



# EPOS

SYMBIOSIS IN INDUSTRY

Efficiency  
Performance  
Operations  
Symbiosis

Enhanced energy and resource Efficiency and Performance  
in process industry Operations via onsite and cross-sectorial Symbiosis

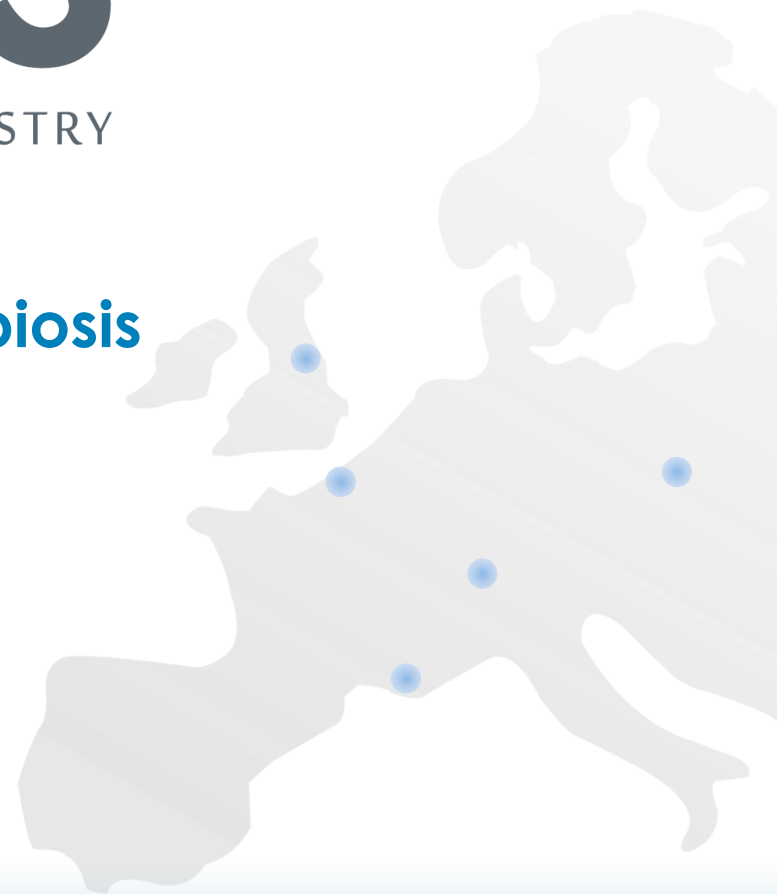


## **CEN CWA kick-off – industrial symbiosis**

Brussels, 21st February 2018

### **The EPOS project, short intro**

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# EPOS objective

make businesses and operations

- more efficient
- more cost-effective
- more competitive and
- more sustainable

across process sectors

via symbiosis

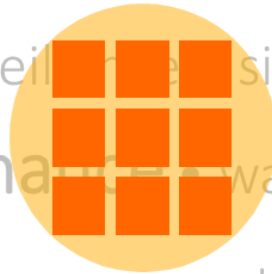
- on process industry sites
- in cross-sectorial clusters





# industrial symbiosis

- facility **clustering** • conference rooms • infrastructure • pipelines • tanks • equipment • machines • **utilities** • logistics • purchasing • catering • open days • personnel • job fairs • reception • fire panel & **services** • gate control
  - security guards • video surveillance • site lighting • window cleaners • building, road & green **maintenance** • water treatment • **waste** collection
    - storage facilities • waste streams • waste heat • byproducts • **CCUS** • **resources** • raw materials • renewables • **energy** • electricity • grid mgt • VPP • transport service • parkings • car pooling • fitness rooms • running tracks
      - **CSR** • site shops • post office • nursery • **catering** • restaurants •



# EPOS industrial symbiosis

- EPOS: 5 global process industries from 5 key relevant sectors:



plus: 5 highly R&I minded SMEs  
2 excellent science institutes

» validate IS in process industry

- in & across sectors



# EPOS industrial symbiosis

- in EPOS clusters
  - 3 industrial clusters
    - IS between 2 or more process industries  
e.g. Hull (UK), Lavera (FR), Rudniki (PO)
  - 2 district clusters
    - IS between process industry and local community
    - demo cluster: AM in Dunkirk (FR)

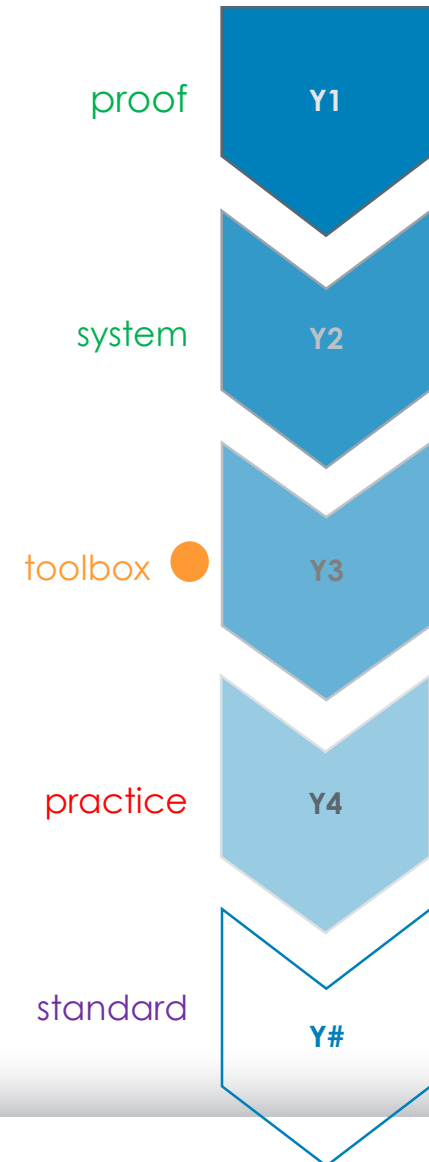


## » EPOS challenge

- proof > system > toolbox > practice > standard

# EPOS roadmap

- 4Y– understand
  - learn » awareness
- 3Y– develop
  - quantify » tool & cases
- 2Y– validate
  - apply » replicability
- 1Y– valorise
  - exploit » outreach, impact





# industrial symbiosis standard

- **EPOS** initiatives

- advisory board

- ISO, CEN, associations, stakeholders

- sector associations workshop

- SPIRE projects

- joint initiatives

- ~ Sharebox

- CEN/CENELEC, SIST

- ~ colleague projects



# EPOS view on IS standard



- deep understanding of industrial symbiosis by quadruple helix
- adoption of best practice methodologies proven through implementation
- **CWA on terminologies and methodologies** to develop best practice guidelines
  - using common vocabulary
  - thinking open-minded, open-ended, open-innovative
  - sharing tools and methodologies
  - creating impact



SYMBIOSIS IN INDUSTRY

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