

Javier Sevilla Bernardo

Case ManBatt, new business model in photovoltaic energies

**Growth of the photovoltaic energy
market and renewable energies**

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There is a teacher's manual intended as a pedagogical complement.
It is available to teachers who use this document as teaching material.
editorial@esic.edu



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*Original case by Professor **Javier Sevilla Bernardo**, under the supervision of **Ximena Muñoz Vivas**. Developed as a basis for class discussion and not as an illustrative example of effective or ineffective management of an administrative situation. The data used in this case is based on public information from the company, obtained through its website and other sources of information, and complemented with information obtained in personal interviews.*

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It is 10:00 p.m. on 28 February 2021 and, at the ESIC incubator, the Lumio team is holding a crucial meeting with the aim of making decisions and adapting its business model to better fit its market. The meeting is generating some controversy, as a tipping point has been reached on how to include the company's new in-house battery, ManBatt, within the company's service offering, as, until now, it has only used batteries manufactured by third parties for its solar PV installations. Alexis and his team have to define the new business model.

The high price of energy and electricity in Spain, together with the great concern in society about climate change, makes renewable energies a key factor with potential growth in the very near future. In addition, the difficulty and slowness in finding qualified suppliers or installers, together with the difficulties in obtaining beneficial payment conditions for the consumer, make it difficult for both households and companies to switch to cleaner and cheaper energy such as solar energy. Lumio was created to solve this problem efficiently.

1. Context

Alexis de las Heras is the CEO of Lumio Solar. He studied a master's degree in sustainable energy in Denmark. Aware of the importance of solar energy, he focused on this type of energy during the last year of his degree. His first project came about when he convinced his parents to put photovoltaic panels on their house. In 2018, this will be the starting point for the creation of a new company focused on increasing the profitability of any solar project at the family level.

In 2019, Spain accounted for 90% of the photovoltaic installations in the European Union, from 288 MW to more than 4,000 MW; it led the European countries in the number of installations. In just a few years, Spain has become a leader in the photovoltaic sector, generating a very important source of income for the country. The permanent improvement of the regulatory framework has been key for renewable energies to become an important source of productivity and a boost to Spanish economic activity.

The *Plan Nacional Integrado de Energía y Clima* (National Integrated Energy and Climate Plan) (PNIEC) 2021-2030 aims to define the lines of action for the appropriate and efficient use of renewable energies and for them to promote the economy, employment, health and the environment. The *Ministerio para la Transición Ecológica* (Ministry for Ecological Transition) aims to install around 30,000 MW of photovoltaic energy by 2030 in order to meet the decarbonisation targets committed to the European Commission.

All of this provides the right backdrop for companies to be born in 2018, such as Lumio, which provide a quick and easy comprehensive design and installation process to all its customers.

Lumio's value proposition focuses on providing the best possible installation on your roof for both:

- **Companies:** who want to reduce their energy consumption from the grid, with a space (rooftop/solar) available. These customers tend to be medium-sized projects, around 10,000 kW per year.
- **Residential customers:** single-family residences, usually detached, requiring at least 4,000 kW per year.

Classification of customers by usage profile:

Profile 1	Profile 2	Profile 3
Owner of a villa with financial solvency.	House owner without financial solvency. It is important to note that Lumio facilitates financing to achieve savings from day one (through the help of banks to finance the installation).	Homeowners in a property with a shared roof. Lumio offers solutions for sharing the installation between the community of owners.

Source: Own creation.

This is a major innovation in the market because Lumio allows its customers to give away watt-energy and make a profit from it, thus entering into a peer-to-peer (P2P) collaborative economy. Normally, any solar power deployment project needs to consume all of the PV energy produced to be truly profitable.

Faced with this problem, Alexis came up with an innovative proposal, a fully liberalised P2P market for electricity production (since nothing similar existed in the market before). He created his own subject in his master's degree called Electricity Market Futures and studied everything related to the P2P market *in order* to apply it to Lumio. In 2018 it was not possible, but today, in 2021, it is possible to feed surplus solar energy produced through a trading company into the electricity distribution network. A very low percentage of what is produced is remunerated,

but Lumio, with its management app, makes it possible to turn the surplus produced into photovoltaic energy by transferring it to other owners who need it.

Another great added value of Lumio is that it works fully digitised, which saves time and costs to the benefit of the customer. They use online optimisation software that allows the calculation of the most cost-effective and sustainable installation. Their turnkey service offers an unbeatable installation guarantee (25 years for the panels and 5 years for the installation), and maintenance that includes studies of better consumption habits, appropriate electricity tariffs, etc.

The matrix for comparing services with respect to their competitors, local installers, producers or distributors (Endesa) and engineering companies (Powen) would be as follows:

	Lumio-Solar	Local installers	Endesa	Powen
Communication with the client	Mobile app software of one's own design. P2P collaborative economy allows one to make a profit by reselling own energy to customers.	Low. Not part of the search for efficiency.	Lack of proximity and adaptability.	Vulnerable to demand.
Installations	High scalability at competitive prices.	Low scalability.	Agreements with local installers. Low flexibility and high price.	Difficult to scale.
Installed equipment	Highly scalable and in-house purchasing management. Now with own batteries.	Low purchasing power at scale. High workload; low efficiency.	Massive purchases, not adapted to the customer.	Expensive and late projects.

Source: Own creation.

The channels that Lumio actively uses to communicate and access its customers have been:

- Suppliers or installers who derive projects through agreements with commission on invoiced projects.
- The Habitissimo.es website, with which a marketing agreement has been signed.
- Four sales partners belonging to car charger companies that actively refer customers to Lumio (www.cargatucoche.com, www.recargagig.com, www.aziraelectricidad.com, www.enchufauto.es).
- Web channel www.lumio.solar.
- References and recommendations from existing customers (word of mouth).

At present, Lumio does not have any full-time sales staff. The work process once a client has been closed is as follows:

1. They contact their client and design the installation: in 48 hours they have the best solution for any home. They use digital design tools combined with a self-developed algorithm.