

# ENERGY. TEACHER'S MANUAL

## LEVEL 3

### Energy in the hairdressing salon II.

The objectives of this topic are mainly that students know how to look for legislation concerning the energy installation required by the hairdressing salon and relate it to sustainability, that they learn how to calculate the energy consumption of the salon relating it to the working tools and that they know advanced measures to achieve a better use of energy and, consequently, the reduction of consumption. Finally, but also fundamentally, they learn to identify the cost of investments, sources of financing and access to European subsidies for sustainability.

In addition to this manual, two other manuals are available:

- The teacher's resource kit, where you will find activities, PowerPoint presentations and other tools to use in the classroom.
- The student handbook, in which they have all the information to prepare in advance or to use during the classes.

#### **General objective of the theme**

Identifying legislation, calculating consumption, learning about innovations and researching financing for energy installations.

#### **Knowledge**

- Identify legislation on energy installations.
- To understand the relationship between home automation and energy saving.
- To learn about innovations in the field of energy saving.

#### **Ability**

- Calculate the energy consumption of the room according to its variables.
- Assess the feasibility of installing other advanced techniques to reduce consumption.
- Search and find grants and subsidies from different areas for energy efficiency in the salon.
- Group discussion to share ideas and reflections, evaluating results.

#### **Attitude**

- Be critical of legislation on energy installations.
- Propose advanced ways to reduce energy consumption.
- Evaluate results.

### **Additional learning outcomes**

Additional competences in terms of knowledge, skills and attitudes are captured here, as some learners have a different pace of work or level of understanding. It can also be applied to differentiate between different levels of VET learning.

By the end of the topic, higher ability learners should be able to:

- Calculate in detail the consumption of the room and propose measures for its reduction based on these calculations.
- Propose new advanced methods to reduce energy consumption in classrooms.

By the end of the topic, lower ability students should be able to:

- Calculate the energy consumption of the different equipment and tools used in a hairdressing salon and make comparisons.
- To be familiar with most of the methods proposed to reduce energy consumption in classrooms.

## **PROGRAMMING AND TIMING OF THE THEME**

In this topic we focus on energy legislation, energy costing, advanced methods of reducing consumption and financing investments in energy installations.

**Total hours** = 20-25h.

The programming has been carried out considering that each session is of one hour, however the subject is adjusted to 50 min. to allow the reception of the initial students and the recapitulation of the activities developed at the end.

### **Purpose of the theme:**

- Students should be aware of the characteristics of energy suppliers in their area.
- Students know how to select the most suitable energy supplier for the economic management of their salon and for the environment.
- Students recognise options for reducing energy consumption in hairdressing salons.

### **Planning:**

<b>Approximate scheduled time (total hours 20-25h = 20-25 sessions of 1 hour)</b>		<b>What</b>	<b>How</b>	<b>Tools</b>
Session 1	5 min	Introduction on the importance of legislation to tackle climate change.	Brief explanation by the teacher.	

	15 min.	Video on China's energy future plans.	Video viewing 1. Refer to the teacher's resource kit.	Projector, digital whiteboard or computers.
	30 min.	Discussion of the video.	Student-centred. The teacher guides and asks questions about the past, present and future of energy facilities in China.	Blackboard.
Sessions 2 and 3	70 min.	Video on energy policies.	Video viewing 2. See the teacher's resource kit.	Projector, digital whiteboard or computers.
	30 min.	Discussion of the video.	Student-centred. The teacher guides and asks questions about the students' opinions on the proposed measures.	Blackboard.
<b>Approximate scheduled time (total hours 20-25h = 20-25 sessions of 1 hour)</b>		<b>What</b>	<b>How</b>	<b>Tools</b>
Sessions 4-6	20 min.	Theory:  Introduction to the subject and legislation.	Teacher's presentation.	Power-point. See the teacher's resource kit. Whiteboard and projector or digital whiteboard.
	80 min.	Work in activity 1	Students work individually. The teacher interviews the students in the process, guiding them in the search.	Computers or smartphones.
	50 min.	Discussion on activity 1.	Student-centred. The teacher guides and asks questions about the students' views on energy transition legislation and encourages comparison between locations.	Blackboard.

<b>Approximate scheduled time (total hours 20-25h = 20-25 sessions of 1 hour)</b>		<b>What</b>	<b>How</b>	<b>Tools</b>
Session 7	50 min.	Theory:  Calculate energy consumption.	Teacher's presentation.	Power-point. See the teacher's resource kit. Whiteboard and projector or digital whiteboard.
Session 8	15 min.	Reminder on the calculation of energy consumption.	Reading of the same and information and instructions on how to carry them out.	Blackboard.
	20 min	Work on activity 2	Students work on a one-to-one basis. The teacher questions the students in the process and guides them if he/she observes errors.	Activity sheet
	10 min	Sharing of activity 2, correction of results.	The teacher asks students to come to the board and show their calculations.	Blackboard.
	5 min	Presentation of activity 3.	Reading it and putting forward opposing points of view to generate debate.	Blackboard.
Sessions 9-11	20 min	Activity 3: students discuss cost-effectiveness and the problem of waste.	Student-centred. Teacher guides and corrects if necessary or asks questions to activate dialogue.	Blackboard.
	80 min	Work on activity 4	Students work on a one-to-one basis. The teacher interviews the students in the process, guiding them in the search.	Computers or smartphones.
	40 min	Sharing of activity 4.	Students present their findings and a ranking is created with the information provided, discussing, in addition to	Computer or digital whiteboard

			power, which tools are the best in terms of quality/price/efficiency.	
	10 min	Work in activity 4	Comparative calculation of annual profitability and savings.	Computers or smartphones.
Session 12	20 min	Work on activity 5	Comparative calculation of annual profitability and savings.	Computers or smartphones.
	30 minutes	Discussion on activity 5.	Student-centred. Teacher moderates and collects key ideas on the board.	Blackboard.
Session 13	50 min	Theory and practice:  Explanation and demonstration of the use of the consumption calculator.	Presentation and demonstration by the teacher with the participation of the students.	Excel. See the teacher's resource kit. Whiteboard and projector or digital whiteboard.
<b>Approximate scheduled time (total hours 20-25h = 20-25 sessions of 1 hour)</b>		<b>What</b>	<b>How</b>	<b>Tools</b>
Session 14	45 min	Video on home automation.	Video viewing 4. Refer to the teacher's resource kit.	Projector, digital whiteboard or computers.
	5 min	Approach to activity 6.	Reading it and providing information and instructions on how and where to look for information.	Blackboard.
Sessions 15-17	150 min.	Work in activity 6	Students work on a one-to-one basis. The teacher interviews the students in the process, guiding them in the search and proposing solutions.	Computers or smartphones.
Sessions 18 and 19	100 min.	Exhibition of the presentations.	Student-centred. Teacher asks questions if necessary.	Projector or digital whiteboard.
	70 min.	Theory:	Teacher's presentation.	Power-point. See the

Sessions 20 and 21		Innovation and efficiency to reduce consumption.		teacher's resource kit. Whiteboard and projector or digital whiteboard.
	30 min.	Activity 7: debate. Advantages and disadvantages of relocation.	Student-centred. The teacher moderates and collects the best ideas on the board.	Blackboard.
Session 22	40 min.	Theory:  Cost of investments. Financing and subsidies.	Teacher's presentation.	Power-point. See the teacher's resource kit. Whiteboard and projector or digital whiteboard.
	10 min	Approach to activity 8.	Reading it and providing information and instructions on how and where to look for information.	Projector and/or digital whiteboard.
Sessions 23 and 24	70 min.	Work in activity 8	Students work on a one-to-one basis. The teacher observes the students in the process, guiding them in the search and suggesting further searches if necessary.	Computers or smartphones.
	30 min	Sharing of activity 8.	Students present their findings. The teacher prepares a compilation summary table during the process.	Computer and/or digital whiteboard.
Session 25	50 min.	Theoretical test.		

# ENERGY.

## LEVEL 3

### Energy in the hairdressing salon II.

In the previous unit we have studied how to select a green energy supplier that does not pollute by using renewable sources, we have also learned that it is our duty to the environment to make efficient use of lighting systems, air conditioning and salon equipment, through small gestures such as turning off the light when it is not necessary or closing the windows when the air conditioning is on, as they do not cost any effort or money and yet they save energy which is beneficial for the environment, but also for the professional's pocket.

Keep in mind that air conditioning and lighting alone make up a high percentage of the hairdresser's expenses, the other part of the bill is mainly due to the use of tools and appliances. We recommend that you follow the practical advice given in this unit to reduce your electricity bill; for example, if you are going to buy an electrical appliance, don't forget to check the energy labelling because, with equal performance, by choosing one of the higher categories (A or B) you can achieve significant energy savings in the medium and long term.

Finally, don't forget to use water responsibly, not only because excessive water consumption is not sustainable, but also because the fact of having to heat it also entails a high cost. With all these measures, energy and economic savings are guaranteed, although we could apply many more.

In this topic you will learn about current legislation to achieve a more sustainable environment, we will provide you with an energy consumption calculator so that you can monitor your own spending, we will go into other higher level measures to achieve savings and optimize your salon facilities and finally, you will learn about the investments you would need to implement improvements, as well as financing options and possible subsidies to transform your salon into a truly sustainable salon.



1. Legislation.
2. Calculate energy consumption.
3. Digitisation for savings.
4. Innovation and efficiency to reduce consumption.
5. Cost of investments. Financing and subsidies.

## **1. LEGISLATION**

Due to the importance and threat of climate change, all international and national institutions have issued a series of regulations to promote what is called "energy transition", i.e. the replacement of non-renewable energies with cleaner and more sustainable ones. In this sense, and in order not to bore you with too much data, we will try to make an outline of the most important standards at global, European and national level. You should bear in mind that the use and generation of energy is something that concerns all countries, since the economic growth of societies and the preservation of the environment depend on it. Therefore, the greater the commitment of the different governments, political parties and citizens to respect the established laws, agreements and pacts, the more equitable, supportive and sustainable economic growth will be. We must banish the idea of "as I can afford it, I abuse resources".



Bear in mind that laws are constantly being modified and that, in addition to the legislative framework we have just mentioned, there are also regional and even municipal regulations. Therefore, when you are going to open your hairdressing salon, do not forget to check the legal requirements regarding electrical installation and energy saving that are in force and applicable, as in addition to complying with the law, it is possible that you may find financial aid or subsidies to improve the energy efficiency of your salon.

## 2. CALCULATE ENERGY CONSUMPTION.

We have been making continuous references to the importance for the planet and for future generations that our economic growth model is sustainable and that the energy we use comes from renewable sources and is as clean as possible. But if, unfortunately, you are still one of those who think that "tomorrow does not matter but only the here and now", we are going to show you that the energy efficiency of your hairdressing salon or home is going to save you a lot of money.



In other topics you may have used different tools or calculators to measure your carbon footprint, water consumption or the concentration of hazardous chemicals in cosmetics. What we propose now is a tool to know exactly the energy consumption in the hairdressing salon and its economic cost. It is true that the bills from the electricity companies sometimes show us statistics of our expenses and we know that electrical

appliances such as the washing machine or the heating are very expensive in terms of energy consumption. But if we really want to save money, we have to know what each and every one of the equipment we have in our salon consumes and, from there, look for cheaper alternatives.

To make energy calculations, it is necessary to know how electricity is quantified and to know that it is calculated in kilowatt hours (kWh): 1 kWh is the energy consumed by an electrical appliance with a power of 1000W for one hour. When we see an appliance that runs on electricity, such as a hairdryer or an iron, it usually has a label indicating its power, which is the number of watts (W) consumed by the appliance. For example, if you look at the Dyson supersonic hair dryer, you will see on the label on the handle that it consumes 1600 watts (W).

In this topic you will learn how to calculate the consumption of electrical appliances in your hairdressing salon or studio. Let's start by studying the consumption of a series of light bulbs in a hairdressing salon:

Step 1	<p>If there are nine bulbs in a room and each bulb is 100W, the total wattage consumption of the lights can be found by multiplying the number of lights by the watts they consume.</p> <p>Consumption in W (9 bulbs) = <math>9 \times 100W = 900W</math></p>
Step 2	<p>To find out the watts per hour, we need to know how long they are on for. Let's consider that they are on for 9 hours.</p> <p><math>900W \times 8h = 7,200 \text{ Wh}</math></p>
Step 3	<p>Now, to determine how many megawatt hours this is, as this is the variable that appears on electricity bills, we divide the number of watt hours by 1,000,000.</p> <p><math>7,200Wh \div 1,000,000 = 0.0072MWh</math></p>

To calculate how much energy the room consumes in lighting per year, we have to calculate how many hours they are on in that period of time. To do this, we need to calculate the number of hours they are on per day, the number of days they are on per week and the number of weeks per year.

Step 1	<p>We calculate: the lights are generally on for eight hours each day five days a week and on Saturday only for 4 hours:</p> <p><math>(8h/day \times 5) + 4h = 44 \text{ hours/week}</math></p>
Step 2	<p>If we consider that about 40 weeks a year are worked, we have:</p> <p><math>44h/s \times 40 = 1,760 \text{ h/year}</math></p>
Step 3	<p>Finally, to know the energy consumed in a year, we must multiply power x hours per year:</p> <p><math>0.0072 \text{ MWh} \times 1,760 \text{ h/year} = 12.672 \text{ MWh/year}</math></p>

Now we want to calculate the economic cost that this means for the hairdressing salon, for which we need to know the price of MWh. As of January 2023 this price is €85.80, so we would make the following calculation:

Step 1	<p><math>12.672 \text{ MWh/year} \times €85.80 = €1,087.3</math> annual expenditure for the hairdressing salon bulbs alone.</p>
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or a remote control, you can effortlessly control the entire system of your salon from anywhere, allowing you to program each parameter exhaustively to suit your requirements and needs.

Home automation will allow us to manage multiple elements, thus contributing to savings and, therefore, to sustainability, for example:

- Intelligent lighting systems can adapt the level of artificial lighting to variations in sunlight, adjusting it automatically. In the same way, they can act on awnings, blinds and/or curtains, making it possible to make the most of sunlight without increasing the cost of air conditioning.
- Motion sensors, located in transit areas such as corridors, toilets or storerooms, detect the presence of people and only illuminate when necessary.
- Controlling the switching on and off of lights on the premises prevents lights from being left on and causing unnecessary expenditure.
- Intelligent climate control systems adapt the indoor temperature according to the outside temperature, time of day, area or the presence of people.
- Time schedulers allow appliances to be started at the most convenient time based on tariffs.

With all this in mind, installing a smart system in your salon could be a great investment as, with a small initial outlay, considering that the cost will always depend on the level of home automation you decide to install, you could quickly recoup your investment through savings and, at the same time, respect the environment.

#### **4. INNOVATION AND EFFICIENCY TO REDUCE CONSUMPTION**

Not all halls lend themselves to the highest level of sustainability and savings due to the building in which they are located, but there is some potential for reducing consumption in any premises without, of course, negatively affecting the comfort of customers and employees. To achieve this, it will be necessary to promote responsible habits and actively involve all users.

In this section we will compile advanced consumption reduction measures, some cheaper and easier to implement than others, but all with the same ultimate goal: to control and reduce costs while protecting the environment.

**Anti-heat or anti-cold window films:** solar window films allow you to enjoy the light without the sun heating up the room as they have the ability to reject up to 90% of the sun's energy and reduce the incidence of UV rays by 99%, thus preventing discoloration of the elements behind the glass, preventing glare and, if desired, also providing privacy.

Thermal foils are able to reduce heat loss in the glazing, thus saving on heating costs and improving the quality of the glazing.

**Thermal insulation windows:** if, instead of using vinyl, you decide on a larger renovation, a very interesting option is thermal insulation windows. They are high-tech glasses with a permanent magnetronic coating, ideal for large windows or windows with high solar exposure, which achieve a great thermal insulation of cold and heat without blocking the passage of sunlight and maintaining the views.



#### **Use Energy**

**Star labelled IT equipment:** if you are buying a computer or printer for your salon, make sure it has the Energy Star logo; for example, printers are 25% more efficient. Also, don't forget other ways to save energy, such as switching off automatically after a period of non-use, setting the screen brightness to a low level and choosing dark images for the wallpaper, without animations in the screensaver.

**Reduce water consumption:** the issue of reducing water consumption is dealt with in a separate unit, however, it is unavoidable to include it also when we talk about energy as it implies a significant energy saving due to the reduction of the consumption necessary for heating or pumping, therefore, do not use hot water if it is not necessary and only consume the water you need, avoid leaving taps open that deplete the hot water reserves.

**Hire a company specialized in energy consultancy:** Beyond home automation, which presents a mixture of automation and comfort systems that we have seen can be great allies when it comes to saving energy, there are companies specializing in optimizing the nominal consumption of energy in various installations; these companies can modify and improve the installation of your salon (electricity, water, gas, heating, etc.) on 4 levels, the sum of the 4 being the greatest optimization of resources:

- **Counting:** this is the first and most basic level of any meter, which accumulates the totals consumed in Kw/h, volume in m<sup>3</sup> of water or gas.
- **Measuring:** through electronic analogue/digital numerical control systems, we can have a real-time reading of the instantaneous or accumulated consumption in time bands of our installation: temperature, current, voltage, power, harmonic distortion, water volume, etc., which indicate that the installation is working properly.
- **Signaling:** is the local checking, on LED screens, display units, touch screens or remotely on telephones, computers and monitoring apps, of the on/off status of the circuits, fault warnings, alerts for exceeding minimum and maximum consumption thresholds, etc.
- **Sending:** is the installation of actuators, relays and on/off switches for any of our electrical, water, heating, cooling systems in accordance with the signaling of the previous level. These components prevent accidental free consumption elements or eventual failures that are not controlled.

**Thermal and/or photovoltaic solar panels:** if the building that houses your premises allows it, the installation of solar panels is a reliable, economical and ecological option. From the simplest to the most complex, there are the following types:



- Solar thermal panels consist of collectors that capture the sun's heat and feed it to a grid of heat carriers consisting of glycol and water. A grid of pressurized water pipes from the grid passes through this grid and is heated. They are usually accumulated in a tank or accumulator of 300 liters and have the capacity to maintain the temperature at night. They can heat water up to 80°C which, when mixed with cold water, can perfectly supply the tasks of the hairdressing salon.
- Solar photovoltaic panels are composed of silicon collectors that exchange photons of light, releasing electrons and generating a continuous charge. This charge could be stored in a battery system but this is costly, its most common use is to power the equipment on the premises through the use of an inverter/alternator. In addition, by using a bi-directional meter, the current generated and not in use can be "sold" to the local electricity grid, thus reducing the electricity bill. In this way we achieve significant energy savings, zero ecological impact and the possibility of generating profits.
- Hybrid solar panels. They combine the two previous technologies. They generate electricity and heat water using the sun's heat and photonic energy. They are currently much more expensive although they are on the rise and will moderate in price.

**Water heating:** in addition to traditional water heaters, such as gas or electric water heaters, we can find more sustainable improvements on the market that will reduce your electricity bill:

- **Water pre-heaters:** this consists of a tank similar to the water heaters we are used to, but it incorporates several resistors inside, with which cold water can be heated up to +15 degrees directly with direct current from photovoltaic panels without the need for an inverter. It can also be powered by a 230V alternating current resistor if necessary. The advantage is that this pre-heated water, when it reaches the boiler,

heat pump or water heater, does not need much energy to bring it up to the desired temperature and, therefore, the savings are considerable.

- **DHW or aerothermal heat pumps:** their operation is similar to the compressor/evaporator of an air conditioner, compressing and evaporating a refrigerant liquid inside a water tank and thus heating it. These systems can even be connected to air-conditioning splits, which also provide air-conditioning. They work by extracting heat energy from the outside with compressors to the evaporation circuit, the higher the outside temperature, the more efficient the system will be, heating water and cooling rooms with a very low electricity cost. They are the most efficient in energy expenditure (around 360% compared to a normal thermogenerator) but it is true that at very low temperatures (below 5°C) their energy performance begins to reduce, so they are not the most suitable system for very cold climates at the moment.

**Wind generators:** If we replace the solar panel with a turbine and a generator that converts the movement into electricity, we obtain a system with the same components as the photovoltaic installations and with the same advantages. Wind generators are most commonly used in places with little sun and a lot of wind and there are mini turbine models that can be placed on any terrace or roof.

Since photovoltaic solar panels and wind generators have similar installations (alternators, inverters, batteries), a combined configuration of both technologies could increase profitability exponentially, with wind making up for the lack of sun and vice versa. Electricity generation, water heating, sustainability and an ever-increasing payback period make these energy-saving technologies the immediate future.

**Change premises:** does it seem like an irrational decision? Maybe it is... or maybe not. In recent years, regulations have established energy efficiency and renewable energy requirements that must be met in the construction and renovation of buildings. All buildings constructed from December 2020 onwards must be "nearly zero consumption", so any newly constructed premises will be more efficient and consume much less. If you opt for this solution, take into account the building's energy rating, natural lighting and good communication so as not to lose contact with your customers.

## **5. COST OF INVESTMENTS. FINANCING AND SUBSIDIES (EUROPEAN AND LOCAL LEVEL).**

As you have already learned, there are many alternatives and innovations that currently exist to improve the energy efficiency of buildings and companies. You have also analyzed your energy cost structure and which of your installations or equipment you should modify, but of course, the problem is always the same:

- Is it profitable to undertake such investments in my hairdressing salon?
- How much will it cost me?
- Where do I get the money for this transformation?

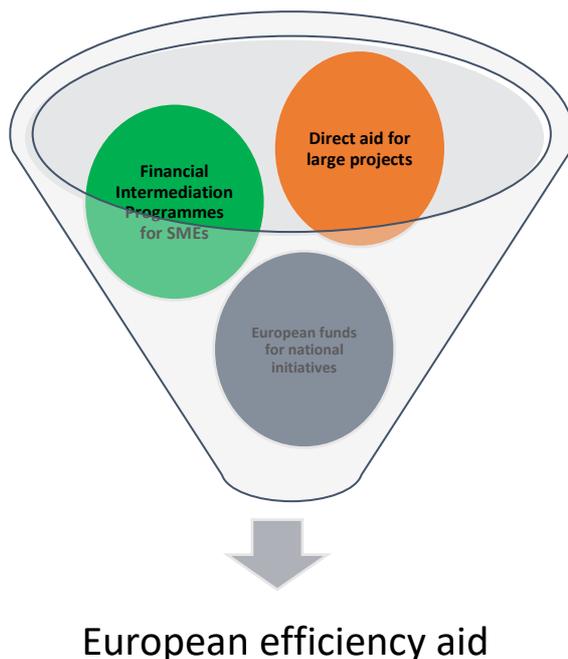
### **5.1 Return on investment**

We trust that by now you are convinced that ecology and sustainability are always profitable from the point of view of the well-being and development of mankind. That's why we know that your concerns are economic, i.e. you probably think that you don't have enough resources to afford these investments in renewable energies and therefore, although you would like to "do something", you don't dare. Let's see if we can help you.

In life there are times and situations that are more or less prone to take on new challenges, and in these times we live in there is a general clamor that we have to act NOW to slow down climate change, with Europe being the continent that is promoting sustainability the most. In addition, Europe's energy security is seriously threatened by our dependence on third countries for oil and gas imports. The EU aims to reduce greenhouse gas emissions by 40% by 2030, with a 27% share of renewable energies.

In this context, the European Commission has launched several programs to help improve the energy efficiency of buildings. With 40% of energy consumption and 36% of pollutant emissions in member countries being in our homes and premises, having efficient buildings means reducing pollutant emissions by consuming less energy, lowering energy bills for consumers, and generating competitiveness and jobs.

These European energy efficiency subsidies are classified as follows:

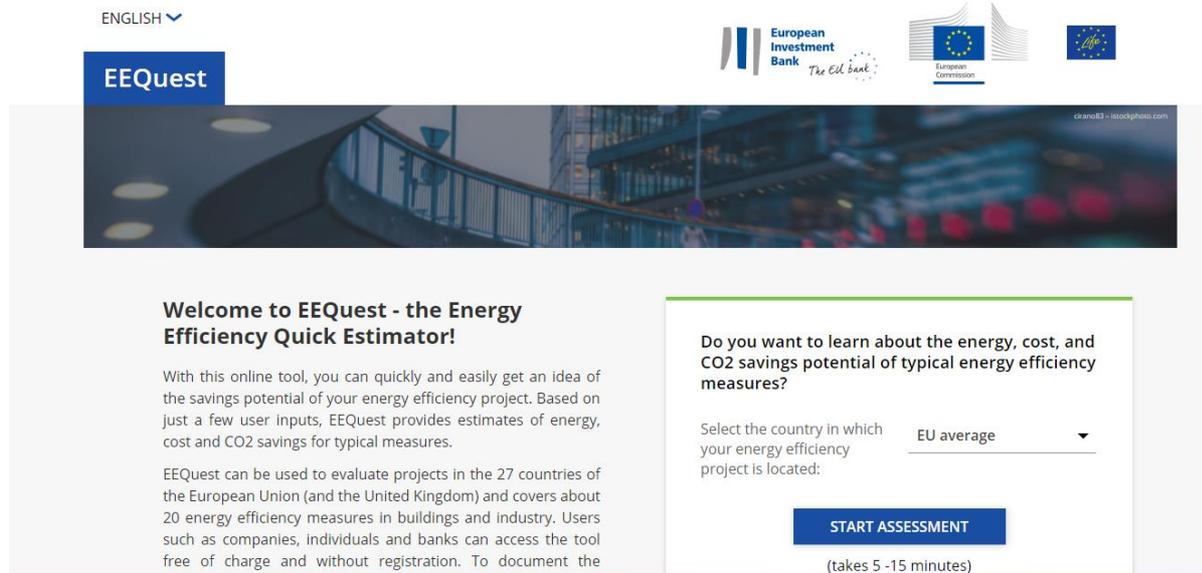


In fact, there are so many European initiatives that you may get lost in the tangle of information and bureaucracy, so we advise you to focus on the support available in your country or region, and don't forget that many of them come from transferred European funds.

However, we are going to show you one of the measures created by the European Investment Bank to quickly find out the potential savings you could achieve by implementing a certain energy efficiency project. Therefore, if you know what the

investment would cost you and the savings obtained, you can easily calculate the profitability of such an investment.

[EEQuest](#) can be used to evaluate projects in any of the 27 EU countries, is available in all languages, allows you to analyze up to 20 energy efficiency measures in buildings and industry, and you can access the tool free of charge without registration.



ENGLISH

EEQuest

European Investment Bank  
The EIB bank

European Commission

EU

>Welcome to EEQuest - the Energy Efficiency Quick Estimator!

With this online tool, you can quickly and easily get an idea of the savings potential of your energy efficiency project. Based on just a few user inputs, EEQuest provides estimates of energy, cost and CO2 savings for typical measures.

EEQuest can be used to evaluate projects in the 27 countries of the European Union (and the United Kingdom) and covers about 20 energy efficiency measures in buildings and industry. Users such as companies, individuals and banks can access the tool free of charge and without registration. To document the

Do you want to learn about the energy, cost, and CO2 savings potential of typical energy efficiency measures?

Select the country in which your energy efficiency project is located:

**START ASSESSMENT**

(takes 5 -15 minutes)

Here is the link: <https://eequest.eib.org/white>

This European tool can also be very useful when applying for external funding to undertake such investments.

## 5.2. National grants and subsidies for the energy efficiency of your salon.

To promote energy efficiency and renewable energy actions and projects, public administrations offer project financing and the development and management of public aid programs that affect the main energy-consuming sectors.

At the same time, you can also find banks in the private sector that have specific credit lines for this purpose. However, we are going to focus only on the Public Aid that we currently have in Spain.

The IDAE is a public body under the Ministry for Ecological Transition whose objective is to promote the energy transition.



In order to promote energy efficiency and renewable energy actions and projects, the IDAE's functions include financing projects and developing and managing public aid programs that affect the main energy-consuming sectors.

The financial resources managed by the IDAE come mainly from the European Regional Development Fund (ERDF), the National Energy Efficiency Fund, the General State Budget and the Institute's own funding.

There is an enormous variety of aid and incentives in this area and, by way of example, we are going to indicate those that may be of interest to you:

- Aid for energy rehabilitation and air-conditioning of buildings
- For the implementation of thermal renewable energy installations in different sectors of the economy.
- For efficient and sustainable mobility...

But if there are many actions that are incentivized, so are the public bodies that give these aids, as there are budget items from the State, the Autonomous Community and even the City Council. We leave you this link where you can consult all of them:

<https://www.idae.es/ayudas-y-financiacion/ayudas-en-materia-energética>



*En esta sección podrá consultar las ayudas publicadas en materia energética en el ámbito Estatal, Autonómico y Local (para capitales de provincia mayores de 200.000 habitantes). Para facilitar la búsqueda de su interés se editan diferentes boletines que se actualizarán periódicamente.*

*Ayudas Estatales, podrá optar por consultar las ayudas por índice cronológico o temático.*

*Ayudas de Comunidades Autónomas, las disposiciones se ofrece organizadas por CCAA o clasificadas por temas.*

*Ayudas de Entidades Locales de capitales de provincia mayores de 200.000 habitantes, contiene las disposiciones ordenadas por capitales de provincia o por temas.*

Before we finish, we would also like to remind you that some banks offer loans and credit lines that benefit from public funds. Here is an example of the ICO (official credit institute) loans and the European Investment Bank (EIB) loans that Banco de Santander processes.

<https://www.bancosantander.es/empresas/financiacion-avales/inversiones-proyectos-empresariales/lineas-ico-fondos-europeos/lineas-bei>.

After all this information, you may be thinking that all this aid is for large companies, or that there are many requirements and formalities to access this financing. Certainly, whenever we apply for financial aid, we will be asked for some previous studies and we will have to fill in a lot of documentation, but for that there are companies and public bodies that are dedicated to the processing of these aids. Ask for their advice and remember that the first thing to do is to draw up an energy efficiency plan indicating what you want to do, why you want to do it and the economic viability of the investment.

## Sources:

<https://www.idae.es/ayudas-y-financiacion/ayudas-en-materia-energetica>  
<https://www.compromisorse.com/rse/2014/10/24/10-maneras-de-ahorrar-energia-con-la-iluminacion/>  
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