

SC Sviluppo chimica

Cost-benefit analysis of "in silico tools" platform implementation - an Industry perspective

October 27th, 2021

Online workshop: Ongoing project to make network of non-testing methods for exploring the properties of chemical substances



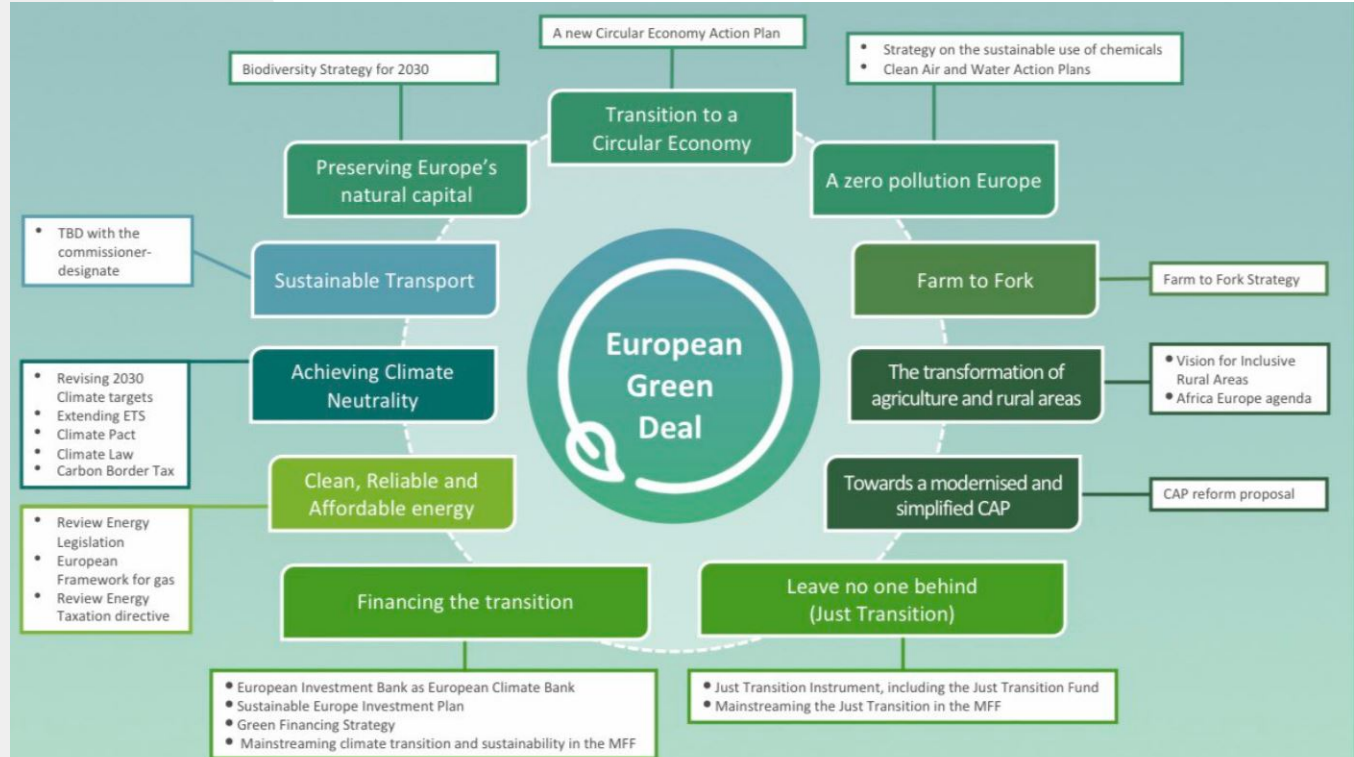
Paolo Manes

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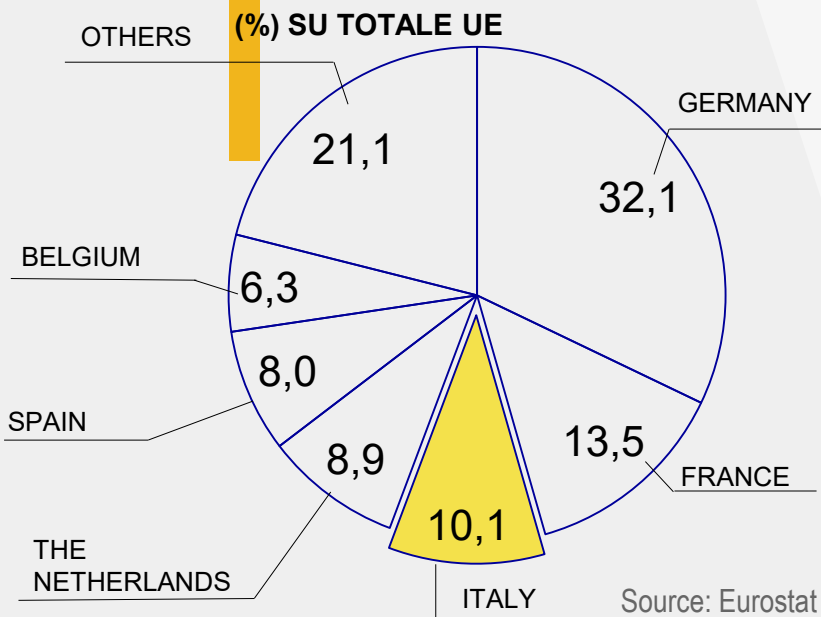


Sviluppo chimica spa

European Green Deal and further recent legislative push



Dimension of the EU Chemical Industry



Mn Euro

EU28

Petrochemicals and Derivatives	143.568
Inorganic Industrial Chemicals	77.629
<i>Fertilizers</i>	24.065
<i>Industrial Gases</i>	11.644
<i>Other inorganics</i>	41.920
Specialty Chemicals	153.394
<i>Paints & Inks</i>	42.860
<i>Dyes & Pigments</i>	16.918
<i>Auxiliaries for Industry</i>	82.337
<i>Crop Protection</i>	11.279
Polymers	120.330
<i>Plastics & Synthetic rubber</i>	109.031
<i>Man-Made Fibres</i>	11.299
TOTAL	494.922
Pharmaceuticals	313.236
Personal Care Products	69.957

Source: CEFIC 2020 data

Italian Federation of Chemical Industries



AGROFARMA
ECPA

ASCHIMFARMA
EFCG
APIC

CERAMICOLOR
EUROCOLOUR

AIA
FEA

ASSOBASE
APPE ESA
EUROCHLOR

ASSOGASLIQUIDI
AEGPL

AISA
IFAH-EUROPE

ASSOBIOTEC
EUROPABIO

ASSOGASTECNICI
EIGA

AISPEC
CESIO
EFFA
EFFCI
EU SFI
EUROPALUB
FEPA
IFRA
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UEIL

ASSOCASA
AISE

PLASTICSEUROPE
ITALIA
PLASTICSEUROPE

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FERTILIZER EUROPE

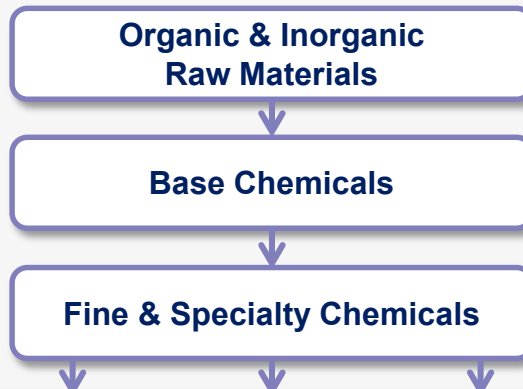
AVISIA
CEPE/EuPIA
FEICA

ASSOSALUTE
AESGP

ASSOFIBRE
CIRFS ITALIA
CIRFS

COSMETICA ITALIA
COSMETICSEUROPE

Chemistry and Sustainability: a central role for the Supply Chain



Flows:

- Intermediate goods
- Research & Development & Innovation
- Competitiveness
- Sustainability



Chemistry and Sustainability: some examples



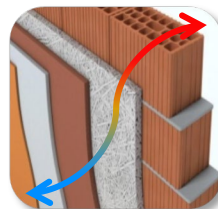
Bio-based products

- Biodegradable and compostable shoppers
- Mulching film
- High performance bio-lubricants for environmental sensitive applications
- Biofuels from non-edible second generation biomass



Food packaging

- New packaging solutions with improved barrier properties, capable of increasing the shelf life of the food and reducing its waste (e.g. parmigiano reggiano pack)



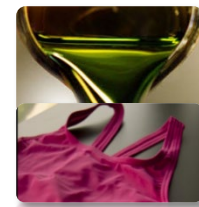
Thermal isolation

- Development of increasingly high-performance materials to improve the energy efficiency of buildings



"Green" tires

- Innovative elastomers with improved performance, able to minimize fuel consumption
- Possible use of "bio" additives



Regenerated and recycled products

- Nylon regenerated from post-consumer and production waste
- Regenerated exhausted mineral oils
- Chemical additives for the recovery of "returned" concrete
- Plastics recovery and recycling

IST implementation: expected benefits for the Business

Benefits for the Business

- reduced R&D costs (all market actors have better hazard, risk and use information, while the decision basis for R&D becomes complete – provided the IST estimates prove reliable – and long-term planning easier)
- reduced Compliance costs for manufacturers and importers (“red tape”)
- reduced liability claims and prevention of business risks
- increased competitiveness of EU manufacturing industries (IST as a fast tool platform allowing for efficient and cheap screening, identification and substitution of dangerous chemicals in order to prioritize safer ones etc.etc.)

IST implementation: expected benefits for Human Health

Benefits for Human Health

- public health (consumers)
- occupational health (avoidance or reduction of diseases caused by occupational exposure to chemicals: reduced costs to cure workers' ill-being by the general public - medical care; improved quality of life for the individual worker; reduced operating costs for the employer, often associated to increased working days, as well as improved Risk Management Measures-RMMs)

IST implementation: expected benefits for the Environment

Environmental Benefits

- less environmental damage as well as less (public) spending for its compensation (remediation costs)
- risk reduction for dangerous chemicals (reduced exposure)
- less costs from penalties related to environmental emissions
- reduced consumption of chemicals, solvents and other lab material and resources necessary for “in vivo” and “in vitro” R&D studies

R&D intensity within a specific manufacturing sector: Cosmetics

R&D investments by Cosmetic sector in Italy (2019 data)

Even if the sector have been experiencing investments' reductions, innovation costs expended by cosmetic companies topped 700 million € in 2020 (about 5,8% of total turnover, which is totalling about 12 billion €).

	R&D intensity (%) on Turnover 2019
R&D realized within the Company (<i>intra-muros</i>) (including Personnel costs)	2,5%
R&D commissioned to external organizations (<i>extra-muros</i>)	0,4%
<hr/>	
Purchase of equipment, machinery, software and buildings necessary to support innovation	1,2%
Marketing expenses for the launch of newly developed products	0,8%
Training expenses targeting technology and innovation capabilities	0,3%
Knowledge purchase: know-how, licences, efforts protected by Authors' rights, patented innovations and unprotected ones	0,2%
Technical and esthetical design for new products and services	0,1%
<i>Other ancillary activities necessary and preliminary for realization of innovations</i>	0,3%
Average intensity of innovation expenses on Cosmetic sector's turnover	5,8%

THANKS

Does anyone have any questions?

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