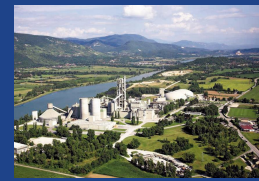




« CIMENTALGUE » project – Stage 2

Marie Godard Pithon

CIMENTALGUE / stage 2 – main facts



- ▼ Industrial symbiosis associating cement plant and microalgae plant
- ▼ Co-valorisation of CO₂ and fatal heat through production of photosynthetic microalgae with natural light
- ▼ Building and operation of demonstrator within Montalieu (38) cement plant – 400 m² of culture under 800 m² greenhouse
- ▼ Industrial research project in order to answer :
 - ▼ Feasibility and durability of such symbiosis
 - ▼ Biomass quality and market/social acceptability of such biomass
 - ▼ LCA of symbiosis
 - ▼ Assessment of advantages for cement industry and microalgae industry (environmental ; new activity ; new markets)
- ▼ 3 years (2019 – 2021)

CIMENTALGUE / stage 2 – stakeholders



Coordinator



Engineering and processes
operation



Industrial partner and
financial partner



Microalgae processes
development



LCA

Labelling and financial support :



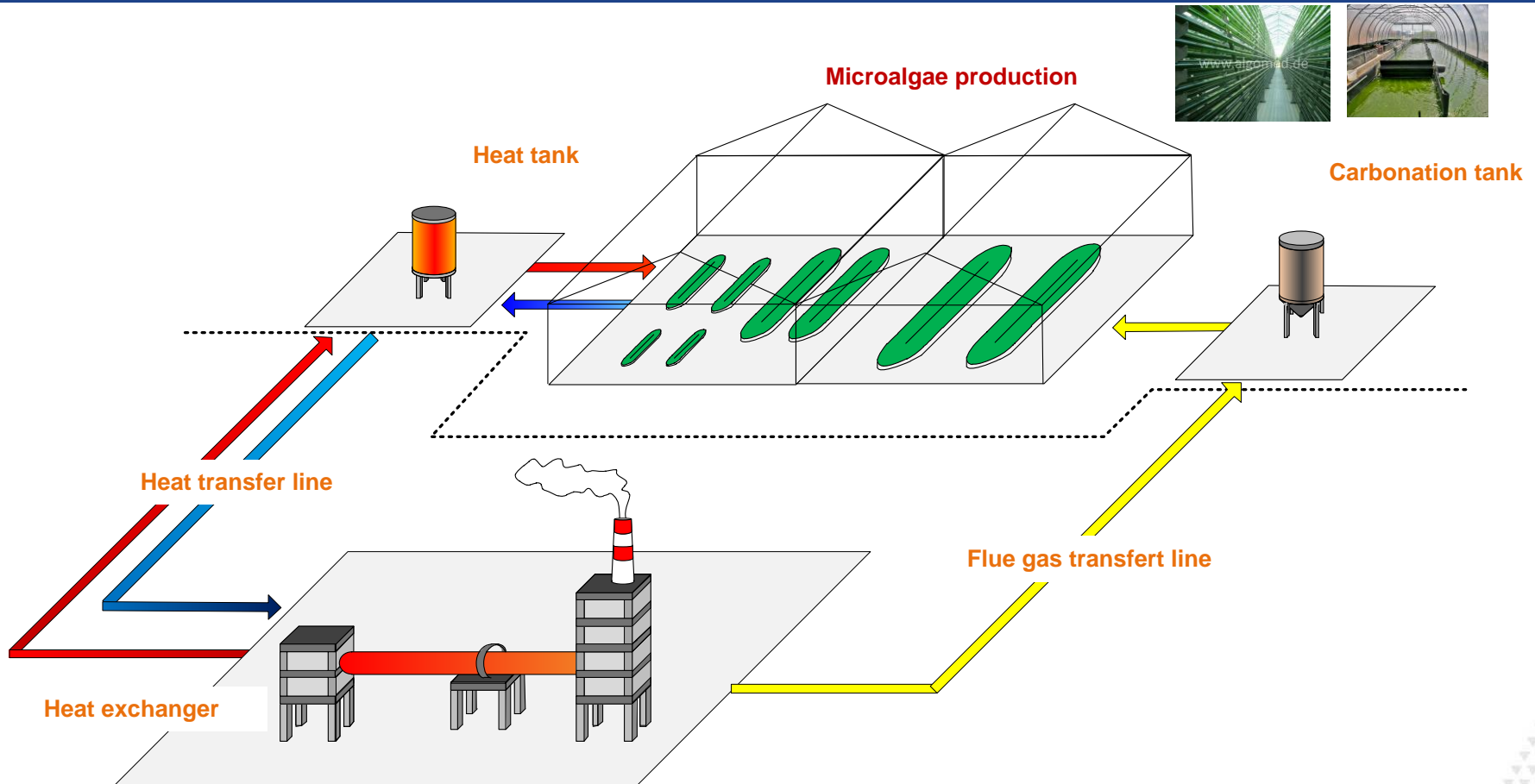
ADEME



Agence de l'Environnement
et de la Maîtrise de l'Énergie



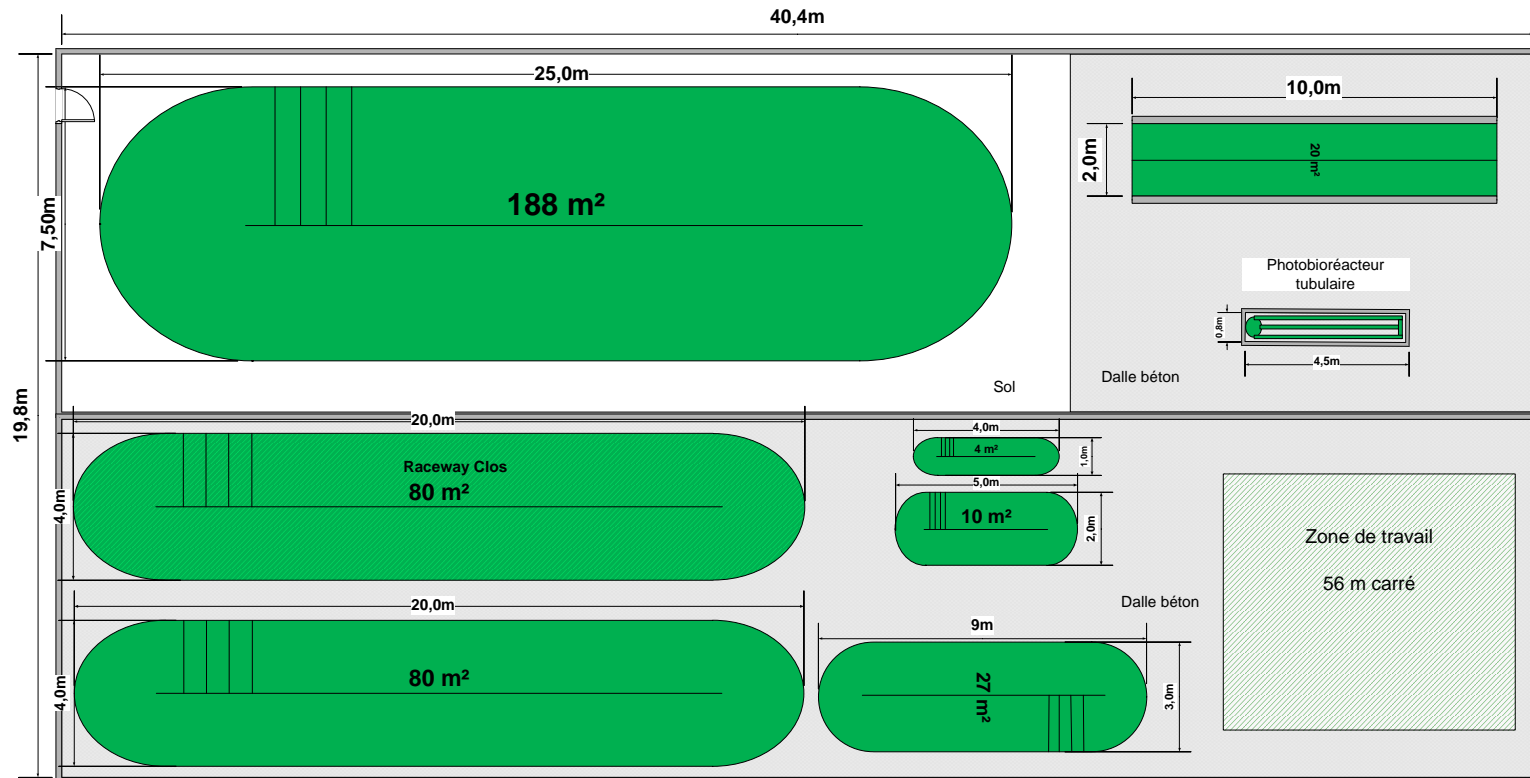
CIMENTALGUE / stage 2 – demonstrator diagram



Cement plant



CIMENTALGUE / stage 2 – demonstrator diagram



Cuve
1,5 m³

Cuve
10 m³

Cuve
10 m³

Labo / local
49 m carré



CIMENTALGUE /stage 2 – culture systems



Open raceways



Closed raceway



6 / AlgoFilm



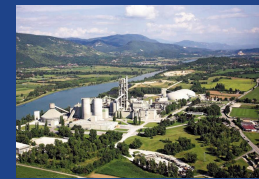
Tubular PBRs (LGem BV)



Inoculation PBRs



CIMENTALGUE / stage 2 – detailed steps



- ▼ **Demonstrator and sampling transfer lines construction:** specifications, sizing of processes, engineering, building and safety, metering devices
- ▼ **Operation of demonstrator :** production and acquisition of data – optimization – modelling – techno-economic analysis (impact of flue gas on microalgae quality)
- ▼ **Environmental impact analysis :** life cycle analysis of products from industrial symbiosis (biomasses and cement) – identification of favorable operating conditions towards environment
- ▼ **Social acceptance of such industrial symbiosis :** implementation of microalgae culture within industrial site

▼ **Planning :**

