COAL FOR BIOECONOMY 2.0.

USE OF COAL TO BOOST THE FLOW OF RENEWABLE RESOURCES

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Coal as soil metabolism enhancer

- Soils contain the **major part of biosphere biodiversity** (more than 1000 different species/soil gr).
- **Maintaining and increasing biodiversity** provides better agricultural and forest productivity, minimizing the need of fossil resources inputs. Increasing biodiversity will boost the transfer and accumulation of water and air in the soil, which are essential resources to boost the microbiota of soils.
- Mass transfer phenomena (water and gases), increase the speed of the cycles of C, N and P, **boosting CO2 retention** as organic matter in soils and the productive capacity of biomass.
- **Microbiota needs organic Carbon** for its processes and therefore organic by-products are essential. These include xenobiotic substances and characteristics that can be harmful for microbiota. For this reason, they must be processed and formulated in order to stimulate microbiota and soils bio-capacity.
- Obtaining **functionalized bioactive substances** from coal as a raw material to leverage the potential of organic by-products. E.g: Pig slurry treated with polymers from coal to immobilize xenobiotic products, and therefore, to increase the fertilizing units efficiency and to minimize the environmental impact of the agriculture (30% of use)

Exogenous metabolites project

- For the use in the soil of the different forms of organic carbon present in coal, it is necessary to **activate it**, i.e introducing functional characteristics to increase its biological activity →two possible treatments:
  - Activation of coal from **physical-chemical** procedures.
  - Activation of coal from **biological** procedure.
- **Fertinagro Biotech** has submitted a project for the coal activation as source of organic carbon from a mix with substances known as metabolic inducers, which allows to use the coal as a source of carbon for microorganisms.
- Fertinagro has also developed technologies for **physical-chemical activation** that can be used in the same productive unit.

FERTINAGRO´S PROJECT FOR BIOECONOMY

PROJECT: **EXTRACELLULAR METABOLITES PRODUCTION PLANT USING A YEAST EXPRESSION SYSTEM**

PURPOSE: **Use of coal as an energy source in fertilizer production processes**

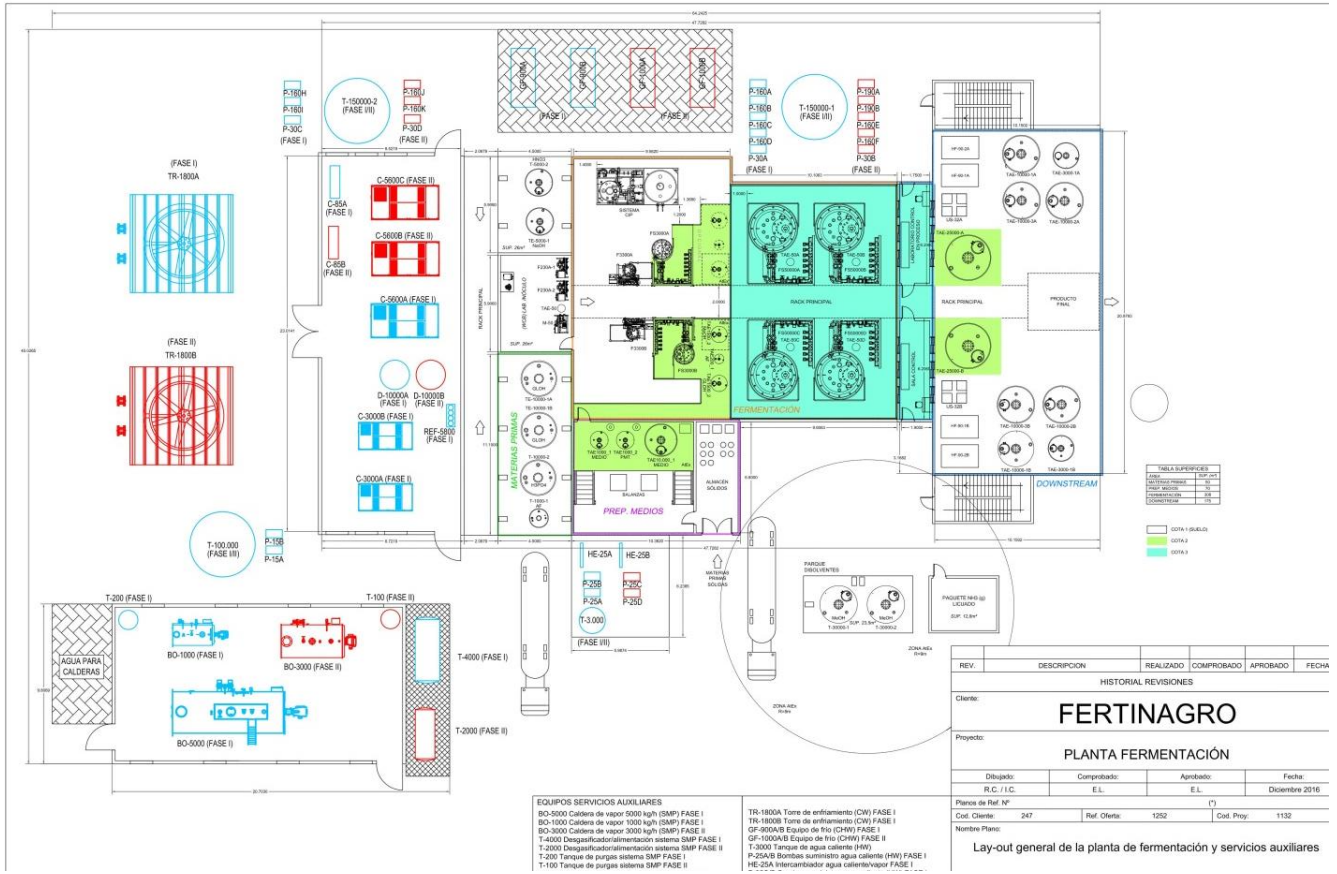
LOCATION: (Municipality) **Utrillas**

COUNTY : **Cuencas Mineras**

PROVINCE: **Teruel**

Investment : 10,765,000 €

Jobs: 20-30 people



THANK YOU VERY MUCH

QUESTIONS?

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