

SPIRE PPP
- Sustainable Process Industries
through Resource & Energy
Efficiency -

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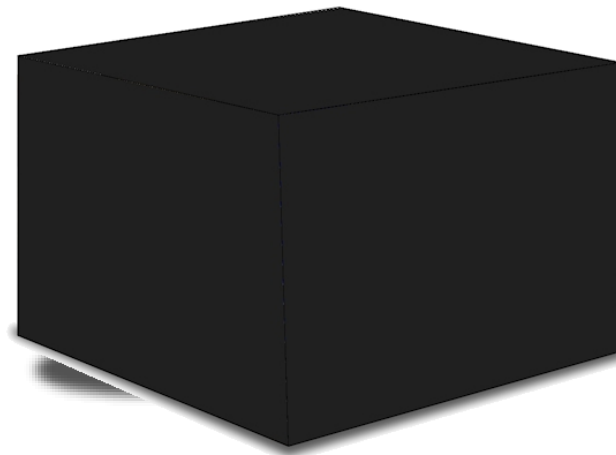
What was missing?

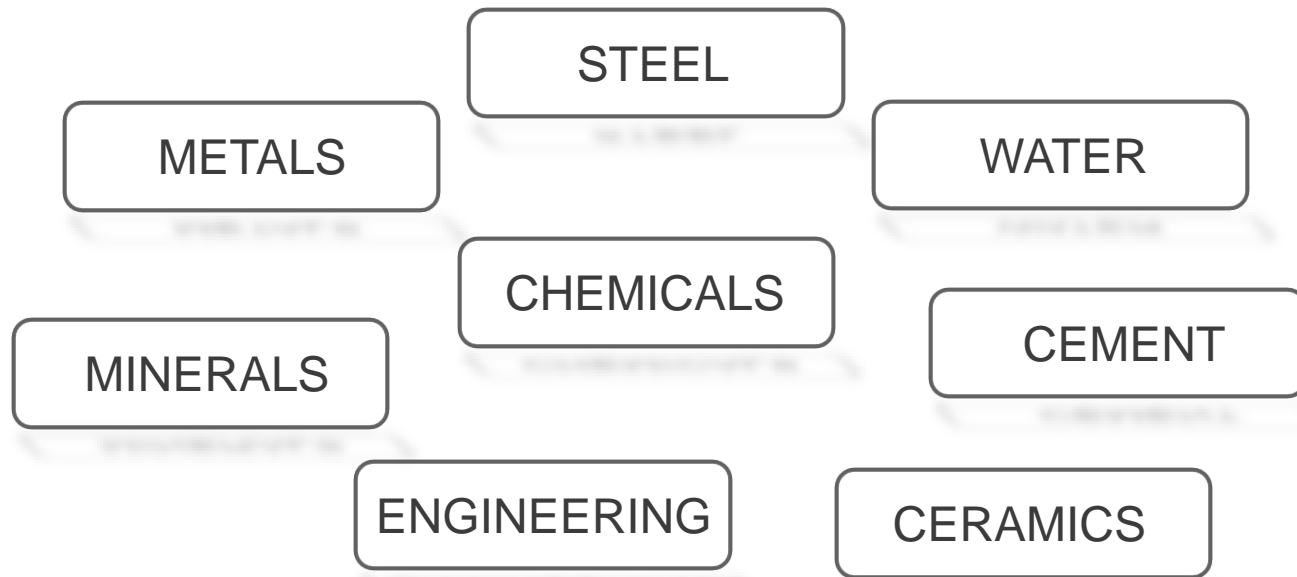


Black box?

BASIC RESOURCES

OUR LIVES





Challenges



LESS RESOURCES



MORE NEEDS



The value chain

Raw Materials



Process Industry:

Chemical, biochemical, and physical transformation and formulation of raw materials using continuous and batch processes into **Materials with new properties and functionalities**

Discrete Manufacturing:



RESOURCE

INNOVATION

ENERGY

for

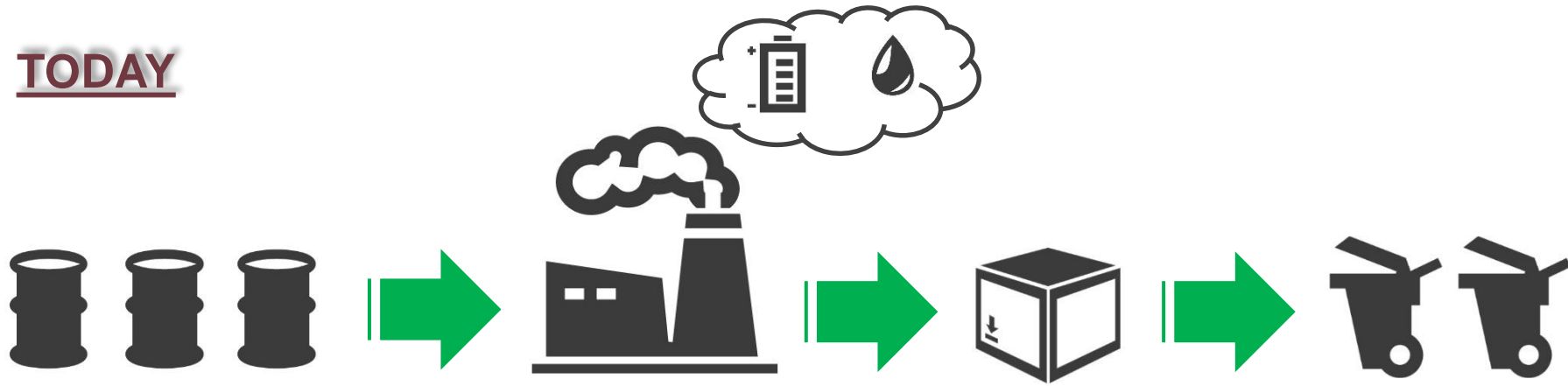
EFFICIENCY

SPRE



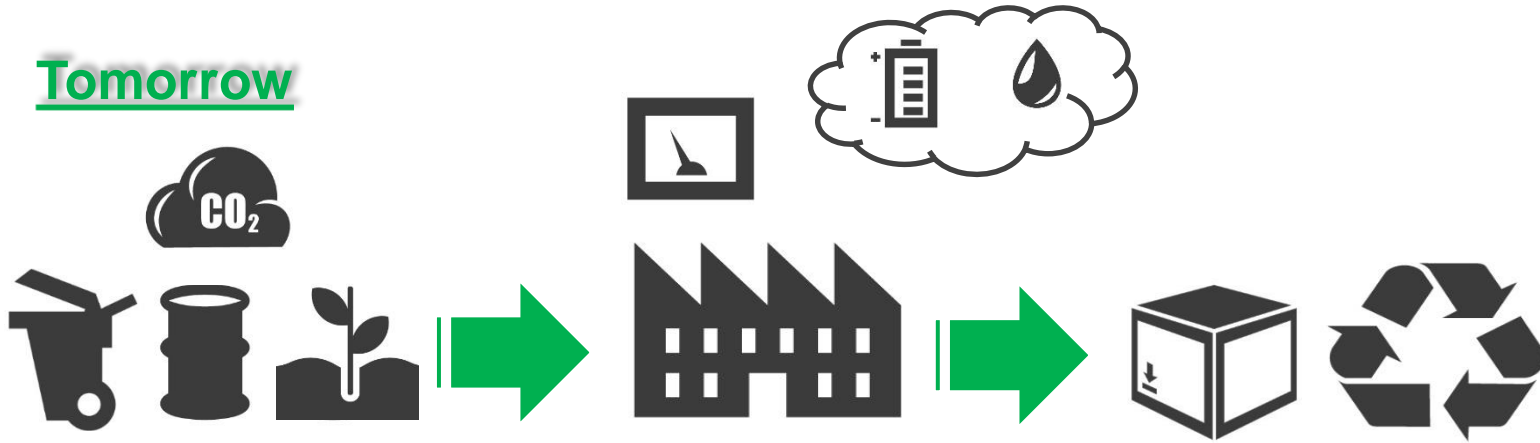
PROCESS INDUSTRY

TODAY



PROCESS INDUSTRY

Tomorrow



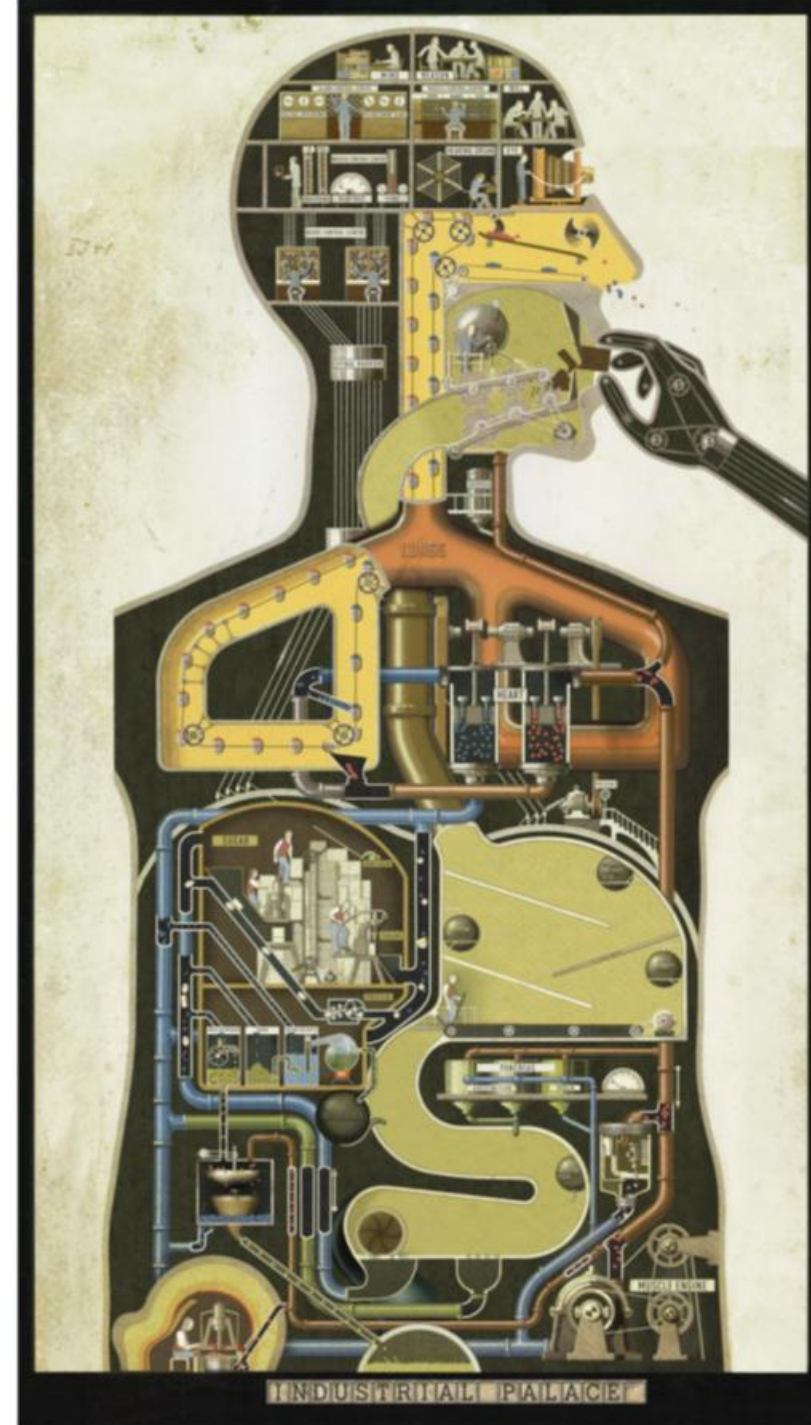
Rejuvenate & invest in industrial processes

- **(Re)invent** feedstock (waste, bio, new)
- **(Re)invent** energy & resource mngt. concepts, incl. industrial symbiosis
- **(Re)invent** more efficient, digital equipment (process control)
- **(Re)invent** devices for better monitoring, control & optimisation
- **(Re)invent** materials & products with a significantly increased impact on resource & energy efficiency down the value chain: transport, housing
- **(Re)invent** technologies for valorisation of waste streams within and across sectors

The industrial palace

- Feed/raw materials
- Process
- Application/materials
- Waste

Energy, control,
environment





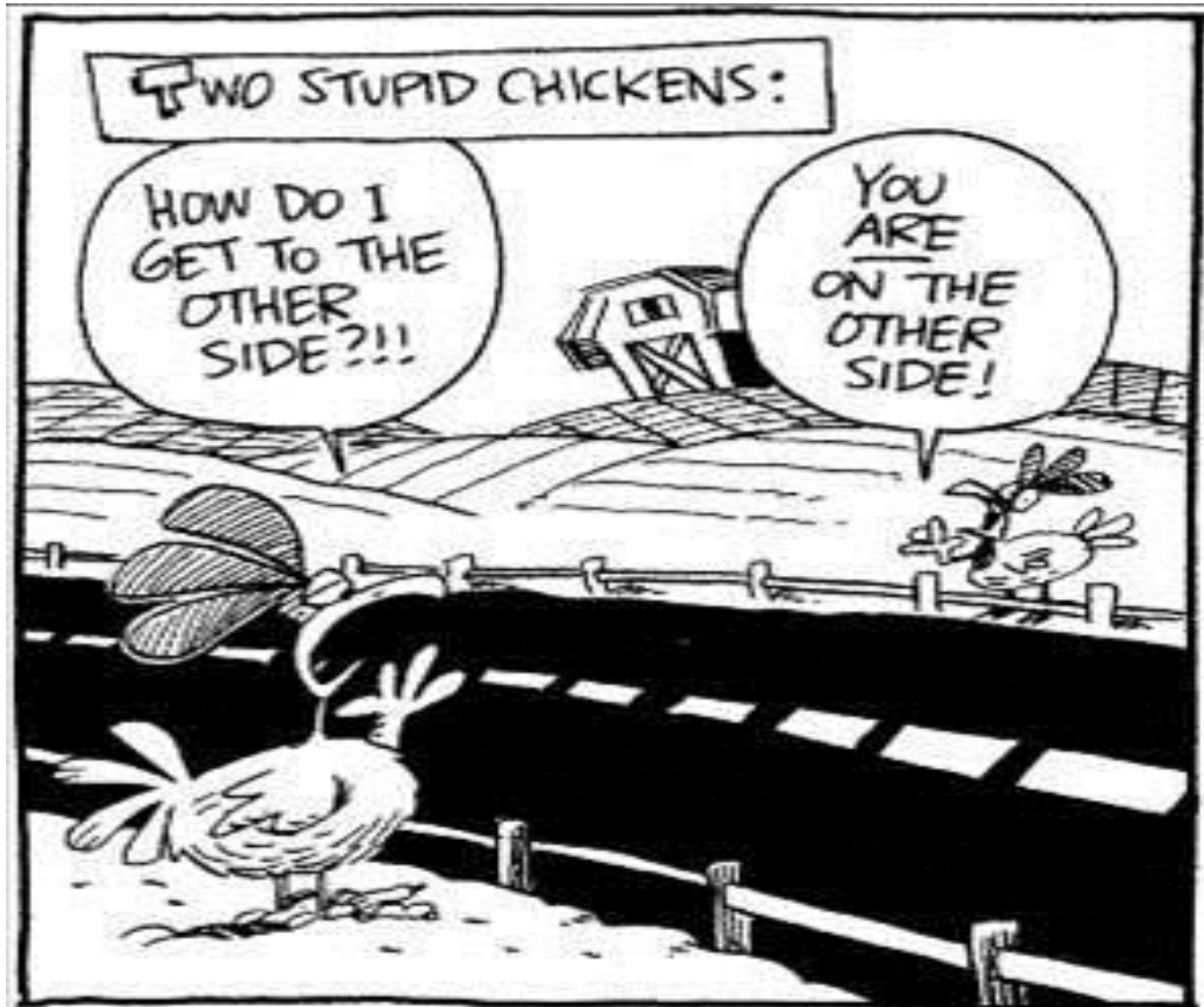
AMBITIONS

- **A reduction in fossil energy intensity of up to 30% by 2030**
- **Up to 20% reduction in non-renewable, primary raw material intensity by 2030**
- + a significant contribution to a drastic **efficiency improvement in CO₂-equivalent footprints of up to 40% by 2030**
- + potential improvements extend beyond “process industry”

CHALLENGES

- bridge the innovation « valley of death »
- overcome the characteristics of these industries (high risks and long-term investments with long RoI timeframes)
- overcome the fact that the social benefits of greener process industries cannot be easily appropriated by the investing firms (market failures)
- working along the value chains
- confidence in Europe

Technology – policy gap





WHY WILL WE SUCCEED?



THE SYSTEMIC APPROACH...

- From raw resources to the end user industries = **the value chain**
- From research to demonstrations and market = **the innovation chain**
- From the big to small and medium enterprises = **the industrial chain**

... to outpace the other regions

WHY WILL WE SUCCEED?



BUILD ON EXCELLENT BASIS: world leaders

NEW CONCEPTS: $1+1=3$

ECONOMIC SENSE: produced in Europe

ADEQUATE SKILLS: knowledge into work force

CROSS-SECTORIAL TRANSFER: integrated value chains

Indicators

Environmental performance & better use of resources

- Greenhouse gas emissions
- Waste management
- Reduced resource consumption (excluding energy and water)
- Water
- Energy

Economic performance

- New systems and technologies developed
- Patents
- Activities leading to standardisation
- Market potential ...
- Reduction of cost per unit or process ...

Social performance

- Skills & education
- Jobs
- safety

New thinking, new doing

No-one can do it alone

-> build synergies:

- across industries
- across public/private
- across borders
- across technologies

www.spire2030.eu

http://www.youtube.com/watch?v=0evBMV_lf6Y



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