

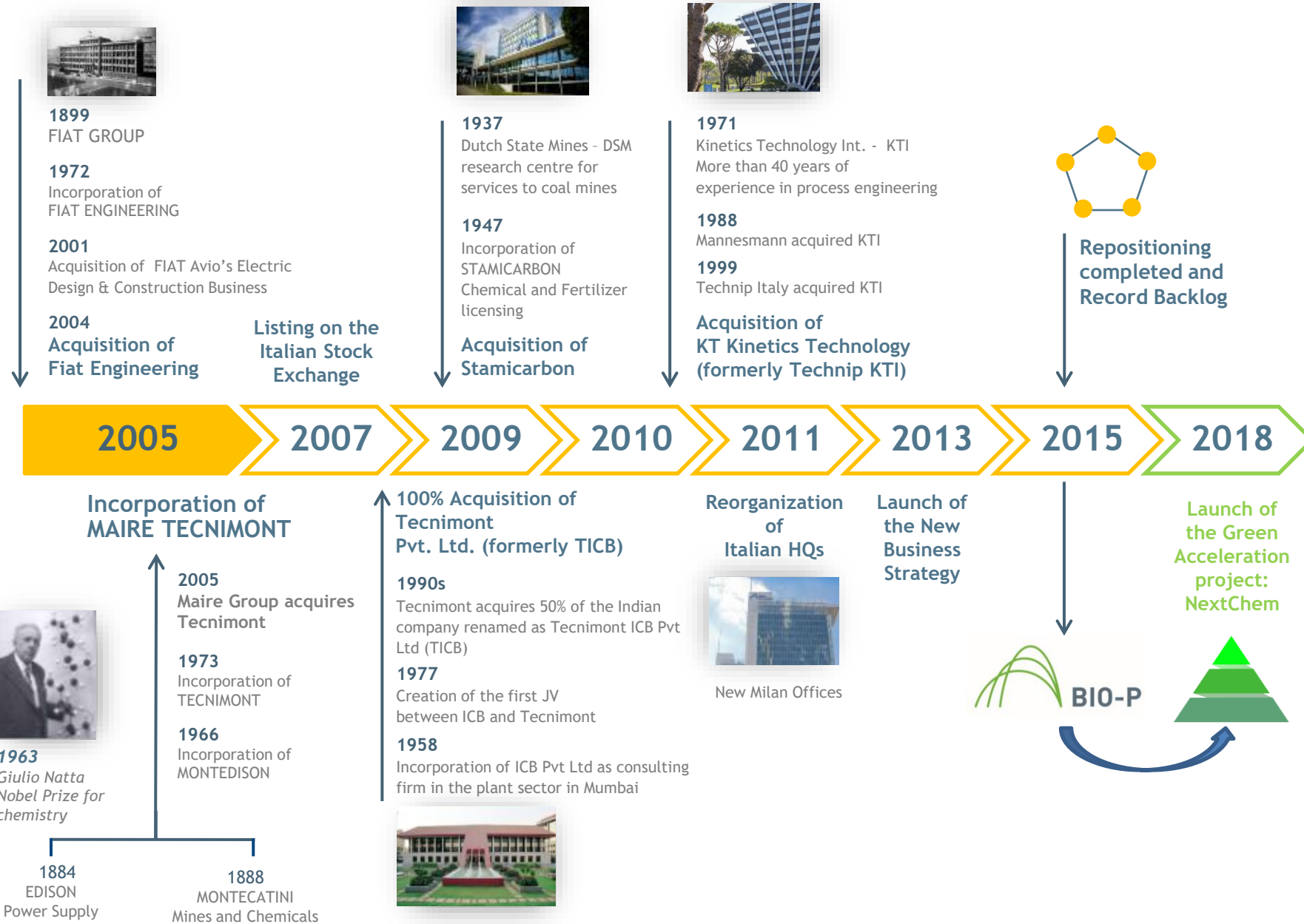


BIO-P

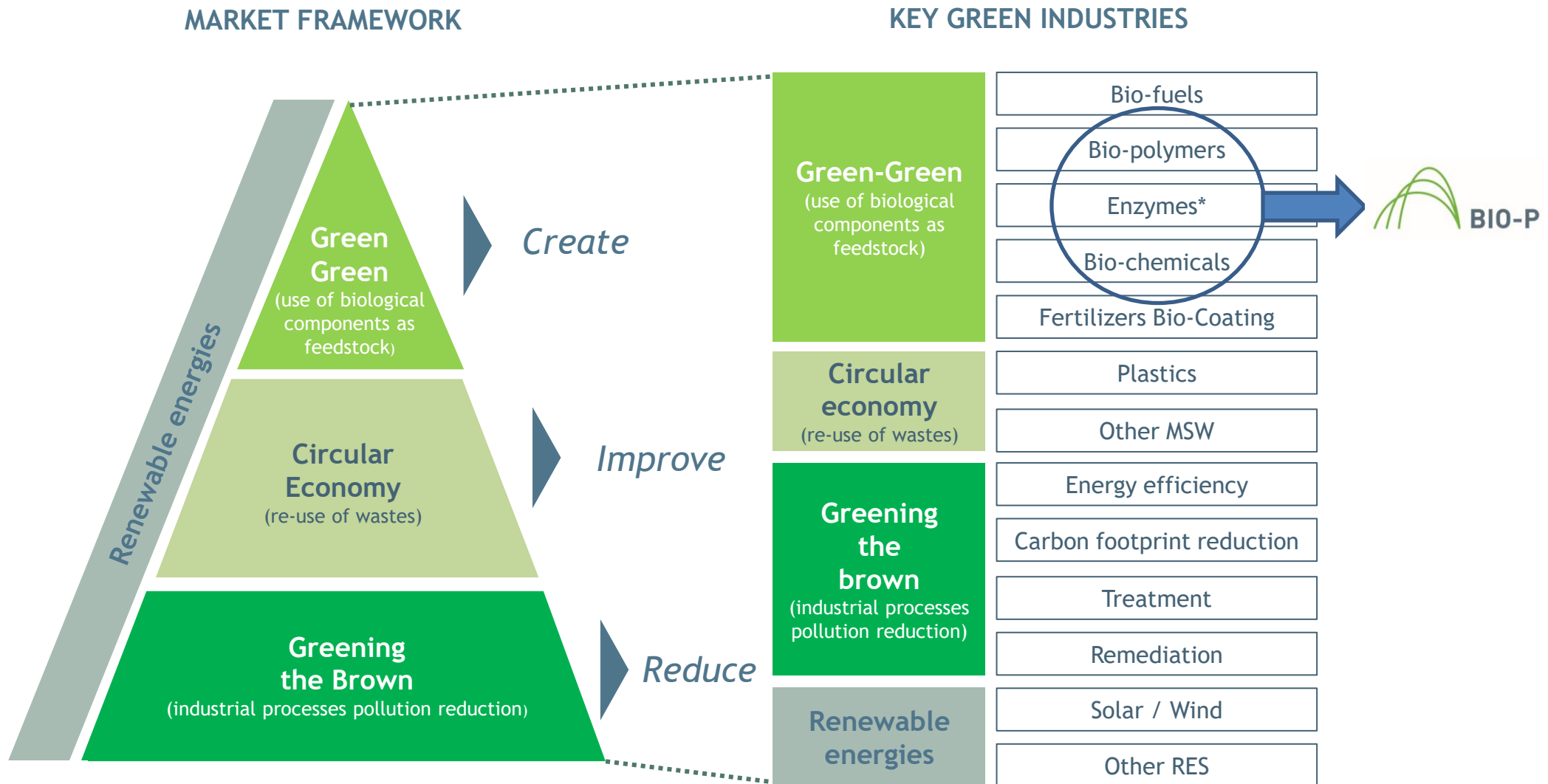
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AISAM 07/09/2020

KEY MILESTONES



NEXTCHEM FOR THE GREEN CHEMISTRY: AREAS OF ACTIVITY



* Enzymes: required element supporting bio-industries not based on bio feedstock

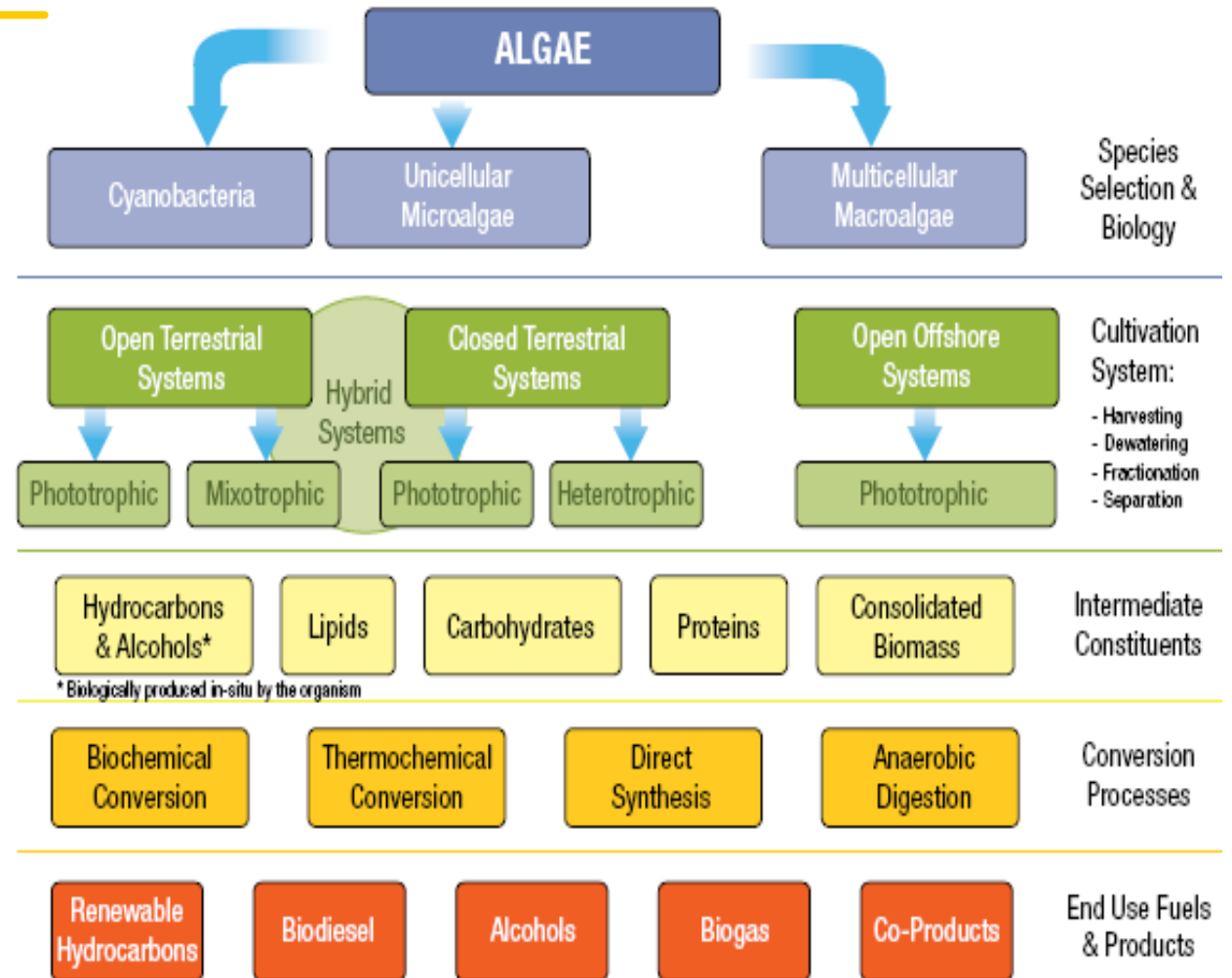


MAIN ACTIVITIES

- Laboratory and pilot-scale research.
- Research and technology transfer.
- Study of different kinds of microorganisms and processes for industrial use.
- Characterization and production of different molecule classes.
- Process design for biomass treatments and extraction of high value compounds.
- Preparation and management of national and international research projects.

MICROALGAL BIOREFINERY

Biorefining is about the integral exploitation of biomass composition, to convey each fraction to the most valuable use on the basis of a fine granularity, be it food/nutraceutical/feed, pharmaceutical, materials, bioplatfroms, energy production.



PATENT (European application; submitted)

super critical CO₂ (scCO₂) for key compounds extraction on microalgae matrix

CLAIMS:

- New process based on sCO₂ to:
- separate carotenoids from lipids
- purify omega 3-6 triglycerides
- refine starch from biomass

PATENT (European application; accepted)

Innovative and integrated process for the production of starch from *Chlorella vulgaris* based on feed pulse system.

CLAIMS:

- Phototrophic inoculum cultivation based on natural selection.
- Heterotrophic cultivation with a pulse feed system.
- High intracellular starch content has achieved.
- No SIP has required.



2018/2020 - Regional funded project BIPAM

Innovative and integrated process for Biopellets production from amylose wastes

Budget:	162.000,56 €
Regional contribution (52%):	85.050,29 €
Personnel:	65.149,30 €
Other costs+ overhead (20%):	49.531,26 €
Consumables& Prototype:	37.320,00 €
Subcontracting:	10.000,00 €

Implementation of an advanced and integrated transformation process that can be placed within the "Circular Economy" concept, which allows the production of totally biodegradable bio-pellets (which are decomposed by nature, or bacteria) and compostable (which can become compost) using as raw material starch extracted from starch waste (potatoes) and from algae (produced using waste water).



2018/2021 - EU funded project MEWLIFE

MicroalgaE biomass from phototrophic-heterotrophic cultivation using olive oil Wastewaters.

Budget:	228.338 €
UE contribution (60%):	137.003 €
Personnel:	139.550 €
travels + other costs + overhead (7%):	31.288 €
Consumables and durable goods:	35.000 €

PATENT

Innovative and integrated process for the production of starch from *Chlorella vulgaris* based on feed pulse system.



Specific nitrogen carbon and polyphenols balance species drives the microalgal growth to achieve best performance against bacteria and fungi.



BIO- P PROJECTS

2019-2023 - EU funded project INCITE

Innovative Chemoenzymatic Integrated Processes

Budget:	828.631,25 €
UE contribution (70):	580.041,88 €
Personnel:	476.905,00 €
Other costs+ overhead (25%):	151.726,25 €
Subcontracting:	200.000,00 €

The INCITE project aims to demonstrate novel integrated upstream and downstream processing paths involving flow chemistry and membrane technology in chemo-enzymatic processes.

The first demonstration case involves esterase-catalyzed production of a chiral molecule used as starting material for the production of insecticides in the field of crop protection and public health.

The second demonstration case relates to solvent-free synthesis of oleochemical esters using lipase enzymes.



THANK YOU

BIO-P

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