



LEONARDITE TREATMENT PLANTS AND MANUFACTURE OF ORGANO-MINERAL FERTILISERS

Speaker: José Ramón Hernando

Brussels | November 6th-7th, 2018

Grupo SAMCA | Who we are and what we do

Grupo SAMCA is a **family owned mining company** located in Teruel, Spain.
It has been extracting coal in the open air for 65 years.



SAMCA **employs 200 people** in the open air facilities and **supplies 1,600,000 t/year of lignite** to the Andorran thermal power plant, owned by ENEL.

However, the future of coal is unclear.

What do we do?

Production of organo-mineral fertilisers from leonardite

The **leonardite** is a superficial coal, little mineralized:

- Humic acid content greater than 50%.
- Humic acids are very high quality organic matter

An **organo-mineral** is a mixed fertilizer:

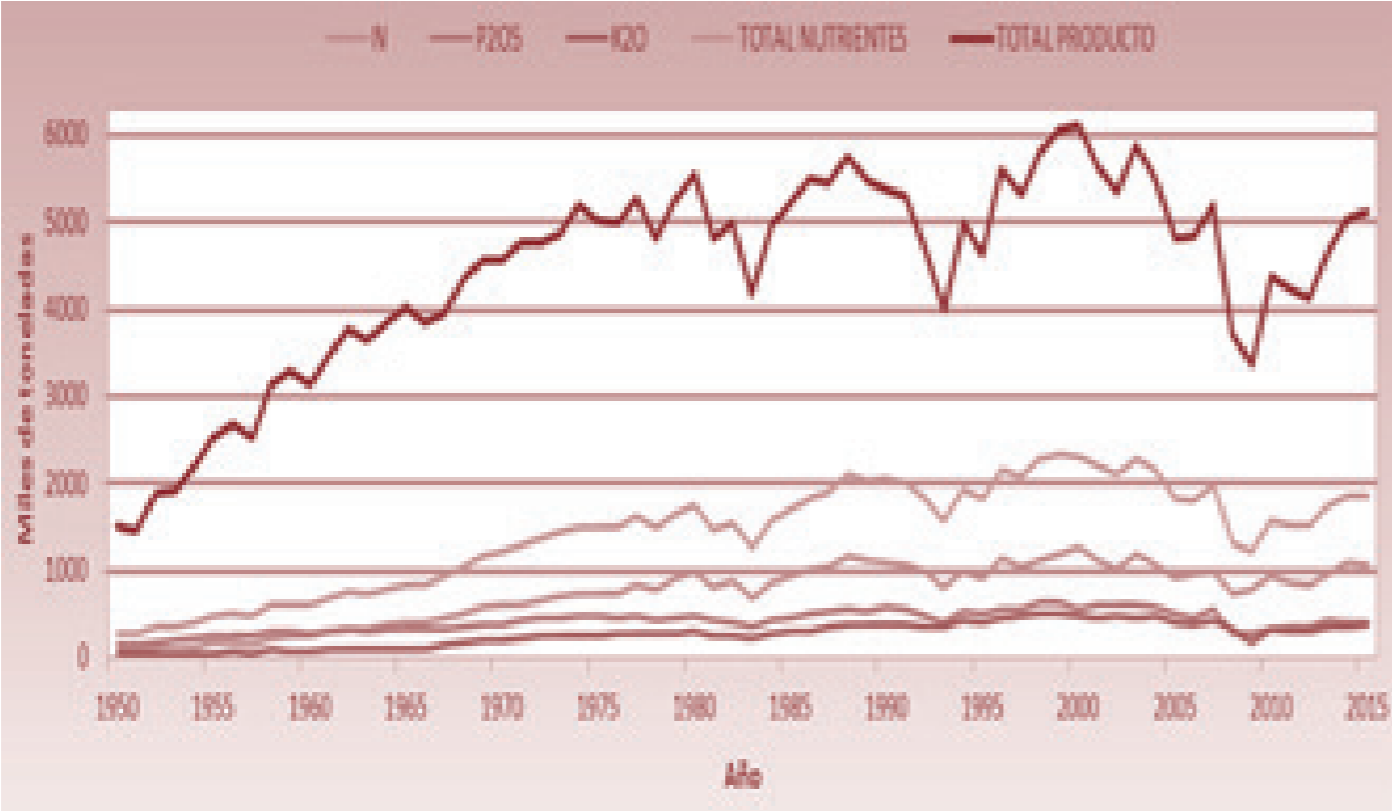
- 50 % organic matter for soil improvement
- 50 % minerals N,P,K to feed the plant



Grupo SAMCA | The answer

Fertilizer market

Consumption in Spain



- 5 Mt / year
- 2,000 M€ / year

World consumption



- 180 Mt / year
- 120,000 M€ / year

Leonardite treatment plant

Processes



Organo-mineral fertilizer plant

Processes

Treatment of 50,000 t/year of leonardite and lignite:

- Collection
- Washing
- Crushing and screening
- Silage
- Expedition

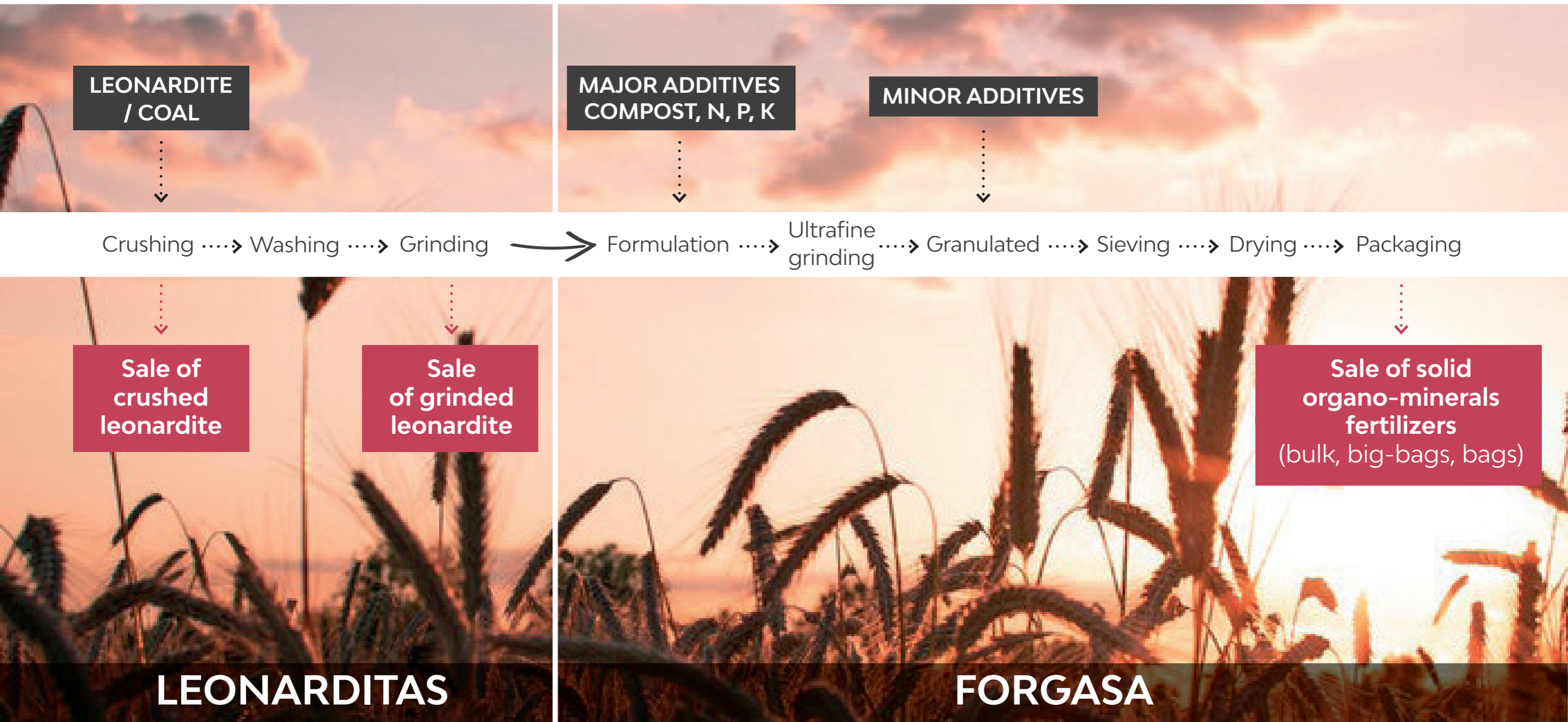


Manufacture of 100,000 t/year of organo-mineral fertilizers

- Collection of components: leonardite, lignite, compost, N, P, K
- Formulation
- Grinding
- Granulation
- Drying
- Packaging
- Expedition: bulk, big-bags, bags



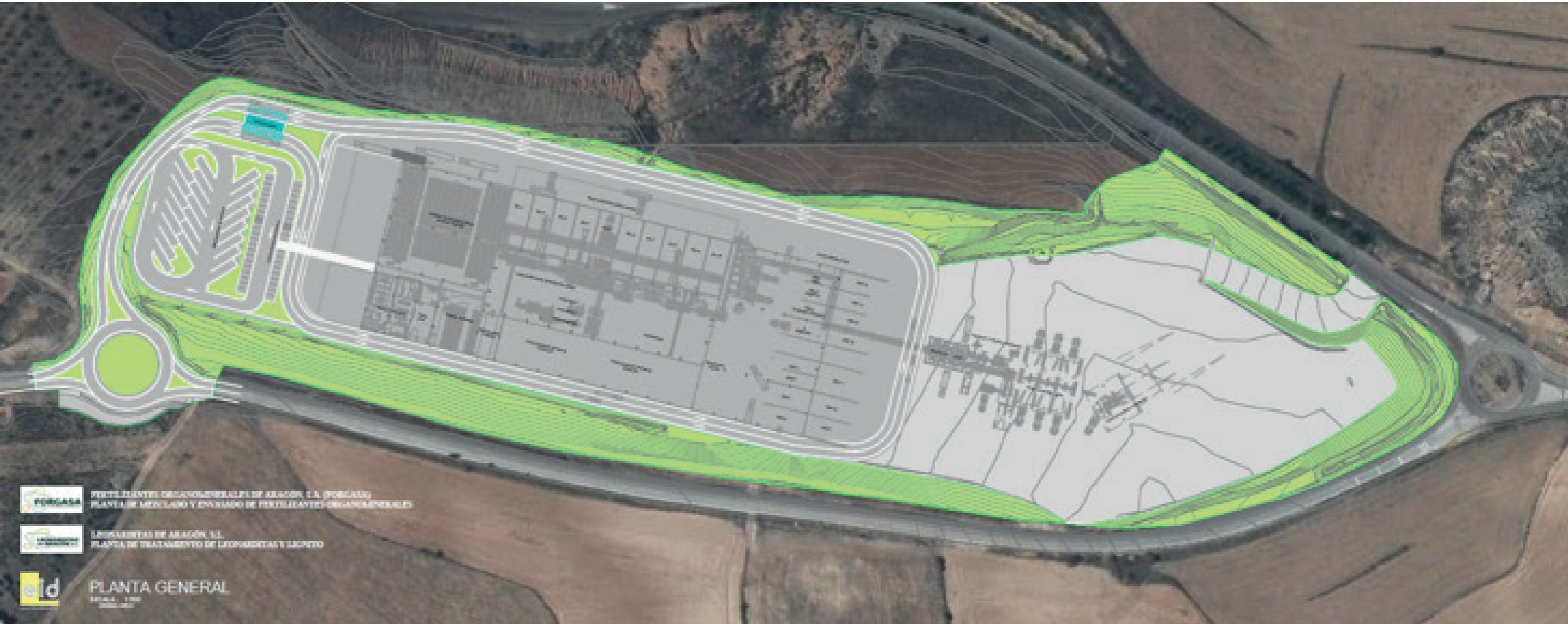
Processes | Solid fertilizer process diagram





Location




General development plan

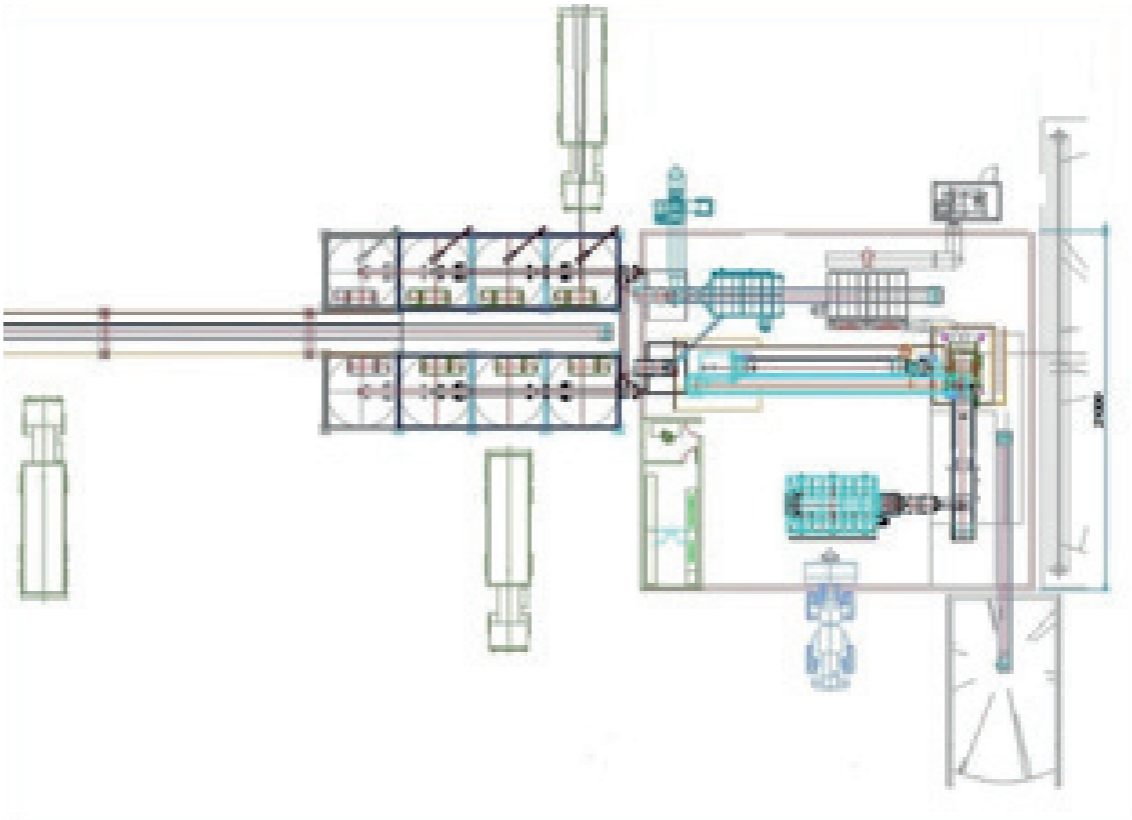
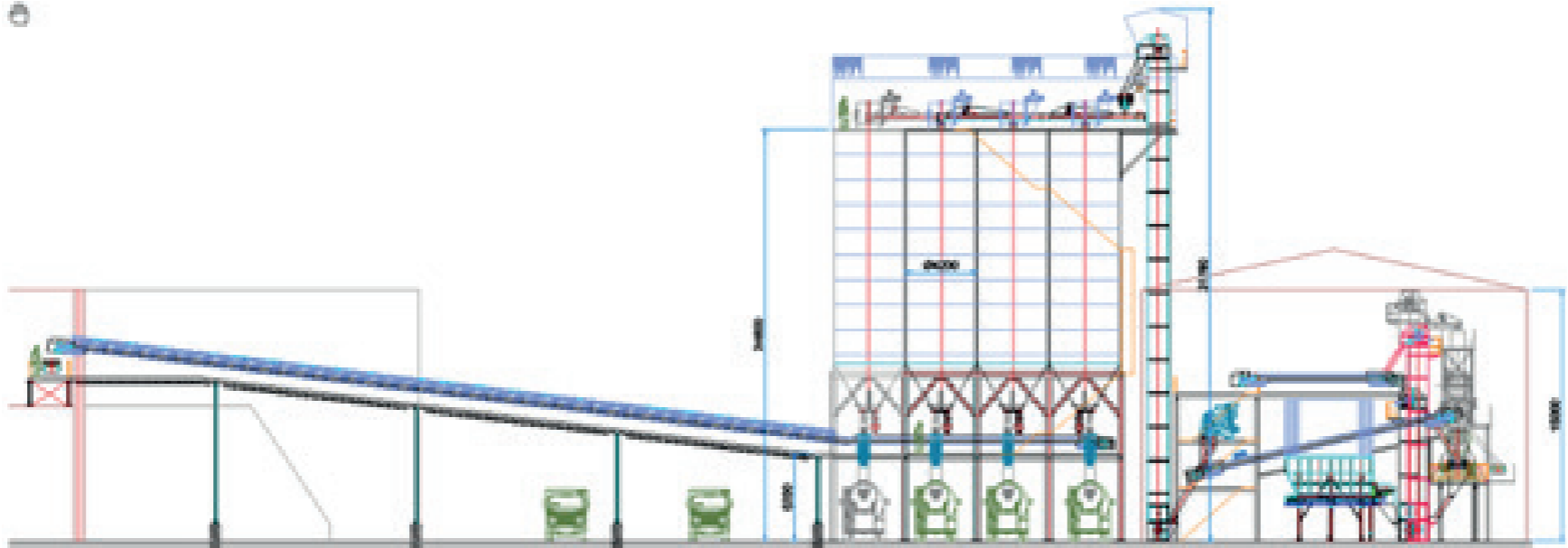


 FERTILIZANTES ORGANICOS S.A. (FORGASA)
PLANTA DE MEZCLADO Y ENVASADO DE FERTILIZANTES ORGANICOS

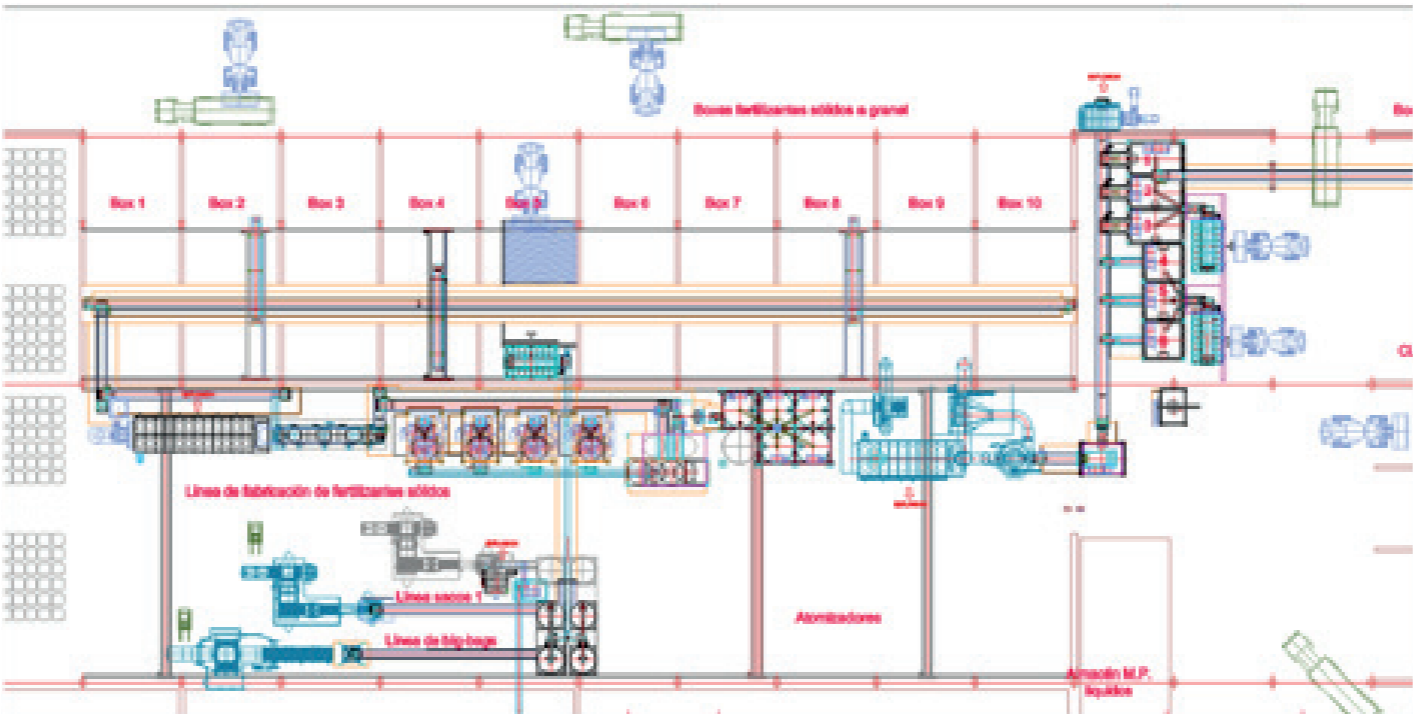
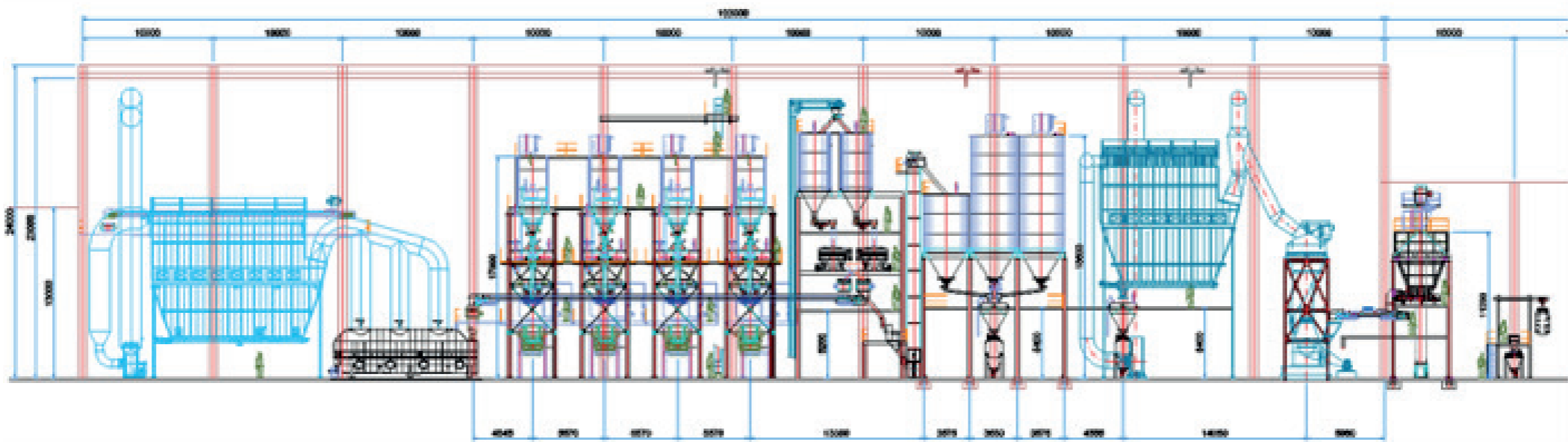
 LEONARDOS S.A.
PLANTA DE TRATAMIENTO DE LEONARDOS Y SACITO

 eid PLANTA GENERAL
Escala: 1:500
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General plan | LEONARDITAS treatment plant



General plan | FORGASA fertilizer plant

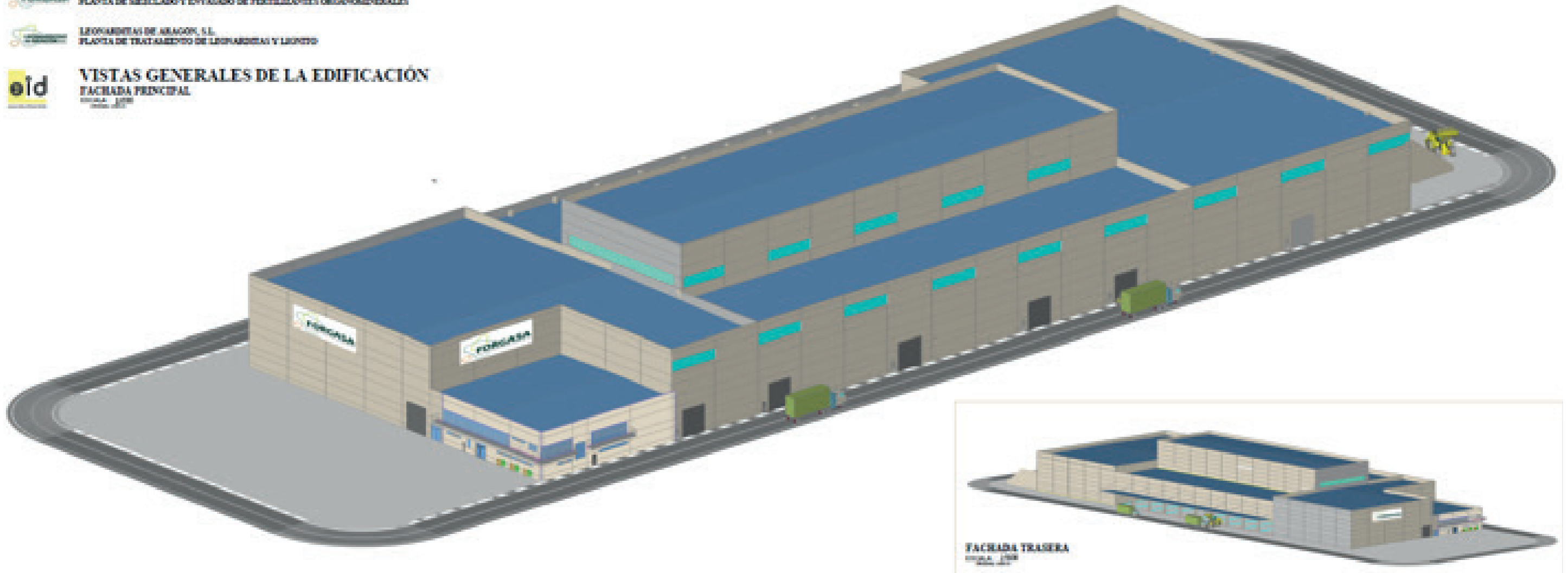


View | FORGASA fertilizer plant

 FERTILIZANTES ORGANOMINERALES DE ARAGÓN, S.L. (FORGASA)
PLANTA DE MECLADO Y ENVASADO DE FERTILIZANTES ORGANOMINERALES

 LEONARDEAS DE ARAGÓN, S.L.
PLANTA DE TRATAMIENTO DE LEONARDEAS Y LEONTO

 **VISTAS GENERALES DE LA EDIFICACIÓN**
FACHADA PRINCIPAL
Escala: 1:500
Fecha: 2019



Relevant data estimations



Treatment of 50,000 t/year of leonardite and lignite

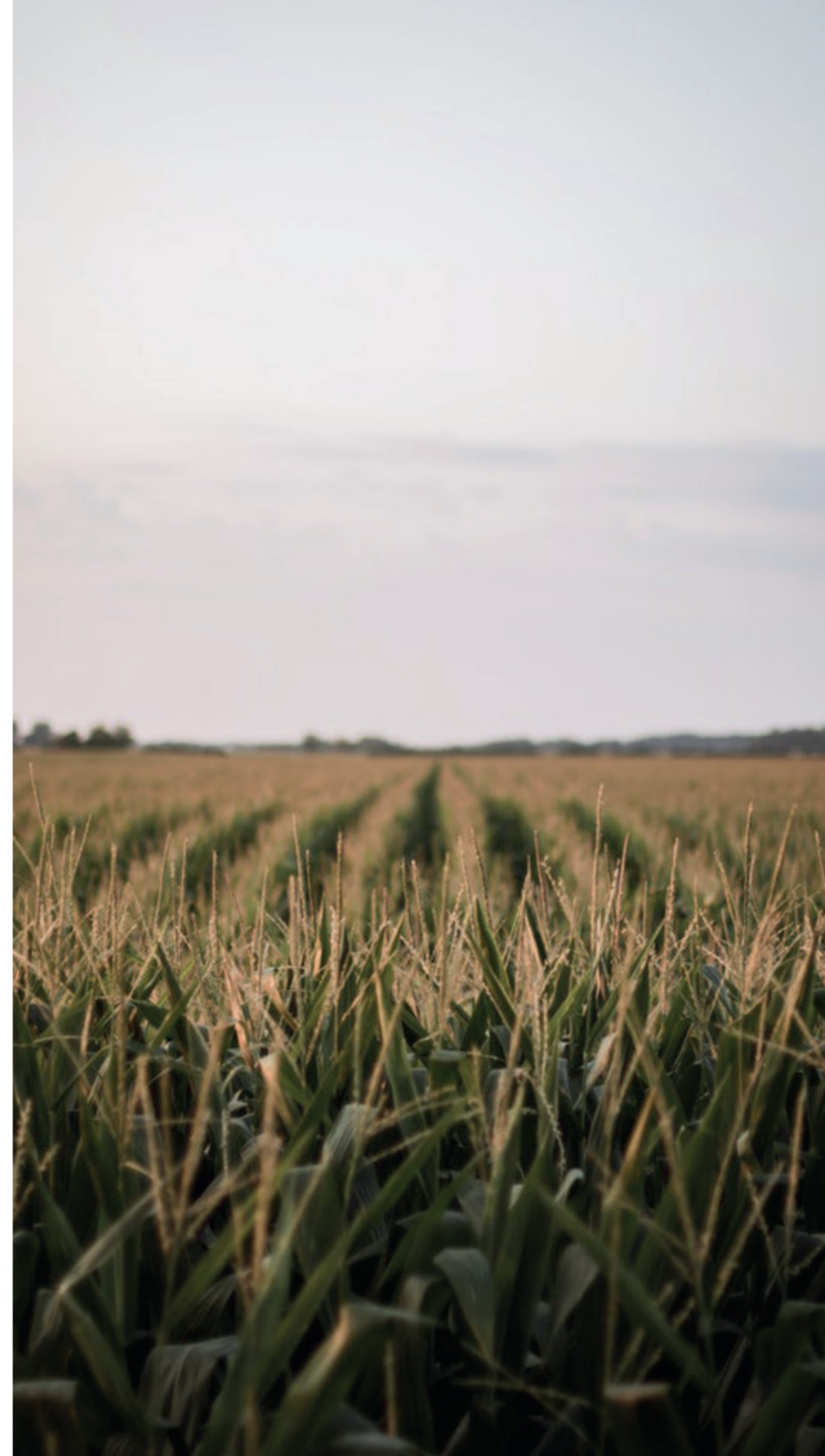
Manufacture of 100,000 t/year of organo-mineral fertilizers

Warehouse of **15.000 sqm** in plot of 70.000 sqm

Anticipated **investment of 27 million €.**

- 7 million € in urbanization and warehouse
- 20 million € in machinery and general installations

Entry into service **1st semester 2020**



Socio-economic elements of the business project

- Search for **alternative use to coal** in the Teruel mining basins in line with the decarbonisation objective set by the EU.
- Launch of **a business project in a province with one of the highest depopulation rates in Spain** in line with European rural development policy.
- Commitment to an agricultural project oriented to the contribution of organic matter in addition to fertilization and, therefore, aligned with the EU in the **search for solutions to combat land desertification.**



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