

## ARLEI S.A

*First tannery in Argentina to certify ISO 50001 with TUV Rheinland*



### Case Study Snapshot

<b>Industry</b>	Tannery
<b>Product/Service</b>	Crust Leather
<b>Location</b>	Las Toscas – Santa Fe
<b>Energy performance improvement percentage</b> (over the improvement period)	5 % improvement in electrical energy and 11,3 % improvement in losses of energy over 1 year (2022)
<b>Total energy cost savings</b> (over the improvement period)	USD 98652
<b>Cost to implement Energy Management System (EnMS)</b>	USD 21.225
<b>Total energy savings</b> (over the improvement period)	966.34 MWh
<b>Total CO<sub>2</sub>-e emission reduction</b> (over the improvement period)	1.533.5 Metric Tons (scope 2)

### Organization Profile / Business Case

Arlei S.A. is an Argentinean family-owned corporation founded in 1938 by Arturo Leiser. Leader in bovine leather manufacturing, made up of more than 1,300 collaborators, distributed in the production units of Las Toscas Plant, Don Arturo Plant and Salta Plant; Lanús Warehouse, Carcaraña Shed and the corporate offices at Capital Federal, Buenos Aires.

Our production is used for the automotive industry, footwear industry and furniture upholstery; we sell in 29 countries in Asia, Oceania, Europe, Africa and America. We also have a variety of by-products derived from the recovery of production waste, such as tallow for the cosmetics industry and trimmings for the food industry.

The company's leadership in the market is notorious: more than 25% of the country's bovine leather is processed in these tanneries, with an average of 10,000 hides processed per day.

We are characterized by the continuous improvement of the effectiveness and efficiency of our Management Systems to achieve highly competitive, environmentally friendly and energy efficient products and processes. Our management is framed in reference models such as ISO 9001, 14001, 26000, 50001 and IATF 16949 Standards.

Las Toscas Plant, the facility that represents the largest activity, has been certified to ISO 14001: Environmental Management since 2001 and ISO 50001: Energy Management System since 2021.

Our environmental management, based on the ISO 14001 regulation, has the company fully committed with the environment, with totally positive results. With the aim of always being at the forefront of environmental care, the

Las Toscas plant obtained a Gold Medal in 2019 in the Leather Working Group (LWG) audit, an international organization responsible for environmental certifications for the leather manufacturing industry.

Our Policies show the organization's commitment to prioritize the acquisition of more energy-efficient equipment, facilities and machinery; to promote a culture of rational and efficient use of energy throughout the company. The engineering team is constantly researching ways so that the products and processes are energy efficient, environmentally friendly, and highly competitive, also looking for new ways to obtain resources from waste, such as production of biodiesel from tallow, biogas obtained from sludge and reuse of water from rains.

***“ISO 50.001 certification reinforces our commitment to the development of sustainability. For this reason we are planning on implementing this standard throughout the Company”.***

*Tatiana Apstein, Sustainability team leader.*

## Business Benefits

---

Arlei, in its continuous search for new projects to achieve maximum energy efficiency, obtained global benefits all over the company, such as:

**Pioneer in ISO 50.001:** Las Toscas Plant is the first tannery in Argentina to achieve an ISO 50.001 certification. To achieve this certification, all sectors of the plant actively participated, led by their respective representatives, who made up the Energy Management Team, integrated by electromechanical, chemical and industrial engineers, master tanner, and other specialties. This team meets weekly to monitor indicators and update action plans to improve energy goals.

**Costs reduction:** In Arlei we have 3 energy consumptions: electricity, steam and diesel. Through the implementation of ISO 50001 we achieve the reduction of all of them, evidenced through our indicators.

Considering the improvement obtained in the period 2022, with respect to the Baseline (2018-2019), we achieved:

A 5% reduction in electricity consumption, due to:

- Drum replacement plan (machine where the process is carried out), for drums of greater capacity and energy efficiency.
- Plan for the replacement of iE1 engines with iE3 of greater energy efficiency.
- Replacement plan of the liquid agitation systems of the key stages of the leather production process, which consists of incorporating electric agitators instead of compressed air agitators. This plan was incorporated after a cost-benefit analysis where a repayment time of the investment of two years was obtained.
- Replacement plan for higher efficiency blowers in the biological oxidation system.

A reduction in energy losses thanks to the implementation of an action plan, as a result mainly of:

- The correct insulation of the ducts and accessories of the steam, and the work from the Design and Development area to reduce the working temperature in different stages of the process for the tanning of the leathers.
- Improvements in boiler efficiency, by incorporating sensors for monitoring important variables that influence combustion and consequently a considerable improvement in operational controls. In this case, we achieved a 11,3 % improvement in the period 2022 in comparison to the baseline.

All these improvements were accompanied by exhaustive training and awareness of all our ARLEI personnel and in particular those related to the follow-up of the SEUs (Significant Energy Uses) such as operators, machinists, contractors; to achieve the success of the implementation of the ISO and improvement of energy efficiency.

The initial cost of implementing the ISO 5001 certification includes the training of the members of the Energy Group 400USD, 1200 USD of external training in the standard for auditors, 13125USD of Working hours use from Energy Team and 6500 USD corresponding to certification. This adds up to a total cost of USD21225

**Sense of belonging:** For the collaborators, reaching the certification has managed to reaffirm the sense of belonging to the company, generating enthusiasm to continue with the necessary actions to continuously improvement, each one contributing from their place; For example, taking care of the consumption generated in each part of the process and also taking these good practices into daily life (outside the company).

**Commitment to standards:** Before starting the path to ISO 50001 certification, we already had ISO 9001/IATF 16949 since 2000, ISO 14001 certified since 2001 and LWG Environmental stewardship since 2019. Therefore, ISO 50001 was integrated into the management systems that we have already implemented, applying all the lessons learned (know how).

By having 14001 certified, the energy aspect was already being worked on. Following the guidelines of the standards, it was possible to promote improvements.

**Organizational culture:** Although Las Toscas is the plant that has this standard certified (which represents 80% of total consumption of Arlei Group), the other plants contribute equally to energy efficiency, having the same Policies and taking environmental friendly actions. Likewise, our suppliers are aligned with this police and are trained and conscious of sustainability, energy efficiency, and good manufacturing practices.

**Sustainability:** As part of our commitment to sustainable development and the pursuit of energy efficient practices, we contribute to the achievement of the Sustainable Development Goals such as SDG 13 Climate Action: starting with carbon footprint measurement and SDG 7 Clean and Affordable Energy: with the purchase and use of renewable energy in plants.

**Carbon Footprint:** During 2021 we worked on development of a Greenhouse Gas emissions inventory according to ISO 14064-1, to start measuring our Carbon Footprint. Through the inventory of CO2 equivalent sources, and the quantification of Greenhouse Gas (GHG) emissions, we were able to identify, plan and implement initiatives to mitigate these emissions, and thus contribute to the fight against global warming and improvements in energy efficiency.

We are aware that renewable energies are the way towards conscious energy consumption with less environmental impact and, for this reason; we rely on contracts for the purchase of 80% of renewable electricity with two wind energy sources suppliers.

In 2022 the reduction of CO2eq emissions for scope 2 was 46% compared to the previous year at Las Toscas plant site, as a result of the increase in the percentage of renewable energy in the electricity supply mix in 2022, being 80%, while in 2021 it was 67%.

The goal set for 2025 is to consolidate our position as a Carbon Neutral company, as regards to Scope 2 on purchased electricity and, in the long term, to continue with the challenge of reaching neutrality for Scope 1 and 3.

## Plan

---

We understand that, so as to be a sustainable organization, and achieve products that go beyond market requirements, we must have an organizational culture which guarantees the good care of our products, our production processes, and our stakeholders (such as: customers, workers, suppliers, shareholders, local community, and government entities), making sure each and every activity is performed with utmost responsibility in order to

achieve business profitability and sustainability through time, taking care of the society and the environment surrounding our organization.

The Board of Directors is aware that in order to stabilize in the market we need to focus our efforts on responsible management in the use of resources and the impacts of our activities on the environment.

The Board of Directors demonstrated its commitment to the development of management System allowing the creation of the Energy Management Team, approving action plans and granting all resources to achieve the proposed goals and objectives, following step by step all the development of the system and promoting continuous improvement.

Since we already had the experience of the successful implementation and certification of other ISO standards and their corresponding terminology, when we decide to implement ISO 50001, we were able to fully align it to our integrated management system. For this we use our knowledge, established tools and the robust base that we already have as a result of the common structure for these standards, to simplify the ISO 50001 implementation. For example:

- To meet the defined requirements, we rely on our software for the creation, management and control of documents and information.
- Planning and execution of internal audits, carried out by our experienced team of internal auditors following an annual plan.
- The leaders of each process of the organization, define, monitor and evaluate the dashboard of indicators, in order to take needed actions to achieve continuous improvements.
- Systematic training and awareness over all our collaborators, including its effectiveness evaluation.
- Methodologies for the analysis of risk and opportunity; compliance of applicable legal requirements and problem solving, among others.

The team worked hard creating the inventory of energy consumption, measuring and estimating consumption of all energy SEUs of the plant. In order to decide where focus resources, and be able to prioritize actions, determining SEUs, having as criteria the selection of the highest consumption and consumption with potential for improvement.

The implementation of ISO 50001 allowed a reduction in energy consumption, which brought cost savings and a differentiation from the competition for contributing significantly to climate and environmental protection. Also, the implemented actions to reduce the energy consumption were planned in order to mitigate the GHGs.

The entire organization was trained in Energy Efficiency, at all levels, through easy-to-understand videos and graphic billboards. After all the trainings, we conducted effectiveness evaluations to verify the understanding, which was also reflected by the changes of habit and contribution of all the personnel to achieving the proposed objectives.

We have a System of Ideas for Improvement, through which everyone can participate in presenting ideas that contribute to improving Energy Efficiency. The feasible and implemented ideas are recognized and rewarded to the originator; In this way, this tool constitutes a motivation and channel for everyone to contribute to the EnMS.

## Do, Check, and Act

The first step to begin implementation work on the certification of the standard was to train the personnel involved. These trainings were carried out by external personnel specialized in ISO 50001. Then, the energy management team (multidisciplinary) was created, made up of members from different areas of the organization.

This team met (and meets) weekly to advance the certification process. After each meeting, the news of the day and the objective of the next meeting are communicated by email to all the people involved.

The first activity carried out by the team was the creation of an inventory of energy consumption, where approximately 350 items were registered, referring to the consumption of electricity, biomass and diesel. This inventory records a range of consumption that goes from 10% of the total energy consumed to magnitudes that represent less than 0.01%, with an optimal level of detail within the control and measurement process.

Using this inventory, and taking as criteria for the selection of SEUs, those that represent the highest % of energy consumption, and/or those with potential for improvement; SEUS were defined. From the moment of implementation until now we keep the same SEUs, since they continue to be feasible for improvement.

Of the 350 energy items analyzed, 57 items (16%) are responsible for 80% of the total energy consumption of the plant; the energy team decides to select the 2 with the highest consumption: energy losses in boiler 2 and electrical energy consumption of blowers. The third USE to work on is reduction opportunities in electrical energy consumption of the compressed air system.

Once the SEUs have been defined, they are tracked through the comparison between the objective value, real value and base value (calculated from the baseline). Proposing actions and monitoring their progress to achieve the defined energy goals.

To choose the baselines from which to measure our energy performance and follow the indicators, different relevant variables related to energy consumption were considered and different periods of time were analyzed, until finding the one that best represents our energy consumption.

Data from 2018 and 2019 was selected for the baseline period, a sufficient duration to capture the variations in the relevant variable (production) based on seasonality and production cycles due to the markets served demand. 2020 and 2021 were not considered for this analysis, since the production of these years was atypical, because of the inconveniences that arose as a result of the COVID pandemic, with long peaks of low production, followed by fluctuations of high and low demand; resulting in production variables not relevant for our case.

Using the linear regression statistical method data normalization was achieved, in order to get the comparison of performance under equivalent conditions. In our case, the model was considered valid, taking into account the value of the coefficient of determination (R<sup>2</sup>), greater than 0,7.

For the improvement of each one, action plans were implemented. After implementing these actions, their effectiveness was determined, to evaluate the influence on the improvements achieved. To measure these improvements, indicators were measured against the Base Line, before and after the implementation of the action plans.

The formula used to calculate the energy savings was:

$$\text{Individual Energy savings \%} = \frac{\text{energy expected by baseline} - \text{actual energy consumed}}{\text{energy expected by baseline}}$$

The savings were measured in KWH, and in costs (USD), taking into account the cost of each energy.

In addition to the SEUs indicators, the energy team is in charge of monitoring other energy indicators that were already being implemented before the ISO 50001 standard, for example gasoil consumption and percentage of renewable energy consumption. In the same way, all reduction in energy consumption had a great positive impact decreasing our Carbon Footprint value.

Any deviation from the proposed objectives are analyzed using the 8D tool, which allows finding the root cause of the problem and taking the necessary actions to contain the problem and correct it, avoiding its recurrence.

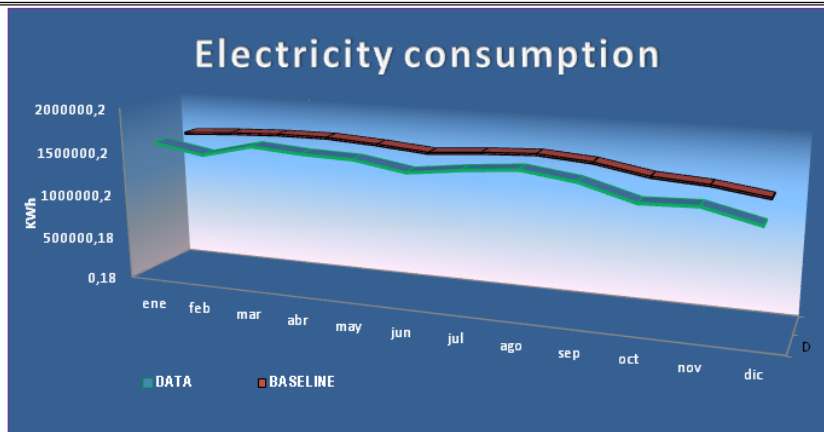
Massive training was given to all staff on energy efficiency, how to minimize consumption and use resources more efficiently. In addition, the personnel involved in the defined SEUS were promptly trained and made aware to operate and control these SEUs.

At Arlei, we have a team of highly trained internal auditors. We carry out internal audits in a planned manner in order to assess the conformity of processes, products and service activities, in all work shifts, with regulatory requirements and the requirements of the Management Systems implemented.



## Seguimiento y analisis de Indicadores

Periodo :	2022	Responsable:	E. Demartino
Fecha:	31/12/2022	Area:	Ingenieria
Objetivo:	18650705	Base:	18839096
		Real:	17946750
			5,0%
		Status:	CUMPLE



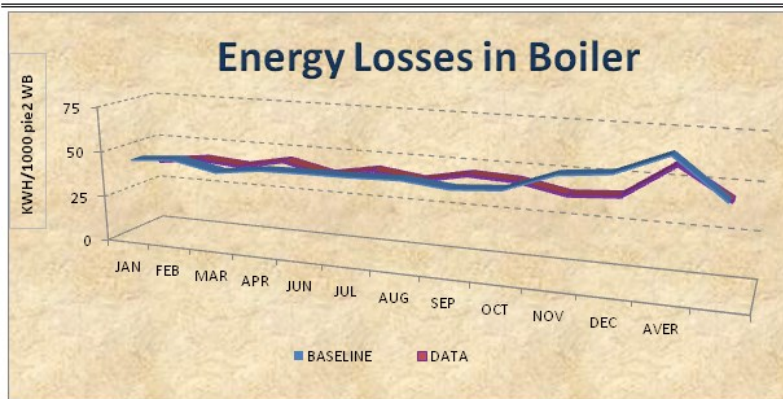
### Observaciones:

Se observa una mejora del 5% acumulado en el año, resultado de la implementación efectiva de las acciones propuestas según plan.



## Seguimiento y analisis de Indicadores

Periodo :	2022	Responsable:	E. Demartino
Fecha:	31/12/2022	Area:	Ingenieria
Objetivo:	48,61	Base:	49,10
		Real:	42,94
			11,3%
		Status:	CUMPLE



**Observaciones:**

Se evidencia una mejora sustancial en este indicador a raíz de la implementación del plan de acción

Monthly dashboard used by the Energy Team to evaluate monthly energy performance

*“We were able to reduce the energy intensity per sq. ft. produced for the third consecutive year, and even better, our percentage of renewable energy consumption increased, all these due to ISO 50001 implementation”*

*Alan and Viviana Leiser, Executive Management team.*

### Transparency

In 2020, when we obtained the ISO 50001 certification, we celebrated it by announcing it through our social networks (Instagram and Facebook). To ensure that all our collaborators were aware of the news, the information was sent by email to supervisors, chiefs and coordinators; who shared the news with the operators all over the plant sites, as well as our internal monthly magazine and site dashboards.

On the company's website ([www.arlei.com](http://www.arlei.com)), you can find all the information on certified standards, policies, and sustainability programs. We also publish an annual Sustainability Report and newsletters to communicate these themes.

For us it is important to keep our workers and stakeholders informed about what is happening in the organization, as per our slogan, “I am ARLEI”, we consider ourselves as a big family.

## What We Can Do Differently

---

Looking backward, we think it would have been better to start communicating the certification process earlier to all staff, using resources and efficient methods. While the awareness videos used were effective, they were released some time after the certified standard. Doing so sooner would have allowed us to have staff input ideas through the system of ideas for improvement.

On the other hand, having sectorized meters would have been useful when prioritizing action.

Our next steps are to maintain the certification and work with other SEUs to continue improving, foreseeing in each new job the sectorized consumption

In the future we will progressively expand the scope of ISO 50001 Standard throughout all of our sites, so that the entire company is aligned with this standard.