

# Finance for innovation: Towards the ETS Innovation Fund



Chemicals & bio-based Round table

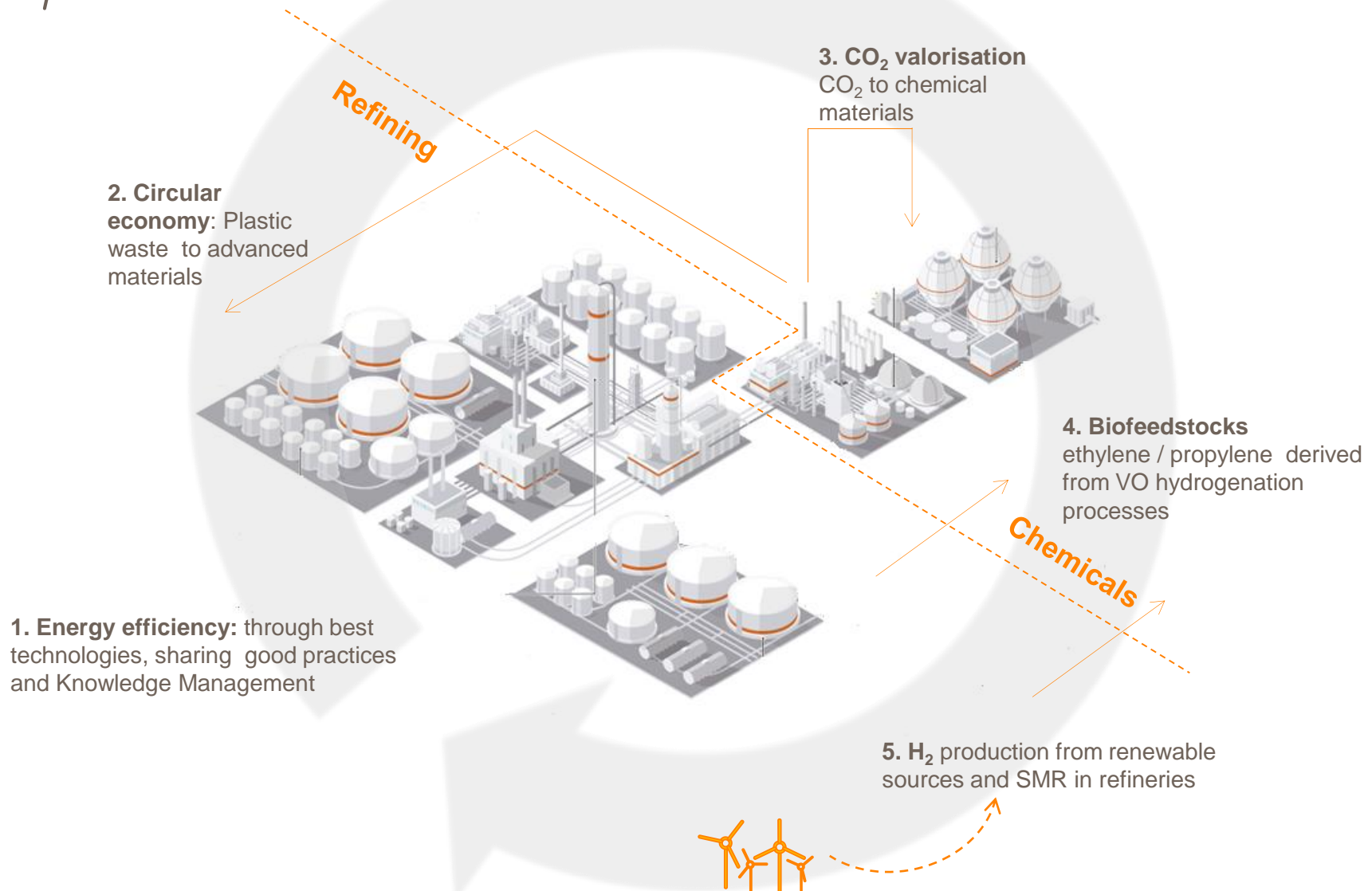
**Jaime Martín Juez**

Director of Technology and Sustainability

Brussels, 23-March-2017

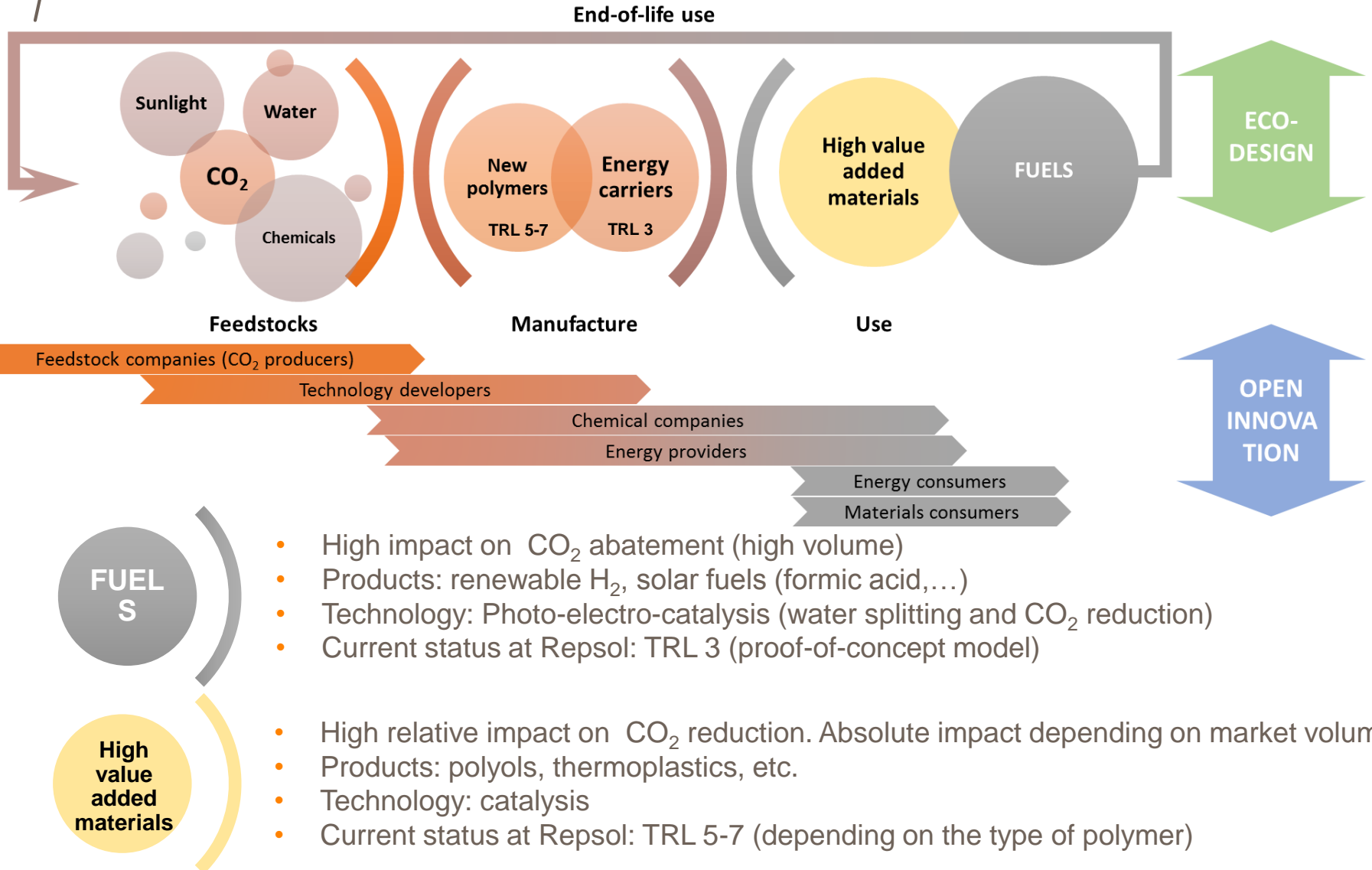
# Refining – Chemical Integration

Innovation as a key driver



# Chemical valorisation of CO<sub>2</sub>

Project development

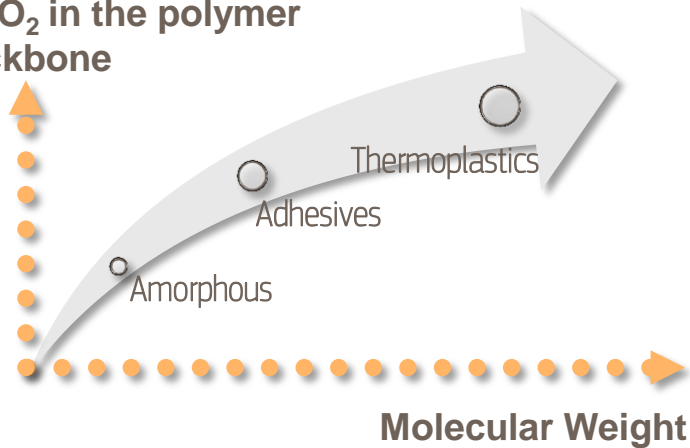


# CO<sub>2</sub> to chemical materials

Project development: 3 types of CO<sub>2</sub> based polymers



%CO<sub>2</sub> in the polymer backbone



- CO<sub>2</sub> from our own industrial processes
- Technology: catalysis
- Applications: adhesives, thermoplastics, coatings, elastomers, smart materials,...
- GWP reduction: up to 30%
- Energy savings:
  - Electricity: up to 57%
  - Fuel: up to 11% (as Kg fuel eq, FDP ReCiPe)

- TRL: 5 to 7 (depending on the type of polymer)
- Industrial scale: 2020
- Investment: several hundreds M€
- Applications development: collaboration with selected customers
- Public co-funding sources:
  - EEA-Grant tool
  - National contact point funds (CDTI)



# CO<sub>2</sub> to chemical materials and fuels

Financing and support



To ensure leadership of the European chemical industry in clean technologies for the valorisation of CO<sub>2</sub> it is essential to:

- 1) Provide appropriate support to the development of the various CO<sub>2</sub> conversion technologies regardless its Technology Readiness Levels:
  - Many CO<sub>2</sub>-derived products will have trouble competing with fossil derived alternatives:
    - Investment for the development and scale-up of the new technologies to reduce operating costs, capital expenditures, scale-up risks, take advantage of scale-economies, etc. → **ETS Innovation Fund.**
    - Incentives for CO<sub>2</sub> conversion products production and use:
      - ✓ **ETS** : Both, CO<sub>2</sub>-derived products and CO<sub>2</sub> conversion solutions should be eligible for ETS
    - Availability of low price and low emissions electricity
    - Establish the supply chain and the value chain: industrial symbiosis
- 2) Ensure coherence and stability over time of the Resource and Energy policy framework to allow investment in related low emissions technologies in Europe:
  - **Policy and regulation**, should take into account products made of CO<sub>2</sub> (as the recent revised Renewable Energy Directive is paving the road to fuels synthesized from CO<sub>2</sub>). At present, however, CO<sub>2</sub> fuels and products are not yet fully defined in any directive
  - Define and establish common standards for Life Cycle Analysis that covers all aspects of sustainability.

*Inventemos el futuro*

THANK YOU

