

Training Module 1 – Securing your photovoltaic project

EnergyEfficiency4SMEs Project

Reference: LIFE21-CET-AUDITS-EnergyEfficiency4SME/101076459

Date, Location



Co-funded by
the European Union

ENERGY EFFICIENCY 4SMEs

A European Project

- **European Program: LIFE**
- **Length** : 36 months (Nov 2022 - Oct 2025)
- **Total Budget** : 1,84 M€
- **Consortium** : 23 partners from 10 different countries
- **Coordinator** : Eurochambres
- **Structure of the project:** 8 WP
- **Targets** : SMEs from 3 sectors:
 - Hospitality and restaurants (NACE codes I 55 to I 56.3.0)
 - Agri-food Industry (NACE codes C10 to C11.0.7)
 - Metals Industry (NACE codes C24 to C25.9.9)



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What are the main points to bear in mind when planning a photovoltaic project?

When you want to carry out a photovoltaic project, it's not enough just to determine a return on investment before taking the plunge. You need to review certain constraints and identify the points to watch out for, depending on your situation, to be able to estimate the feasibility and refine the profitability of your future project.


Check what could hinder a project or make it less profitable

Contents

- **Technical constraints: Structure, Waterproofing, Shading**
- **Planning constraints**
- **Connection constraints**
- **Insurance risk**



Setting up several scenarios

 We set up several scenarios in order to be as close as possible to your needs...

Ex:



Scenario 1 :
North roof only

Gross area 500m²

Scenario 2 :
East Roof Only

Gross Area 280 m²

But also so that you can
have a better overview of
the project!

Scenario 3 :
North East Roof

Gross area 780m²

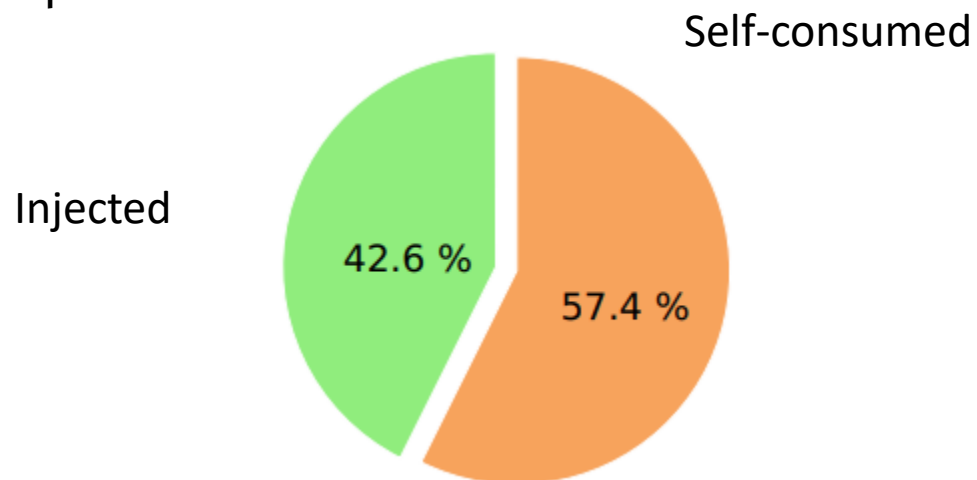


We set up two performance indicators for you to enlighten you on what your photovoltaic panels will be used for.

Self-consumption rate

The self-consumption rate is the share of energy produced by the photovoltaic panels that you will be able to consume directly. It is calculated based on your typical annual consumption.

Exemple:

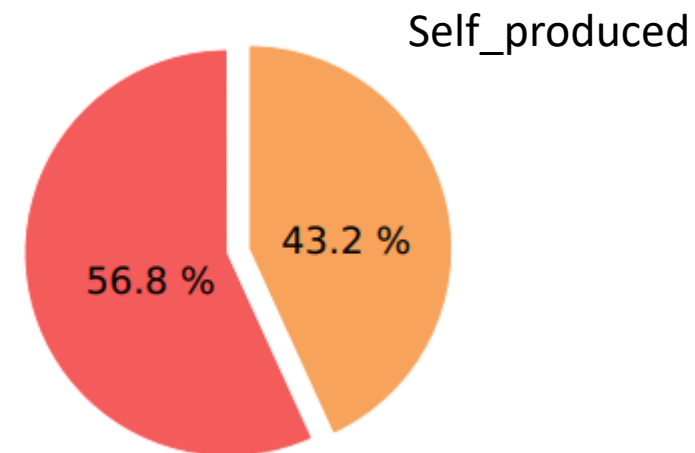


This company could consume 57% of what is produced!

Energy independence

The coverage rate (or energy independence) expresses what self-consumption will represent on your total consumption

Exemple:



43% of your consumption will come from your solar panels!



We are setting up two monetary indicators for you to enlighten you on what the photovoltaic panel project will represent financially as well as what it could bring you (according to the different scenarios)

Return on investment schedule

The return on investment will be proportionately faster depending on the size of the project. Knowing that a PV project has a minimum longevity estimated at 20 years.

Exemple:

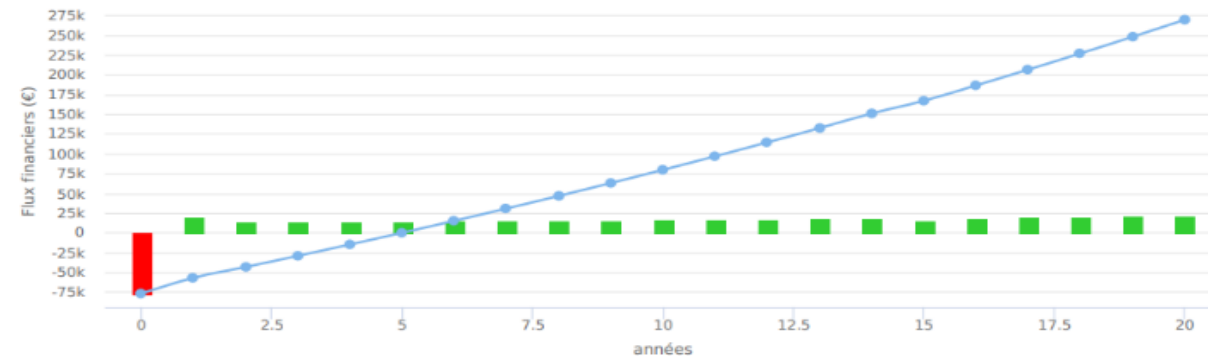
As shown in the graph on the right, the payback time is

5,25
years

Revenue after amortization

The internal rate of return takes into account all financial flows and expresses them in an annual return provided by the project.

Exemple:



For this project could bring in up to +/- €270,000!!



The current trends are favorable to better IRR with the increase in energy costs and the decrease in equipment costs; Go for it!

Risk factors:



Urban
planning

What are the
constraints?

Architecte des bâtiments
de France
Natural and technological
risks
Civil aviation

Connectio
ns

Are there any costs
involved in reinforcing or
extending the network?

Can the framework withstand the
work or does it need reinforcing? Is
the waterproofing compatible? Will
my installation be overshadowed?

Technique

Are the risks
insurable?

Insurance



Technical constraints: The existing roof

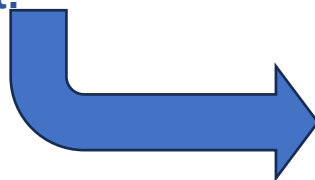


The strength of its framework :

On a roof, the added weight of the installation can exceed the original strength of the structure.

$+20 \text{ kg/m}^2$

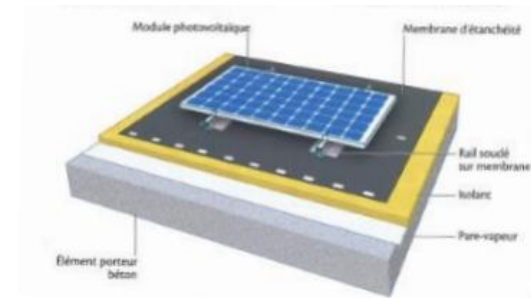
This may require reinforcement work which, depending on its complexity, will either make the project more costly or doom it.



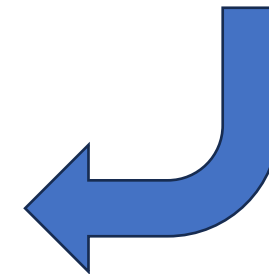
The technical opinion of a structural design office will provide you with information at a lower cost.

The compatibility of its waterproofing :

If the roof has a waterproof coating, it may be too fragile to accept panels.



In this case, it is best to wait or hurry to repair the waterproofing.



Technical constraints: Close masks



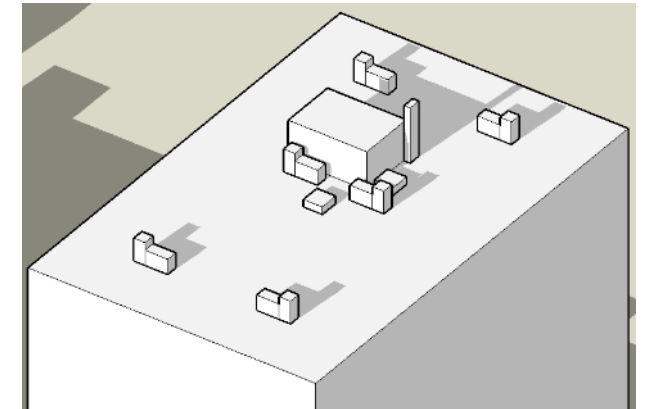
Cast shadows :

Photovoltaic calculation software only takes geographical relief into account when estimating the amount of sunshine an installation will receive.



10% shadow =
50% wasting

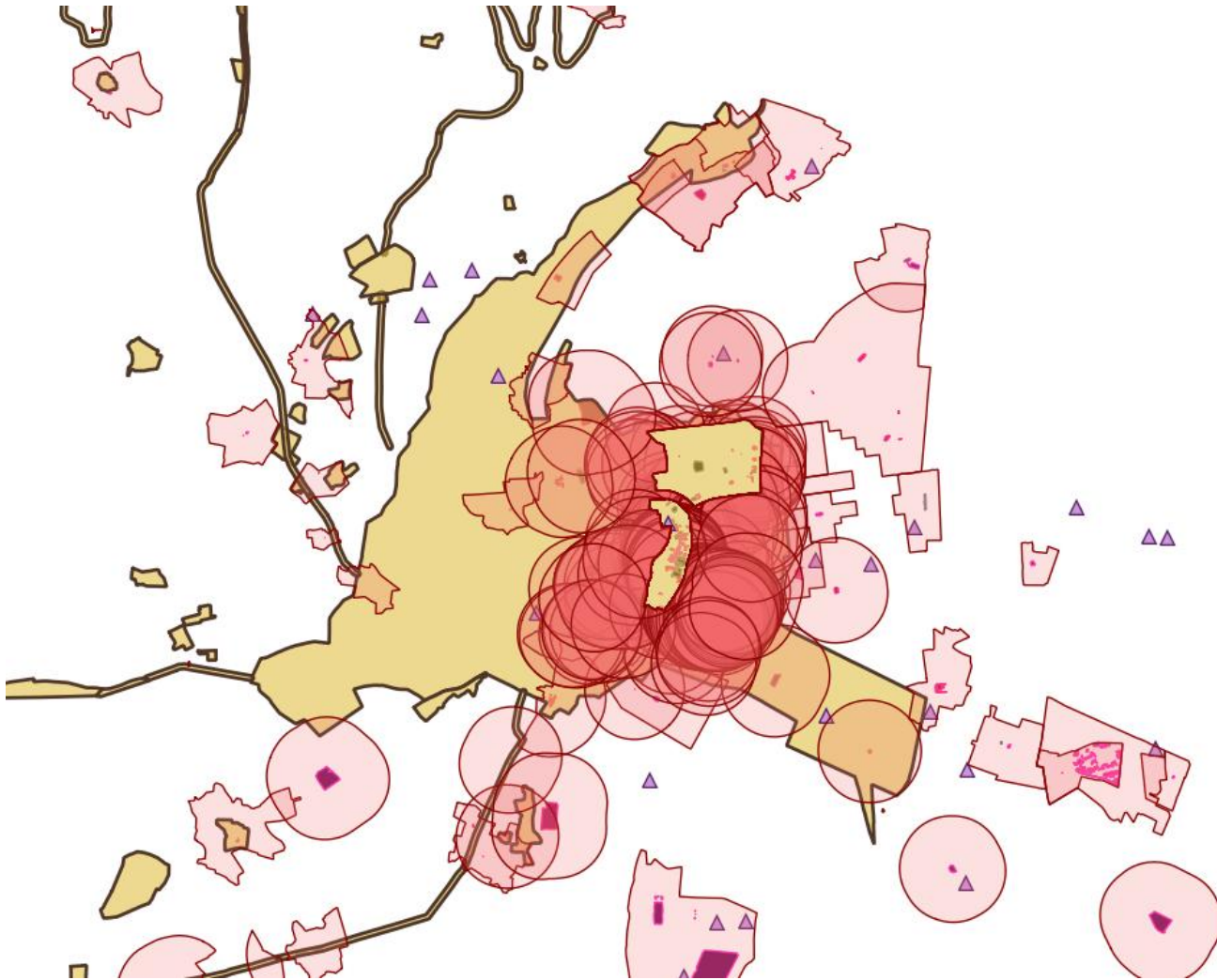
It's up to you to check whether there are any nearby masks (trees, signs, aediculae, etc.) and whether they cast a shadow over the planned location.



Free software to help you
simulate the shadows of
neighbouring buildings

Town planning constraints: ABF constraints Architectes des Bâtiments de France (French building architects)

Local planning regulations may impose constraints or prohibitions that could hamper your project:



The various ABF constraints:

Perimeter around "remarkable heritage sites"

Surroundings of "historic monuments"

Constraints around "listed or registered sites"



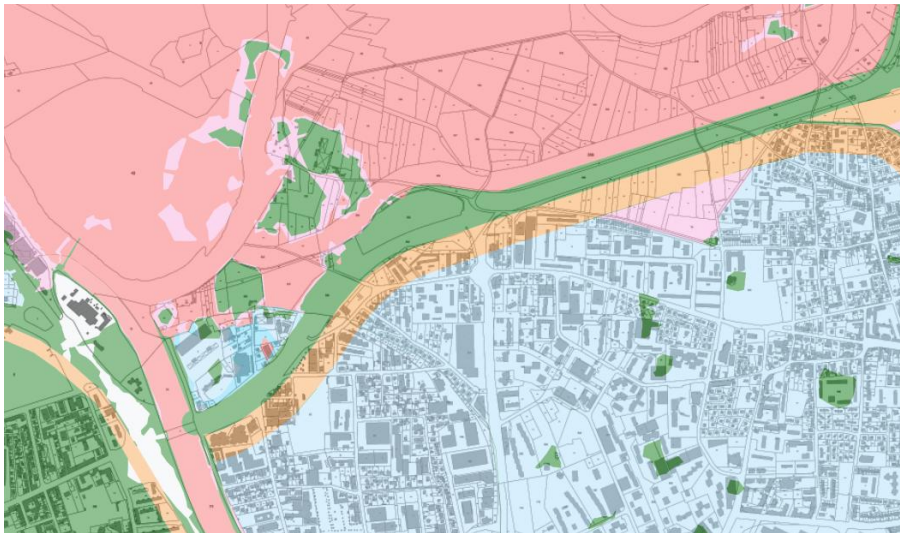
You need to consult the zoning plans and related regulations before committing to any major expenditure on your project.

Planning constraints: Prevention of natural and technological risks



Local planning regulations may impose constraints or prohibitions that could hamper your project:

Flooding

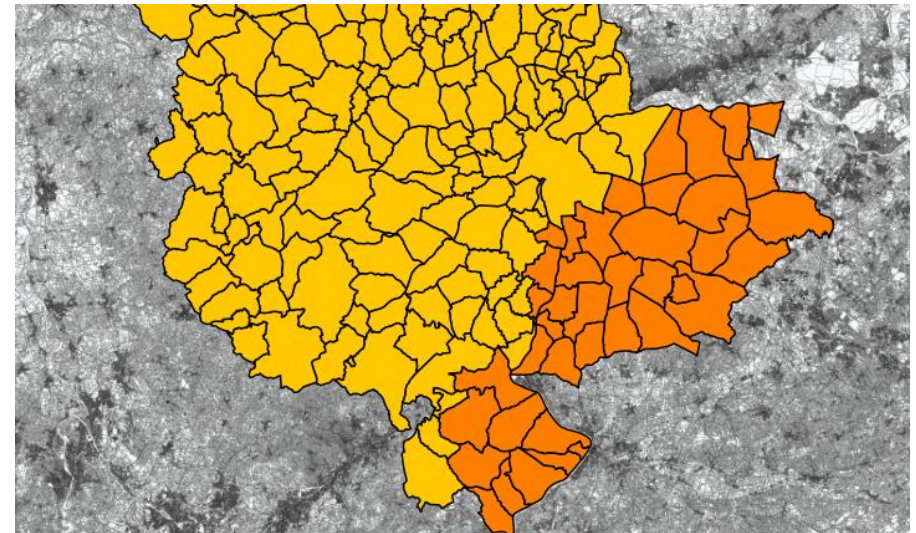


Building bans depending on
the flood zone



You need to consult the
zoning plans and related
regulations before committing
to any major expenditure on
your project.

Ground risk



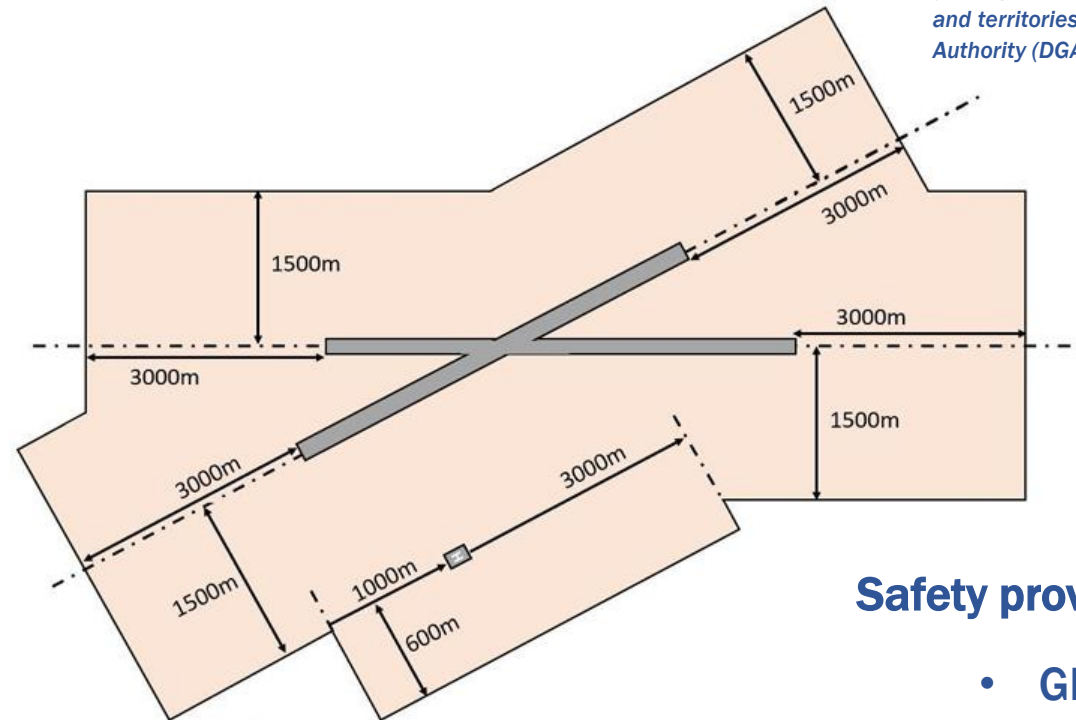
Structural reinforcement
according to seismicity zone



Civil aviation

Provisions relating to compliance :

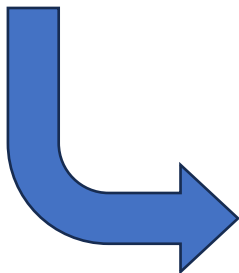
- No disruption to air navigation equipment
- No creation of obstacles dangerous to air traffic
- Maintenance of other conditions of approval and operation



- Article L. 1612 of the French Transport Code: any project to install photovoltaic panels, whatever its size or geographical location in France (metropolitan France + overseas departments (DOM) + overseas countries and territories (PTOM)), must be submitted to the French Civil Aviation Authority (DGAC) before any work is undertaken.

Safety provisions :

- Glare risk
- Risks associated with airport operations



You need to check the set-back distances from the nearest aerodrome.



Network connection constraints



The location of the installation may result in high connection costs, or even be impossible to achieve for reasons internal to the network operator (ENEDIS in France).



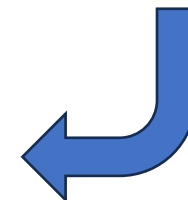
Connection risks :

- Additional cost of extension
- Additional cost of reinforcement
- Impossible to reinforce

Connection rates vary from around 100 euros to over 30,000 euros.

You can simulate the complexity of the connection on the network operator's website

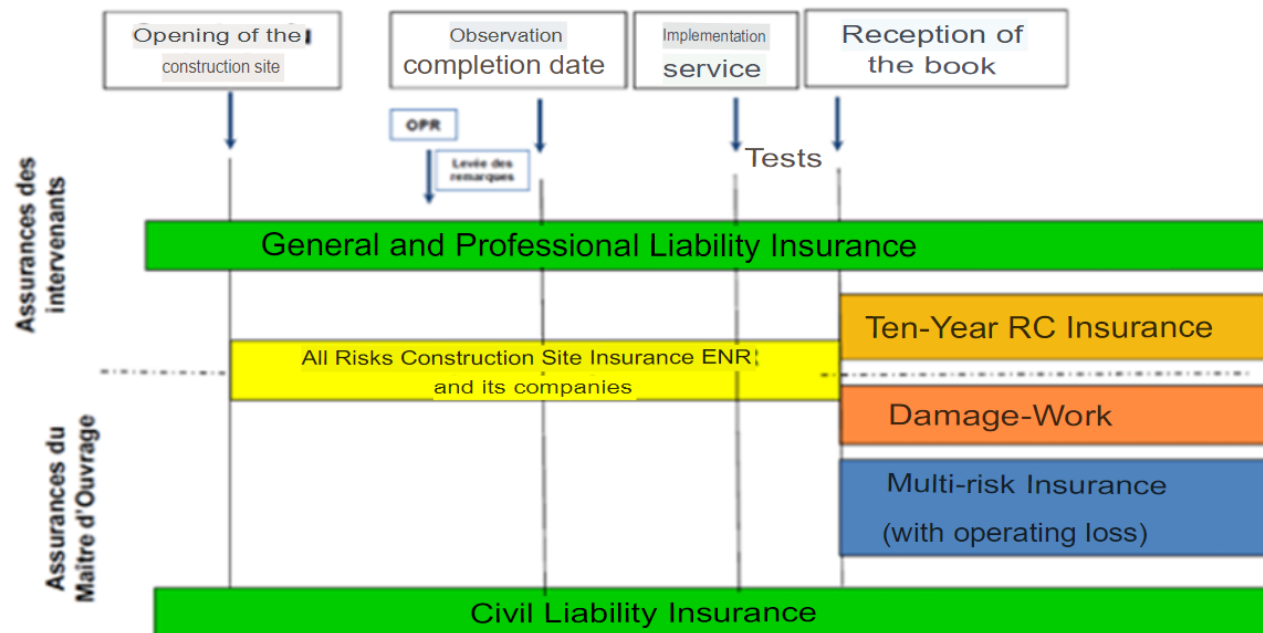
<https://mon-compte-professionnel.enedis.fr/raccorder/>



Insurance risk :



On site :



Activity constraints :

>Under-roof activities subject to exemption

- Electrolytic surface treatment of metals
- Manufacture of organo-mineral fertilisers
- Manufacture of chemical products
- Manufacture of rubber products and tyres
- Manufacture and processing of cellular plastics
- Packaging and storage of aerosol cans
- Manufacture of candles and other wax objects
- Manufacture of textiles, knitwear and clothing Leather and hides industry
- Recycling of all kinds (paper, metals, etc.)
- Sawmills
- Manufacture of wooden packaging and pallets
- Manufacture of plywood panels, particle boards and cork industry
- Furniture shops
- Drying and sterilisation of plants, fruit and vegetables, grinding of fodder and other plants
- Slaughter of poultry, rabbits and game
- Tobacco manufacturing
- Treatment of industrial waste
- Retail outlets
- Cabarets, nightclubs, dance halls, discotheques Flammable liquid warehouses.



Inform your insurer of your project at an early stage, and ask your project manager or installer to provide answers to these technical questions.





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Thank you for your attention!