

NOVASCHOOL SUNLAND INTERNATIONAL FOCUSED ON SUSTAINABILITY AND ENERGY EFFICIENCY

About the school and our sustainability philosophy

Novaschool Sunland School is a private school with a British curriculum located in a rural environment in Cártama (Málaga), which covers all educational key stages (including the Early Years Foundation Stage) and provides students with British and Spanish qualifications.

Our quality and environmental management system are certified by **AENOR** (ISO 9001: 2015 and ISO 14001: 2015). All members of staff are involved in its implementation and a person in charge of quality and environment has been appointed to manage the whole system. The environmental policies, approved by management, are aimed at minimizing consumption, preventing pollution, reducing waste and using renewable energy in accordance with the **Sustainable Development Goals (SDG)**.

An **Environment Department** has been created that coordinates all proposed educational initiatives related to the environment and sustainability, as well as working closely with the **Quality and Environment Area** of the Novaschool Educational group to carry out energy efficiency actions and establish protocols for environmental issues. Other departments are also involved including our Communications Department in charge of promoting measures taken.

Actions taken towards sustainability

From the moment we decided to implement **ISO 14001**, our commitment to the environment has gradually increased with numerous objectives set by senior management and specific measures have been taken to reduce our impact on the environment specifically in regard to our electricity use, water consumption and use of paper.

Furthermore, in 2018 a **Smart School project** was initiated to identify environmental actions. A report was created highlighting suggestions for improvement including the possibility of photovoltaic energy.

- **Paper:** the use of paper in the school has been reduced with the following actions: awareness days, emails with good practice manuals, digitization of procedures thanks to the Novaschool myAgora+ group's own application (registrations, uniform shop, report cards, digital books, authorizations forms, newsletters, family communications, student certificates, optional services such as extracurricular applications), change of printers with personalized printing codes, awareness posters in the printing areas. In addition, boxes have been placed in the classrooms to collect the paper and be able to reuse it (on both sides) and finally recycle it. In addition, the paper used for photocopying and administration is recycled and environmentally friendly.
- **Energy:** Gradual change of lights throughout the school; lectures and workshops to raise awareness among students; emails with good practice manuals for staff; posters in all classrooms and rooms; installation of photovoltaic panels; construction of classrooms and school facilities to make the best use of natural light.

- **Water:** Installation of tap aerators; installation of double-load tanks; placement of posters in all bathrooms; awareness-raising emails and lectures and awareness workshops for students; procedure for the use of water from the lagoon (for irrigation use in the school).
- **Waste from the dining room:** In the dining room, waste is correctly separated (organic, containers, glass) and organic waste is properly managed. Packaging waste is also minimized thanks to agreements with our providers to deliver products with the minimum of packaging; there is an osmosis water source in the dining room so that students and staff can fill up their bottle and prevent plastic waste.
- **Km 0 concept:** with the purpose of reducing greenhouse gases (GHG) by using local suppliers to reduce the transport and use of fuel. In addition, school bus routes have been modified and implemented to avoid the private use of vehicles (both students and teachers) and contribute to reducing fuel consumption and having a positive impact on climate change.

In Novaschool Sunland International, we are aware of the impact these measures can have for us as an educational centre and the influence that we can exert on the educational community (students, families and staff) to promote change. We consider it to be vitally important to be able to teach values to the students about the environment, energy efficiency and sustainability.

Investments to achieve sustainability

In Novaschool Sunland International, the three major investment projects in the school year 2020-21 have been:

- **Photovoltaic panels:** The installation is made up of 4 rows of 15 modules each, and an additional set of 14 modules. The modules are 450 Wp which makes a total of 74 Astronergy brand monocrystalline cell technology modules, reaching a total power of 33.3 kWp. These modules have the approval of TÜV Rheinland (IEC 61.215 and IEC 61.730) and the CE certificate. The connection between the photovoltaic modules has been made by using MC4 type connectors, which already incorporate the modules directly from the factory. The photovoltaic modules have been installed in such a way as to avoid as much as possible the shadows that the obstacles located around them may project, using the SOUTH-WEST orientation. The modules have been attached to the roof by means of triangular structures, so that the plates are perfectly integrated.

The inverter converts the direct current generated by the photovoltaic generator into alternating current with the same characteristics as that of the building's network into which our system injects energy, which in this case is a three-phase system (mandatory for power generation facilities). more than 5kW) at 400V and 50 Hz. A HUAWEI SUN2000-60KTL inverter has been installed, and the total nominal power is 60 kW.

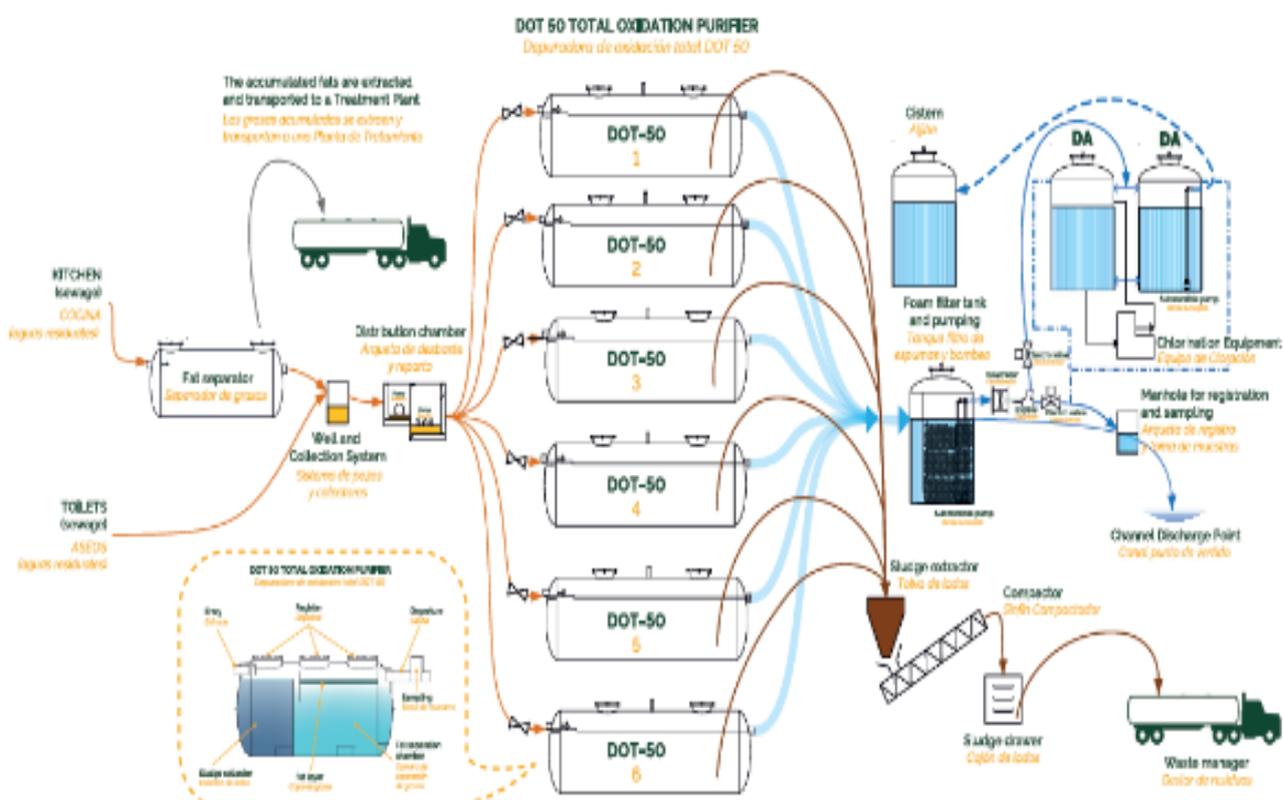
These facilities also serve as an educational resource to educate students in all stages of the responsible and sustainable use of energy.

This project has been carried out with an investment of **€44,029.36**.

- **Treatment plant:** Installation of a wastewater treatment plant by oxidation of organic matter aerobically in the activated sludge process, specifically the PRFC treatment plant where 6 of the DOT-50 type have been installed, which have a necessary treatment capacity for the estimated consumption in an educational centre of 1,000 people. This process implies the development under controlled conditions of a bacterial culture in suspension that, in addition to oxidizing the organic matter and reducing the nutrient content of the waters, generates a flocculating effect that allows the subsequent separation of phases in the secondary decanter, which achieves 95% BOD5 reduction, 90% COD efficiency and up to 95% efficiency in reducing suspended solids. Therefore, we ensure a responsible discharge to the area sensitive to eutrophication, such as the stream where we release the water. Therefore, we carry out outstanding environmental work for various issues:

- 1.- The **reduction of polluting discharges** since we manage to oxidize the organic matter and the nutrient content of the water.
- 2.- **Maintenance of the ecological flow**, since the resulting water will be poured into the stream directly from the treatment plant.
- 3.- **Agricultural use from the biosolids** generated and removed by an authorized management company so that they can be used for agricultural fertilization or recovery of degraded areas.
- 4.- **Coeducation in the classroom and in-situ**, where the school's students can visit and become aware of the importance of the environment.

This project has been carried out with an investment of **€248,825.85**.



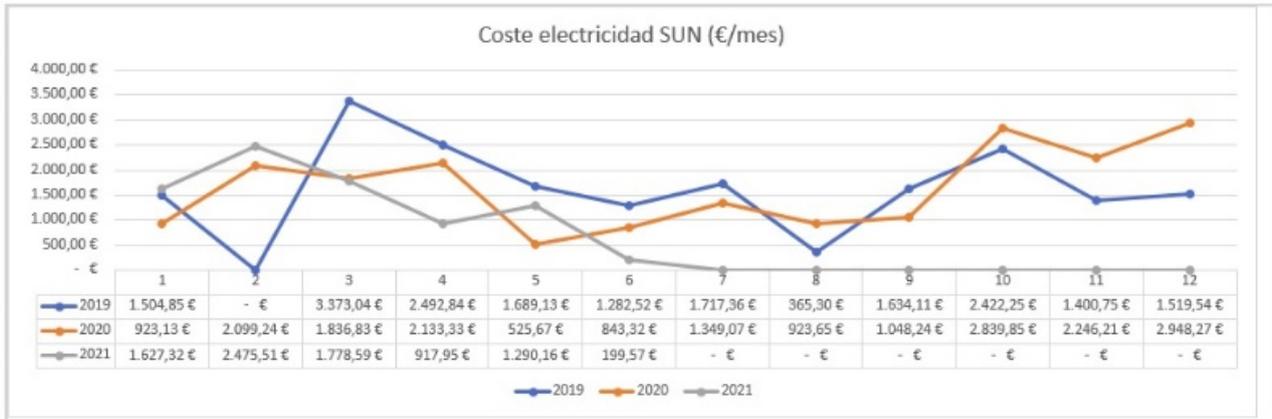
- **Agrosustainable farm**: educational space in which our environmental curriculum will be adapted to each course and key stage; in which projects will be developed according to the level of maturity of the students and always under the tutelage and technical direction of the teacher, applying educational innovation as a means of achieving a holistic development of the student body. This project focuses on the SDGs that can be developed in a natural environment such as: water, energy, climate action, underwater life and responsible consumption. Since it is necessary to be able to instruct our students to have sustainable habits from a very young age and to generate an awareness and respect for the environment and its conservation.

In order to introduce values and knowledge to students, it is necessary for them to have their own experiences and relate to their environment in a direct way, and for this we find it important for students to have first-hand experience of their impact on the environment.

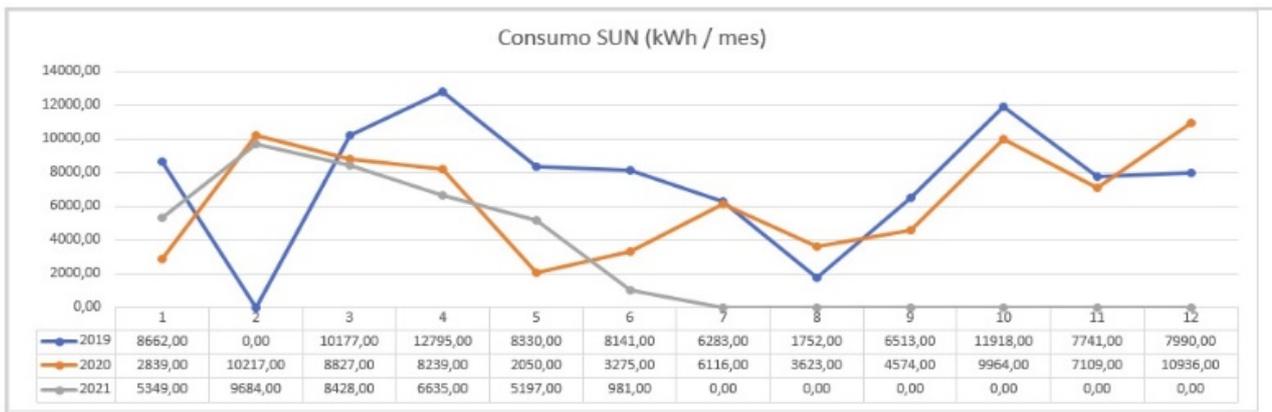
€400,000 has been invested in this project

Results and evolutions

The photovoltaic panels were installed at the end of February 2021, and we can see how in the months after the installation the electricity costs have decreased compared to the year 2019.



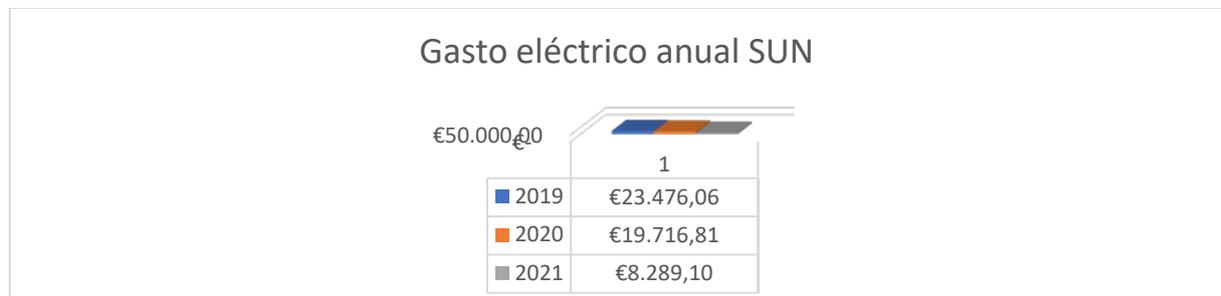
Cost of electricity in € in months and years (1) (2)



Use of electricity in kwh in months and years(1)(2)

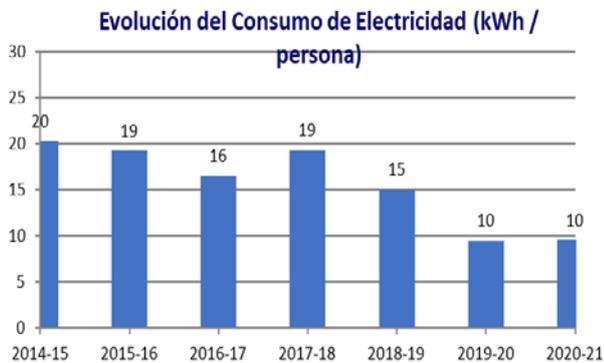
Note 1: the school was closed in March, April and May 2020 because of the pandemic.

Note 2: Data from July 2021 does not appear because of invoicing issues from our provider.



Changes to the electricity expenses since the installation of the photovoltaic panels

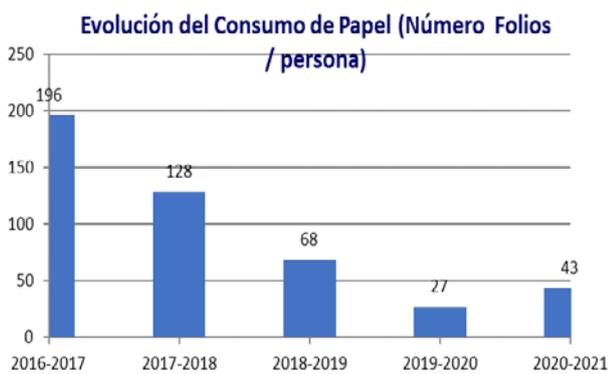
The environmental management system monitors the evolution of consumption taking into account the bills (energy and water) as well as the number of people who consume (staff and students). From these results, it can be seen that with all the actions undertaken, the values have decreased.



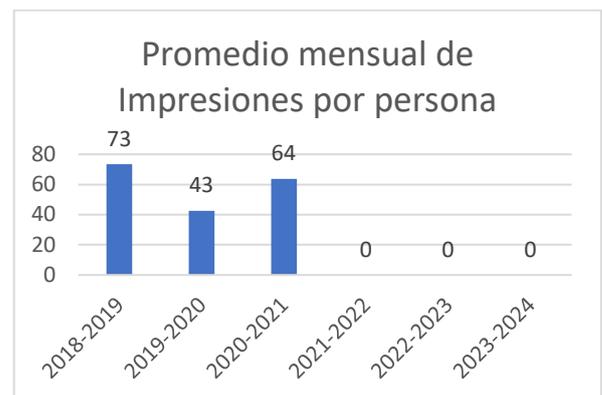
Average monthly use of electricity/person



Average monthly use of water per person



Average use of paper per person and per month (1)



Average n. of pages printed per person and per month

Data regarding 2021 may change as the year has not yet finished. There may be changes to the calculated averages.

Note 1: Averages showing the school year 2019-2020 show decreases because the school was closed for several months.