



Circular  
economy

**Interreg**   
2 Seas Mers Zeeën  
**NEREUS**  
European Regional Development Fund



## DEMOCASE CAPSO

Testing a water treatment plant to reuse water in agro-food business.

Study how to treat sludge to produce biogas and improve nutrient recovery in agriculture

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St-Omer, France



**CAPSO**  
COMMUNAUTÉ D'AGGLOMÉRATION  
DU PAYS DE SAINT-OMER



# Territory context and strategy

## Communauté d'Agglomération du Pays de Saint-Omer

Inter-municipality public authority

**56 medium-sized towns & villages** around Saint-Omer,  
total **110.000 inhabitants** (incl. 3 towns over 11.000 inhabitants)

**Urban planning/development** of rural & peri-urban area.

Guarantees access to basic resources such as...

1. **Water** : wells and distribution of drinking water (security)
2. **Waste and sanitation** :
  - Collective : full scale water plants, Waste management,
  - Non collective : controlling individual equipment
3. **Local renewable energy**
4. Multi-party stakeholder **Project facilitation**
5. **Economical development** : industrial/business/commercial estate management



Implements national/european regulations on waste & water treatment - such as Water Framework Directive.

- **not mandated to achieve research & development,**
- has ambition to provide a **positive and supporting background**
- for the development of **new solutions for better efficiency** in resources consumption.
- Use them as leverage for local economic attractiveness



Examples : agriculture (farm input), agri-food industry (lowering water consumption, transforming waste...), transportation (using alternative energy i.e. CNG), housing (local supply of renewable energy)...

# Territory context and strategy

## CAPSO policy

### STRATEGIE ENERGETIQUE CAPSO

**Axe 1 :**  
Maîtriser la consommation  
énergétique

Encourager la massification de la  
rénovation

Lutter  
contre la  
précarité  
énergétique

Encourager une mobilité durable  
voyageurs et marchandises

Faire évoluer les comportements

**Axe 2 :**  
Développer les circuits courts de  
l'Energie

Renforcer les filières ENR&R et  
mobiliser les gisements agricoles

Consolider les infrastructures  
énergétiques et les outils  
innovants

Accompagner la transformation  
économique du territoire en  
consolidant la formation

**Axe 3 :**  
Mobiliser le territoire  
sur la transition énergétique

Renforcer l'animation  
territoriale

Renforcer l'accompagnement sur  
le terrain

Mobiliser la ressource financière  
et créer des outils financiers,  
juridiques, économiques  
innovants

NEREUS serves

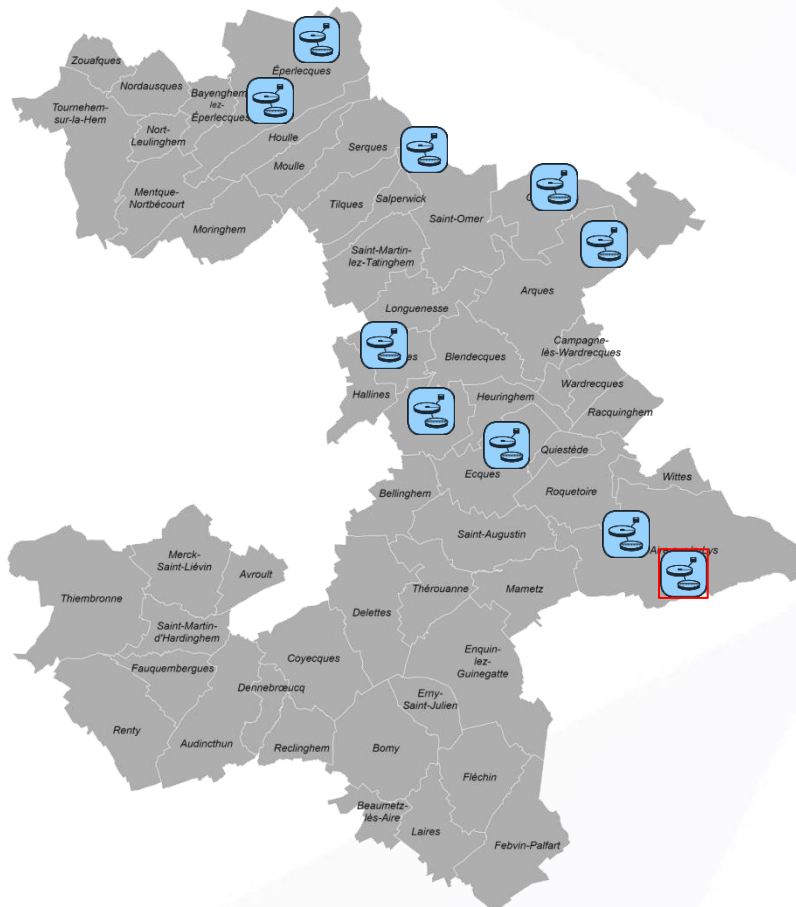
CAPSO's Development Strategy for energy and waste

Included in CAPSO's CLIMATE ACTION PLAN

connected to the *Hauts-de-France* Regional Framework on Sustainable Planning and Development

# Territory context and strategy

## CAPSO competencies



water treatment  
plants

### WATER POLICY

Drinking water distribution system

Water catchment area + water towers

### COLLECTIVE AND NON-COLLECTIVE SANITATION

Effluent discharge

Water quality + sludge management

### ENVIRONMENTAL POLICY

- ✓ Household waste collection and management
- ✓ Support to energy management actions
- ✓ Measures in favour of regional development of renewable energy
- ✓ ...

## POLITICAL AND STRATEGIC CHOICE

- ➡ To implement environmental **policies** in resources recovery to produce energy, to recover nutrients and to reuse water

## GOALS TO REACH

- ➡ To stimulate private initiative instead of a public investment
- A biogas unit will be implemented by a private company  
/ exclusive of NEREUS project
- ➡ To focus on basic services to population
- Invest in water re-use from water treatment plants to reduce water consumption
  - Bring technical solutions to economic stakeholders willing to innovate into sustainable practices through circular economy

### DEMOCASE

Testing a water treatment plant to reuse water in agro-food business.  
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# CONTRIBUTION

## WP1 | Strategy and governance

INTERREG 2  
MERS NEREUS



Economic  
development strategy



Environmental  
strategy



Consultation  
acceptance by the  
population



Participation to the conception of a european methodology  
about the acceptance of circular economy projets



Network Coordination of a group of local stakeholders in support  
to the experimentation

# CONTRIBUTION

## WP 2 | Technical solutions

Data collection and analysis to integrate into NEREUS outputs

Capacity building and partnership development for collective sanitation

- ✓ Partnership working with Water Agency, ADEME, private companies (Veolia, Suez...),
- ✓ Faisability studies by consultants...

Internal skills required for non-collective sanitation (controls)

### GESTION DE L'ASSAINISSEMENT COLLECTIF par commune du territoire de la CAPSO

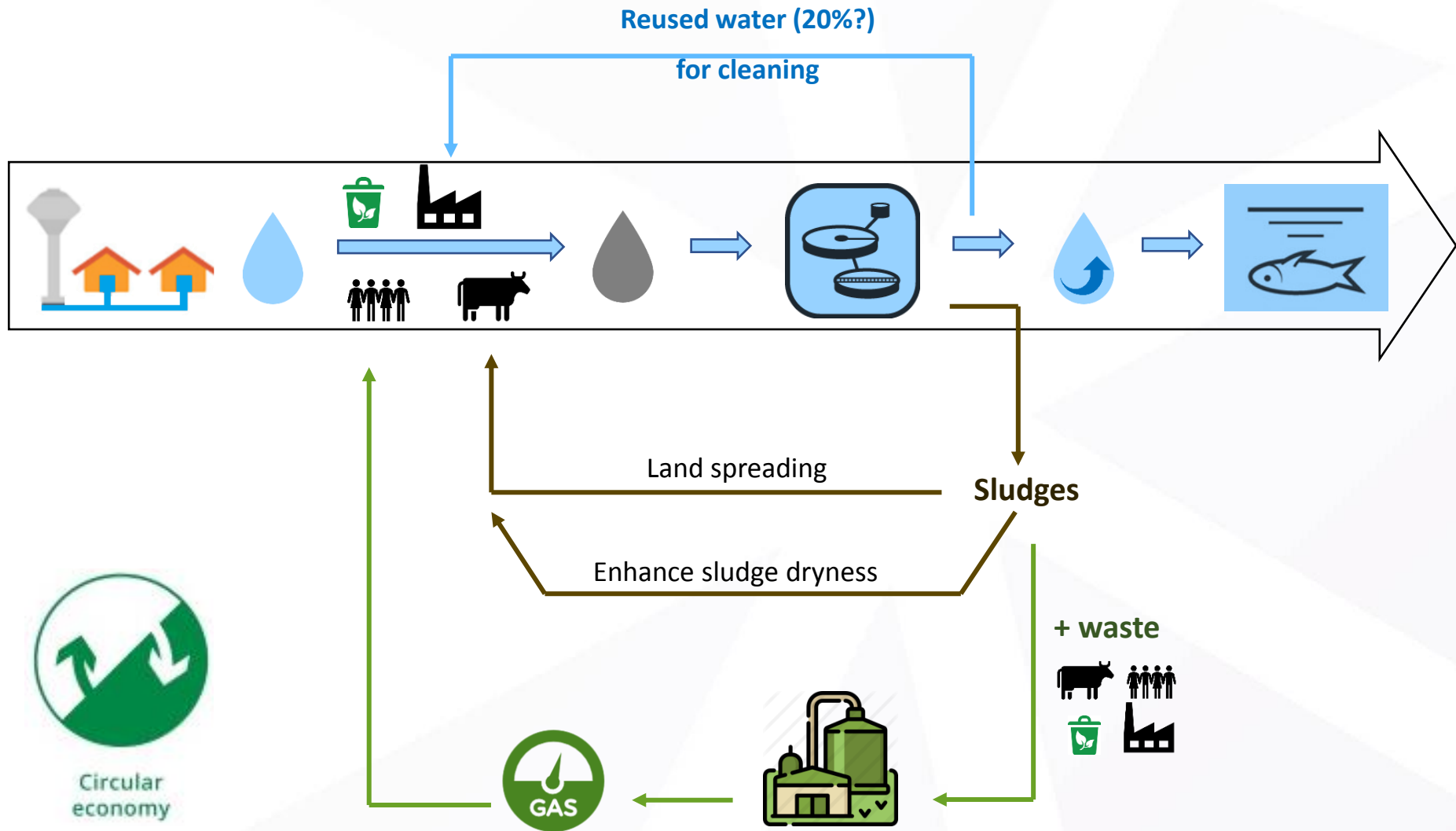


#### CONTACTS :

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# DEMOCASE CAPSO





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## WP 4 | Water reuse



**Technical study** of water treatment from agri-food industries - on several water treatment plants to ensure reproduction



**Implementation of water treatment plant pilot** with water reuse system for an industrial activity zone (incl. Agrifood industry)

### Objectives :

- ✓ To know the feasibility of treating waste water from the activity area
- ✓ To dimension water treatment plant
- ✓ To conceive and dimension water reuse for industrial needs
- ✓ To give a constructive analysis to industries to encourage them to reuse water
- ✓ To assess sludge chemicals & physical properties (biogas power ?)



**System cost - Acceptance – Pilot test**

## WP 3 | Resources recovery



**Equipment to enhance sludges dryness and storage.**

> Experimentation with lime treatment

### Objectives :

- ✓ Better sludge storage
- ✓ Reduction of sludge volume
- ✓ Better holding
- ✓ Reduction of pollution after water run-off
- ✓ Better transport facilitation and spreading capacity

## WP 5 | Energy recovery



**Technical study** about combining different flows of waste to create a biogas line to inject energy in the public network



Lab tests – transport and supply opportunities – outlet study – business model

### Objectives :

- ✓ To find solutions to recover energy from waste under CASPO responsibility
- ✓ To give a constructive analysis to private companies to encourage them to integrate CAPSO waste

➔ Dissemination to private companies

# Conclusion

Thanks to NEREUS,  
The local authority CAPSO will :

- Provide equipment and capacity building, focusing on its **mandatory competencies** (water and sanitation)
- Stimulate private initiatives : **use circular economy as a leverage for economic development**
- Strengthen its **Strategy for alternative energy and waste** with innovative solutions

CAPSO brings input to implementation of technical solutions and production of a local development strategy.

# CONTACTS

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