

Business case ID Card

Name of the company: Oleícola El Tejar, Ntra. Sra. de Araceli, S.C.A.

Country: Spain

Size of the business: 300 employees at Oleícola El Tejar and more than 80,000 farmer associates.

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Video link: <https://vimeo.com/143048188>

History

The story of the Oleícola El Tejar cooperative began more than 50 years ago. Having started with pomace oil extraction using traditional pressing methods, throughout the years Oleícola El Tejar has become one of the most important olive pomace mills in Spain.

In the eighties, the adoption of new techniques for pomace oil extraction led to a significant increase in the amount of waste obtained during the process. This waste, called 'alperujo', consists of a mix of olive pulp, skin, pit and water. In simple terms, this is crushed olives from which the olive oil has been extracted. Oleícola El Tejar first considered transforming this waste into biofuel. Instead, thanks to a successful Research & Development Programme, the cooperative developed new processes to create a wide range of products from alperujo and olive byproducts, including olive pulp used for animal nutrition, active carbon from the pit of the olive, organic fertilisers, and even solid fuels. 15 years ago, the cooperative also signed an agreement with the company FERTINAGRO, in order to turn the ashes produced in Oleícola El Tejar's power plants and drying plants into a raw material for fertilisers that can return to the olive grove.

With the commercial support of the SME NATAC Group Oleícola El Tejar established the Innovaoleo biorefinery in 2011. Thanks to this cooperation, they are now able to obtain high value bioproducts - destined for the pharmaceutical, nutraceutical, animal and cosmetic, and food industries - from agri-food biomass. This enables the cooperative to focus on olive pomace oil, and electricity production, while distributing the remainder of the byproducts to the biorefinery for their transformation into high value bioproducts.

What started with a single processing plant in El Tejar, in the Spanish region of Córdoba, where cooperative's head office is located, became now a large industrial complex, with seven more plants distributed among different Andalusian provinces, such as Córdoba, Sevilla, Granada and Jaén. The Cooperative, constituted in 1967 by a group of five cooperatives, currently has 250 members, representing in total 80,000 farmers working on a surface of 400,000 hectares.



Main activities

Oleícola El Tejar's activities focus on the holistic use of olive grove byproducts, through the chemical extraction of the oil contained in the pomace, and the production of bioenergy. The cooperative receives the wet pomace from its members, together with olive leaves and pits, coming from the first processing steps. After drying the alperujo with a mix of exhausted olive pomace, leaves, prunings, and olive pits, olive pomace oil is extracted, and the remainder of dry pomace transformed into pellets, for bioenergy production. Today, 50% of Oleícola El Tejar's turnover comes from the sale of electricity, while the rest of the income is related to pomace oil and olive byproducts. The total turnover in 2017 amounted to €88 million.

Market

With its 250 members, the cooperative Oleícola El Tejar has grown to become the largest company in this sector in Spain and in the world, processing and managing 31% of the national alperujo production. The main customers are the associated olive oil mills. However, for the sale of pomace oil, the company does not interact with the final consumer, but rather works with intermediaries - companies selling the pomace oil to final customers - both regionally and nationally. The process is the same for biobased products, which are marketed by the biorefinery Innovaoleo.

There are around 50 olive pomace mills in Spain that compete with Oleícola El Tejar, but the cooperative has established very close links with its customers over the years. However the cooperative must contend with seed oils, such as sunflower, rapeseed and maize, which enter the market at very competitive prices.

The main difference between Oleícola El Tejar and the rest of olive pomace mills is that the energy production facilities are 100% owned by the members. Without any external partner participating in the capital, management and consequently receiving part of profits, the only recipients of the added value generated are the owners.

Challenges and solutions

The main challenges faced by Oleícola El Tejar have mostly been linked to changes in the support provided to bioenergy production, and regulatory uncertainty in general. Moreover, the price of olive oil has not always been stable over time, and large peaks of demand or supply have affected the cooperative in the past.

Funding

One of the critical factors that led to the development of Oleícola El Tejar's present activities was the creation of new processes enabling the separation of olive by-product by centrifugation, leading to the production of bioenergy and bio-based products. To transform the increasing amount of alperujo collected with these new



processes, an important investment was needed, amounting to €88 million in total. As one of the major cooperatives in Spain, Oleícola El Tejar has a solid investment power thanks to the resources of its 250 members.

In 2017, the company also decided to invest €1.5 million to upgrade its plants and production processes. This investment made the plant even more efficient and competitive, while reducing its environmental footprint.

The cooperative has experienced significant growth in recent years, both in the number of members and in the amount of pomace received, meaning that continuous investment will be necessary to adapt processes and storage capacity. Looking to the future, meetings are being held with companies in the renewables sector and with investment funds for when the time comes to get adequate external funding. Venture capital is considered as an appropriate source of funding for renewable energy projects, such as the one developed by Oleícola El Tejar.

What makes this case innovative?

The alliance with the SME NATAC Group (and hence the creation of the Innovaoleo biorefinery) allows the company to access new knowledge, which would have never been possible otherwise. It also enabled Oleícola El Tejar and Innovaoleo to take part in new European research and development projects such as Innoleaf (for the integral use of the olive leaf and the creation of high added value products destined to the international market for animal nutrition) or Innolivo (development of innovative products from olive groves), in order to diversify their activities and to improve their current processes.

In addition, the investments with own funds made in 2017 to upgrade the plant, through the pioneering implementation at industrial level of the HYGROSCOPIC CYCLE technology in the 12.5 MWe Palenciana power plant, helped the cooperative to improve its efficiency and achieve key objectives such as:

- Eliminating the consumption of cooling water (more than 200,000m³ per year)
- Reducing energy consumption and adapting to the new standards of the European Energy Efficiency Directive
- Decreasing the use of additives
- Cutting down CO₂ emissions per kWh produced
- Recovering heat and chemicals from steam boiler's purge
- Increase plant availability and improve competitiveness

Key takeaways / Lessons learnt

The growing concern for climate change has progressively changed the mentality of consumers, who now demand a move towards more sustainable business models. Oleícola El Tejar's commitment to the valorisation of olive by-products and their transformation into electricity is the best example today in the Iberian Peninsula, having been a pioneer in providing technological solutions that have demonstrated a



high awareness for the conservation and protection of the environment. Therefore, the company could be described as a clear example of business success, which has developed over the years as a response to the needs of the sector, its partners, and the society.

