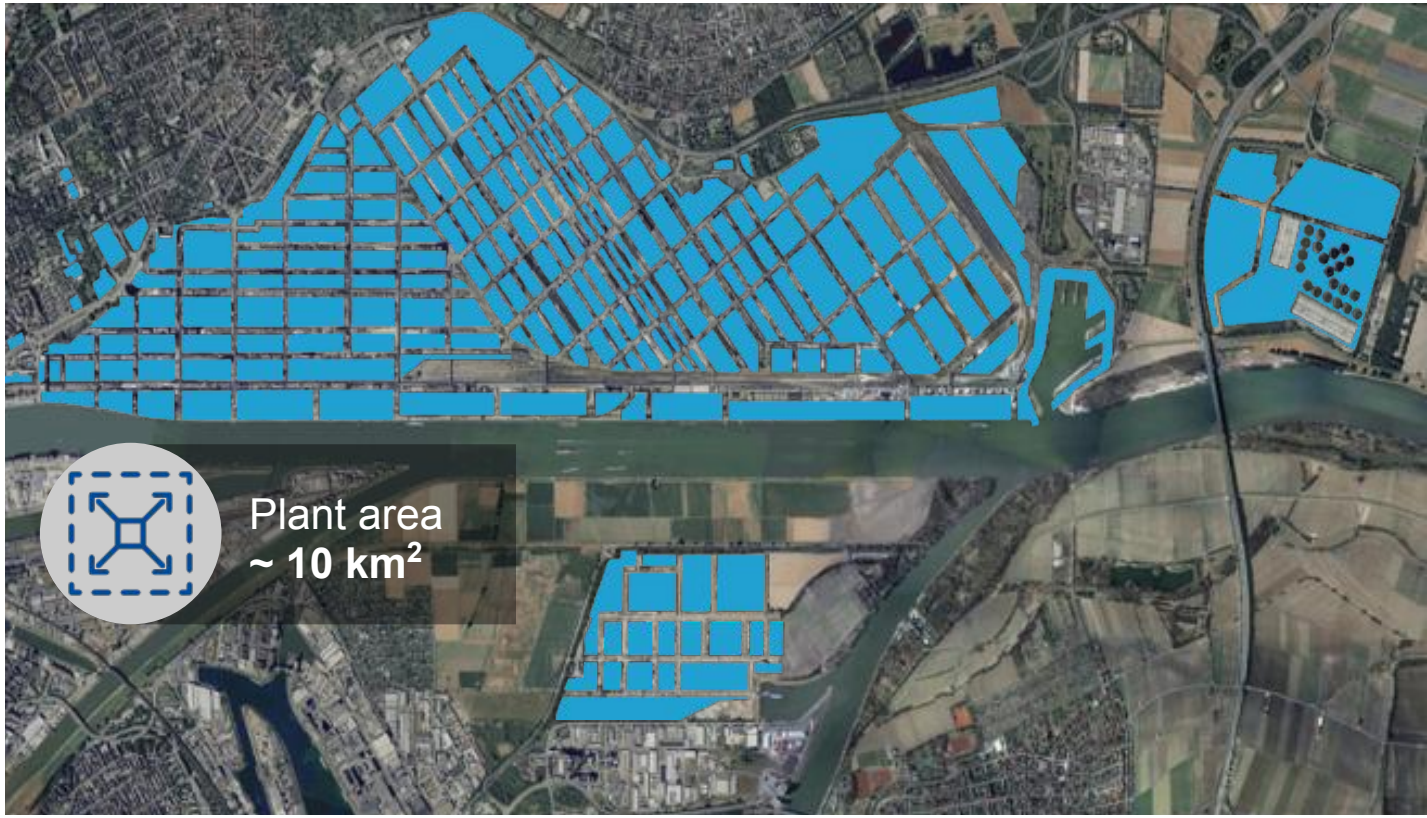
**Moreover thousand**
Products are made at the Site

**~ 230 km**
Rails

**~ 106 km**
Street

**~ 2,850 km**
Pipes

**8.1 Mill. t**
Readymade products per year






| As of 2021-12-31



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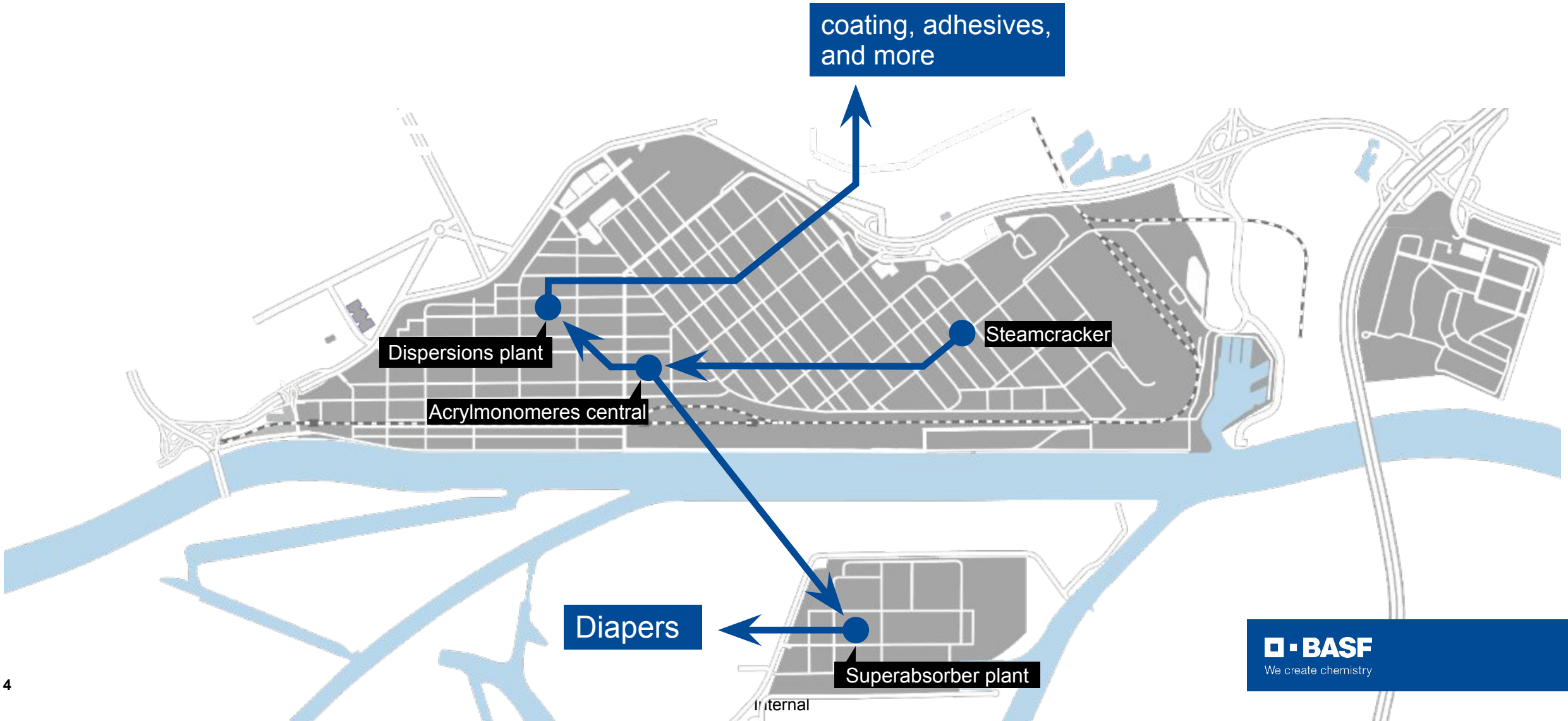
# Verbund Ludwigshafen Site: Value Chain - inside

## Example: Acrylic Acid





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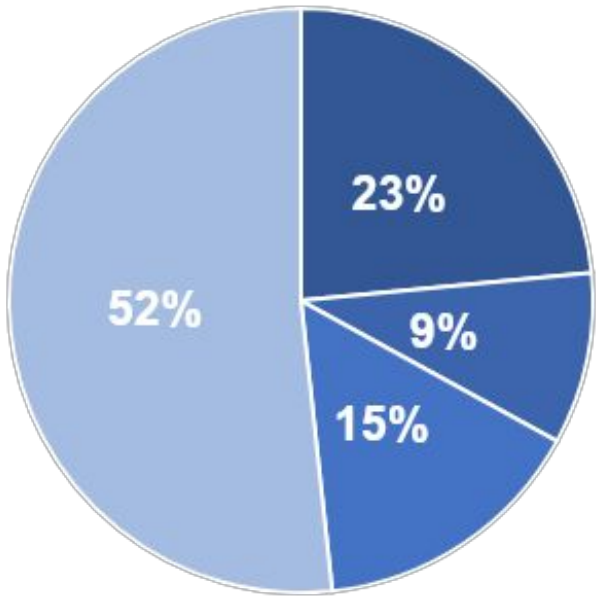
# Supply Crisis Natural Gas (NG): Vulnerability of the Value Chain




BASF Ludwigshafen as major NG consumer

- Use: energy:raw-material for basic chemicals = 50%:50%
- Limitations for basic chemicals affect the whole chemical value chain
- NG Supply < 50 % Verbund at risk

R&D ongoing, but requires time

- Hydrogen from methane-pyrolysis
- Electric heating for steam cracker
- Heat-pumps for steam generation

**Transformation needs Preparation - Preparation needs Time**

Economic impact assessed in Cefic IA, Phase 1

# CSS Objective #1: Establishing a toxic-free environment

**Implement a Generic Approach to Risk Management for consumer products**

- Hazard-based approach, no exposure consideration

**Introduce Essential Use concept**

- Regulators decide on essential uses

**Apply same level of protection to professional users as granted to consumers**

- Disregard measures to manage occupational safety

**Extend criteria for substances of very high concern; use of grouping**

- More substances to be restricted / banned

**Restrict SVHCs in industrial production, set stricter OELs**

- Competitive disadvantage for EU production

**Prevent export of banned chemicals**

- Effects beyond European business

OEL: Occupational Exposure Limit

**If implemented as suggested, the EU chemical market will be significantly impacted**

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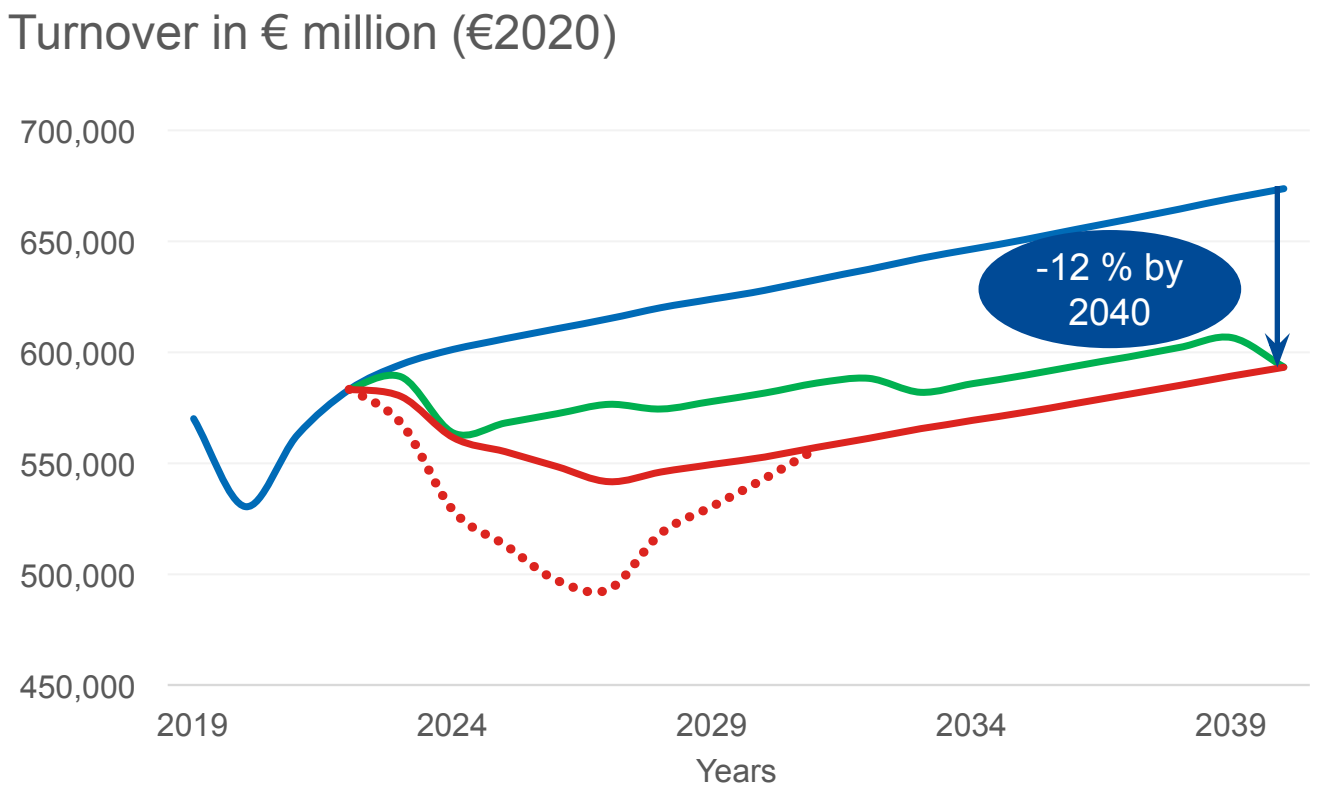
# Chemical Strategy for Sustainability: Cefic Assessment of the Economic Impact

- Broad data base: > 100 companies (84 large vs 17 SME), corresponding to 67 % of chemicals output
- Trusted methodology: consultant Ricardo; alignment with Better Regulation Guidelines
- 2 Phases:
  1. New hazard classes in CLP, extension generic approach to risk management under REACH
  2. Polymer registration, PFAS, export ban, low tonnage substances (in 2022)
- Long term impact until 2040 considered
- 3 scenarios for different transition times

# Result: 1. Impact depends on Industry Ability to Adjust

Source: Economic Analysis of the Impacts of the Chemicals Strategy for Sustainability Phase 1 Report

# Result: 2. Time Matters

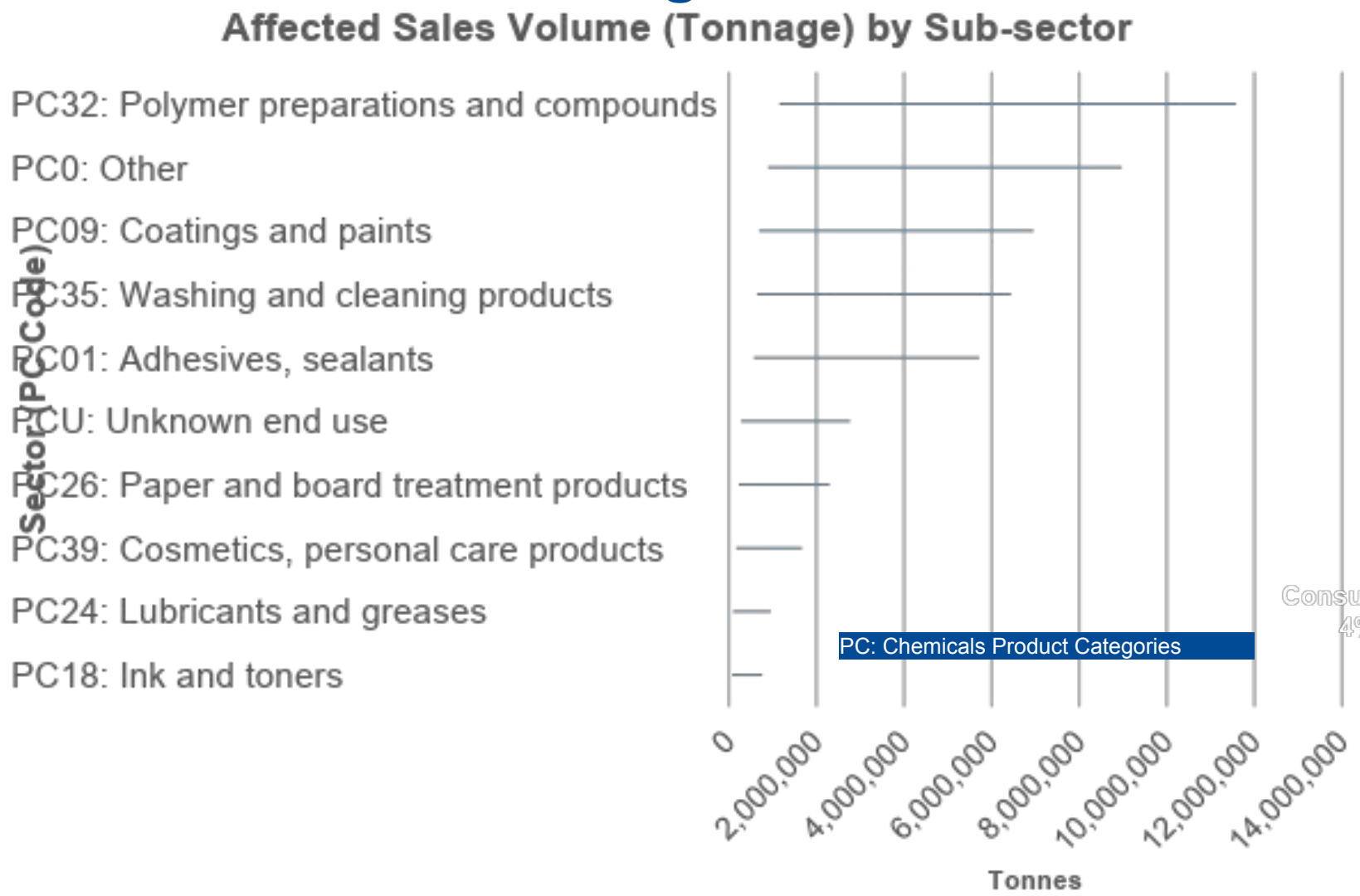


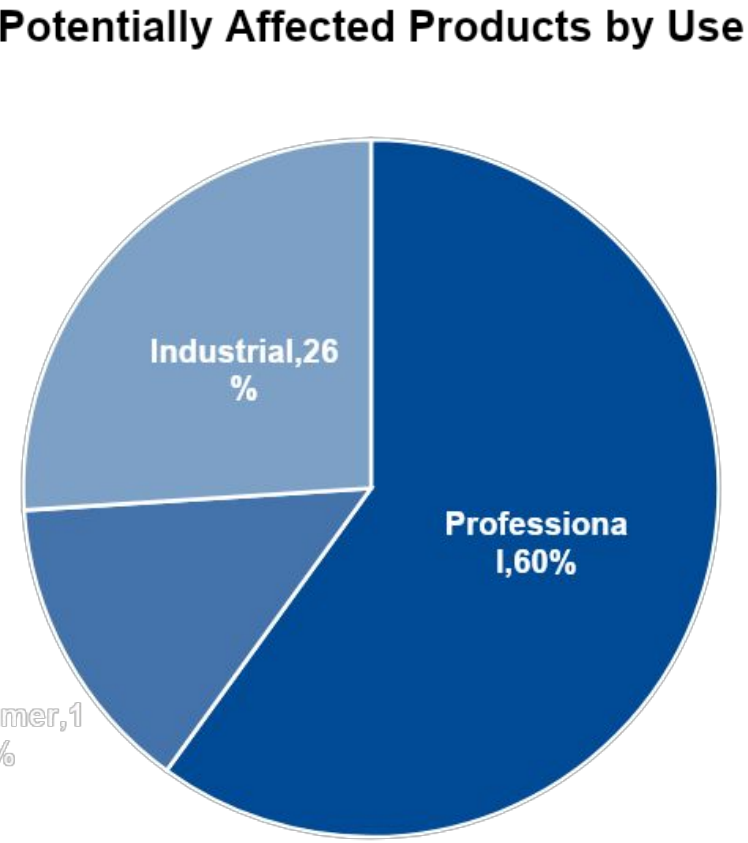

**Scenarios:**

1. Business as usual (base-line)
2. Stepwise policy implementation
3. Faster policy implementation
4. Faster policy implementation, delayed substitution.

Source: Economic Analysis of the Impacts of the Chemicals Strategy for Sustainability Phase 1 Report

# Result: 3. Impact beyond Chemical Producers – The Shrinking Tool-Box




Source: Economic Analysis of the Impacts of the Chemicals Strategy for Sustainability Phase 1 Report

# The Way Forward: Transition Pathway

MEETINGS

**Industry Days**

**9 February**
First discussion at EU Industry Days

**16 February**
Kick-off Meeting

**15 March**
2nd Meeting with Stakeholders

**25 April**
3rd Meeting with Stakeholders

DOCUMENTS

**8 March**
First outline of the Transition Pathway sent to Stakeholders

**22 March**
Deadline for comments

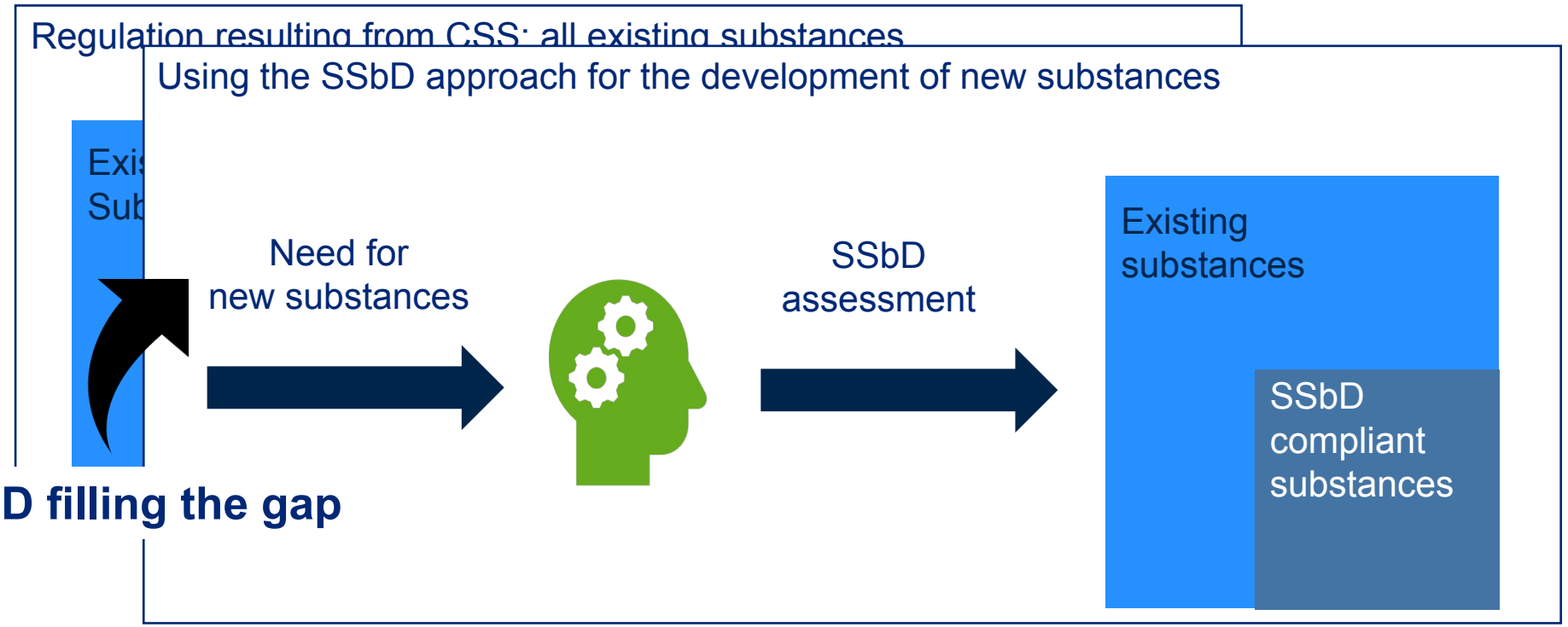
**7 April**
1st Draft Transition Pathway

**29 April**
**Final Draft** transition Pathway for Chemicals

**Followed by Commission Interservice Consultation in June**

European Commission

# Objective #2: Safe and sustainable by Design (SSbD) chemicals as EU market norm and global standard

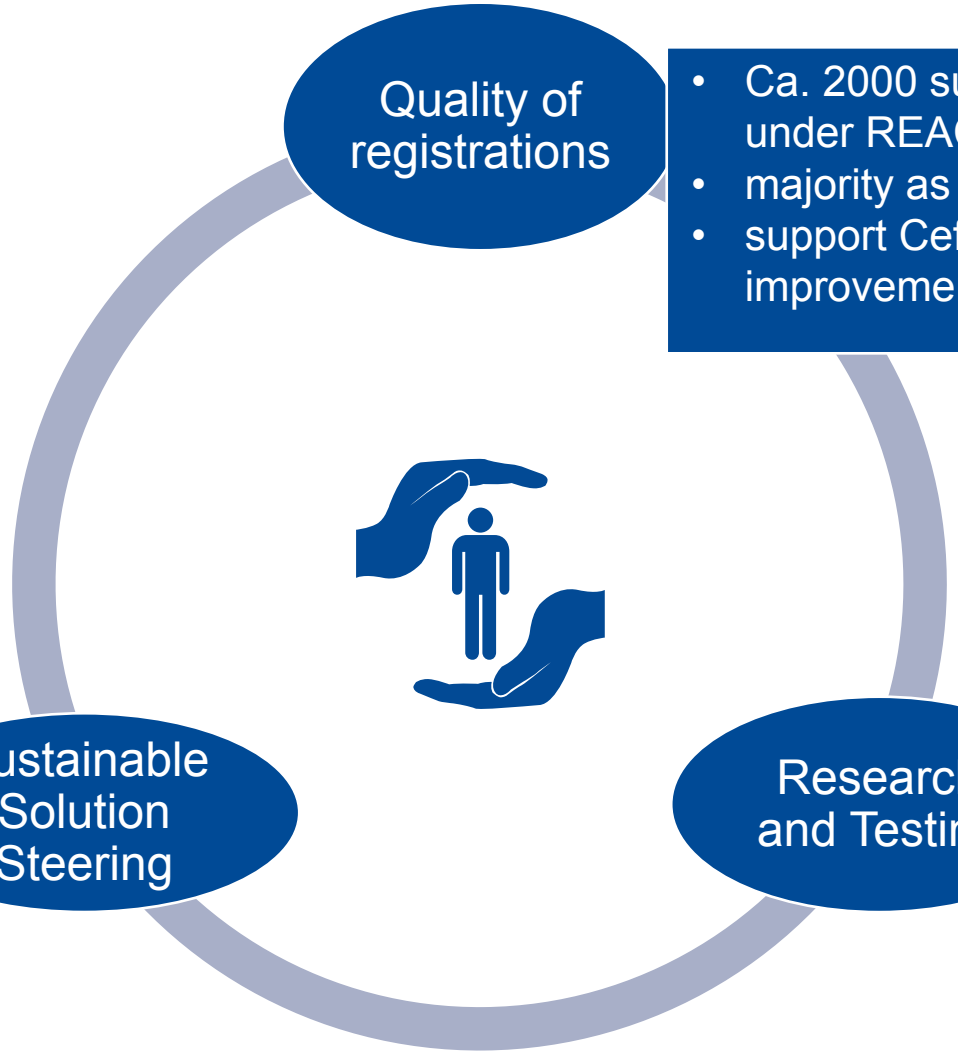



**SSbD filling the gap**

What it takes to make progress:

- Realistic, risk based criteria
- Predictability and reliability of regulation
- Funding, e.g., through Horizon Europe and LIFE program

# Our contribution to a future-proof chemical industry




- Ca. 2000 substances registered under REACH
- majority as lead registrant
- support Cefic's dossier improvement project

- testing of chemicals
- development of non-animal testing methods
- human biomonitoring

- focus portfolio on sustainable solutions
- phase out of challenged solutions
- consider performance over the entire life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