# REPORT

## FEASIBILITY STUDY FOR A PHOTOVOLTAIC POWER PLANT

**INVESTOR**

**Date**
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SOLARLINK

# WHY SOLAR?

Investing in solar energy is becoming very popular around the world, as more and more people become aware of the importance of preserving our planet and the need to switch to renewable energy sources. Solar power plants represent an excellent way to reduce the use of fossil fuels, as well as environmental pollution, while at the same time enabling electricity savings.

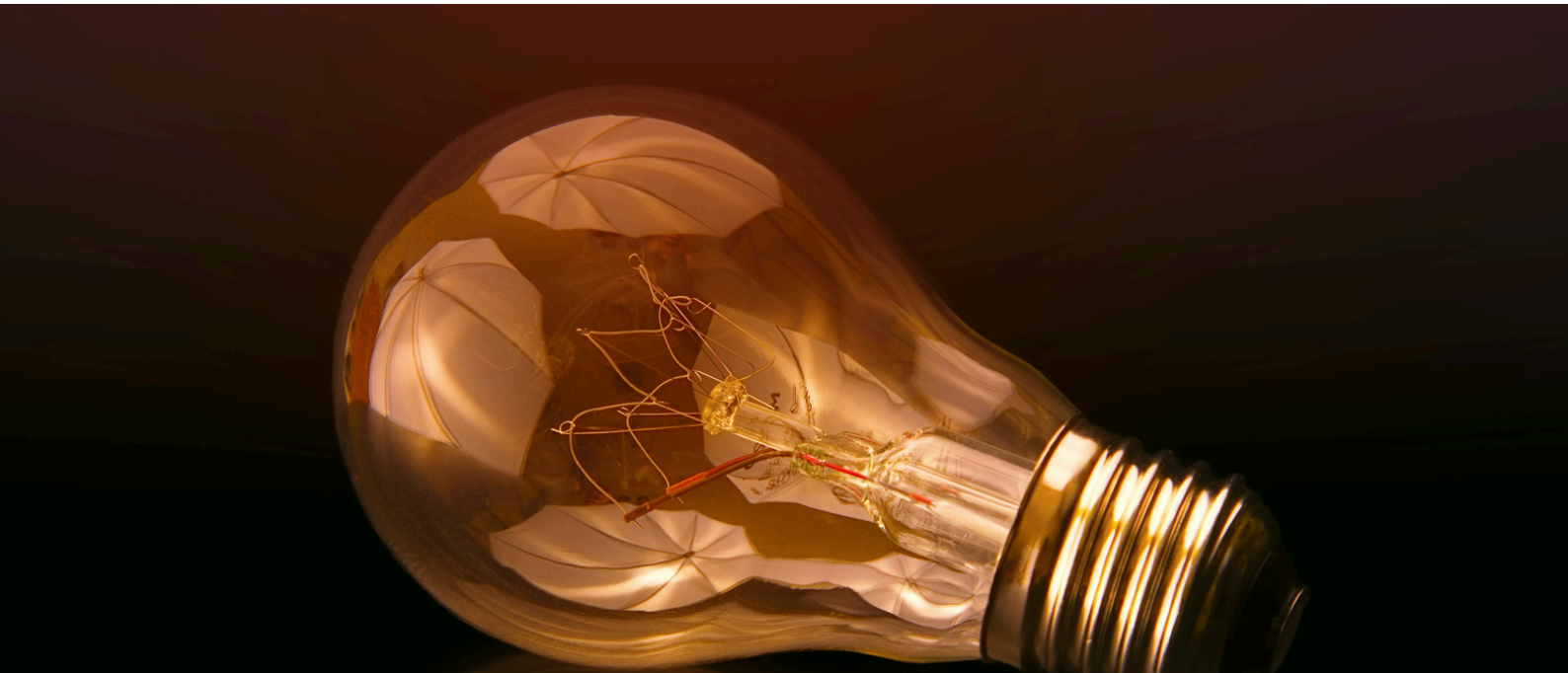
With the help of solar energy, through energy savings, electricity bills are reduced, but it also produces excess electricity that is handed back to the electricity distribution grid, which generates additional income.

Also, investing in solar is profitable because the price of electricity from fossil fuels is expected to rise, while the cost of building solar power plants will decrease.

Solar power plants don't pollute, don't emit harmful gases into the atmosphere and don't consume limited resources such as fossil fuels. On the other hand, they contribute to reducing global warming and promoting sustainable development and energy efficiency.

The availability of funds and subsidies to help with incentives to invest in solar contributes to reducing the required initial investment, accelerating the return on investment (ROI) and ensuring the safety and stability of the business.

Investing in solar energy has numerous benefits, not only for individuals and businesses, but also for the entire planet. More and more people are realizing the importance of switching to renewable energy sources and investing in the future. Be among them!

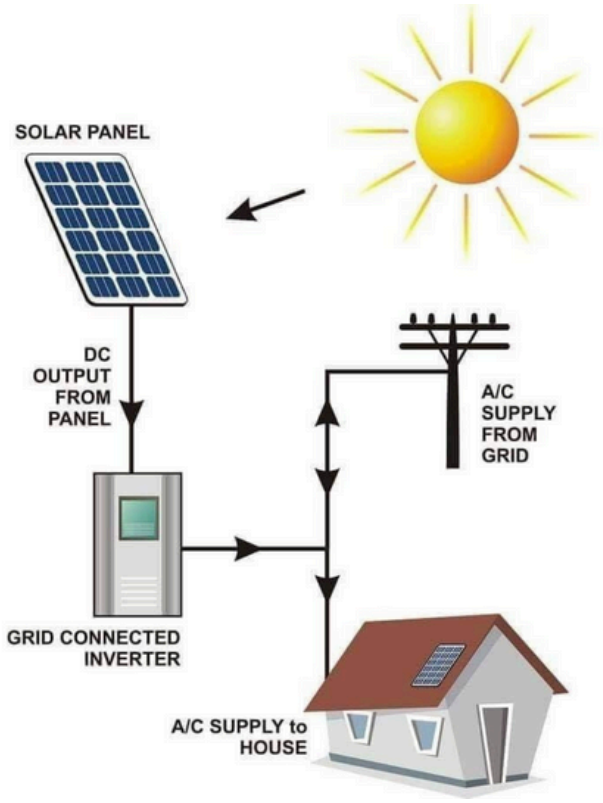


# SUMMARY

| Power of the PV power plant [kWp] | Annual energy production [kWh] | Annual energy savings [EUR] |
|---|---|---|
| 3.6 | 4277 | 396 |

| $CO_2$ emissions reduction for 30 years [tons] | Estimated value of the investment [EUR] | Return on investment [years] |
|---|---|---|
| 99 | 3960 | 10.4 |

# EQUIPMENT RECOMMENDATION




**PV MODULES**

| Nominal power [Wp] | Quantity |
|---|---|
| 450 | 8 |

**INVERTERS**

| Nominal power [kW] | Quantity |
|---|---|
| 3 | 1 |

**DC cables lenght :** 65 m

**Mounting system type - example :** K2 SolidRail System

Note: This is an equipment recommendation based on basic calculations. Consultation with an expert to check the adequacy of the equipment is recommended.

# GENERAL INFORMATIONS

## Input data

**Object location (coordinates) :** 44.82185585413347, 20.404632244248134

| Input data per roof | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Roof number** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| **Tilt angle [°]** | 35 | | | | | | | | | |
| **Azimuth angle [°]** | -47 | | | | | | | | | |
| **Free surface [m²]** | 112.5 | | | | | | | | | |

**Energy consumption**

Total annual consumption : 5000 kWh
Share of higher tariff : 85 %

**PV module**

Nominal power : 450 Wp
Lenght : 2094 mm
Width : 1038 mm

**Roof type :** other

**Investment cost :** 1100 EUR / kWp

# GENERAL INFORMATIONS

## Output data

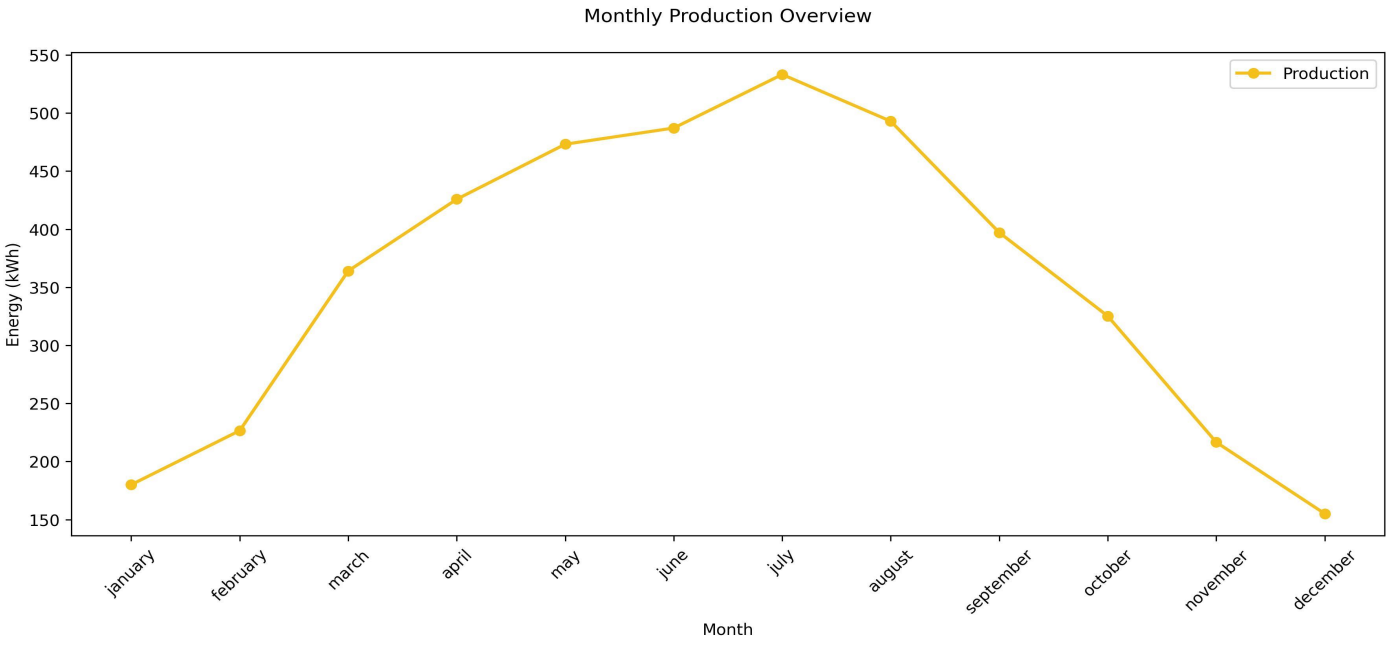
**Recommended power of the PV power plant :** 3.6 kWp
**Maximum power that can be installed on the roofs :** 19.8 kWp
**Total estimated annual energy production :** 4277 kWh
**Total used area of the roofs :** 20 $m^2$
**Annual energy savings in kWh :** 4250 kWh
**Annual energy savings in EUR :** 396 EUR
**Total energy savings in the exploitation period :** 10426 kWh
**CO2 emissions reduction during the exploitation period :** 99 tons
**Estimated annual maintenance costs :** 79 EUR
**Estimated value of the investment :** 3960 EUR
**ROI :** 10.4 years

| **Ouput data per roof** - Sorted by optimality for use | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Roof number** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| **Tilt angle [°]** | 35 | | | | | | | | | |
| **Azimuth angle [°]** | -47 | | | | | | | | | |
| **Installed power [kWp]** | 3.6 | | | | | | | | | |
| **Number of modules** | 8 | | | | | | | | | |
| **Annual energy production [kWh]** | 1188 | | | | | | | | | |
| **Used roof area [$m^2$]** | 20 | | | | | | | | | |

# MONTHLY ENERGY DATA

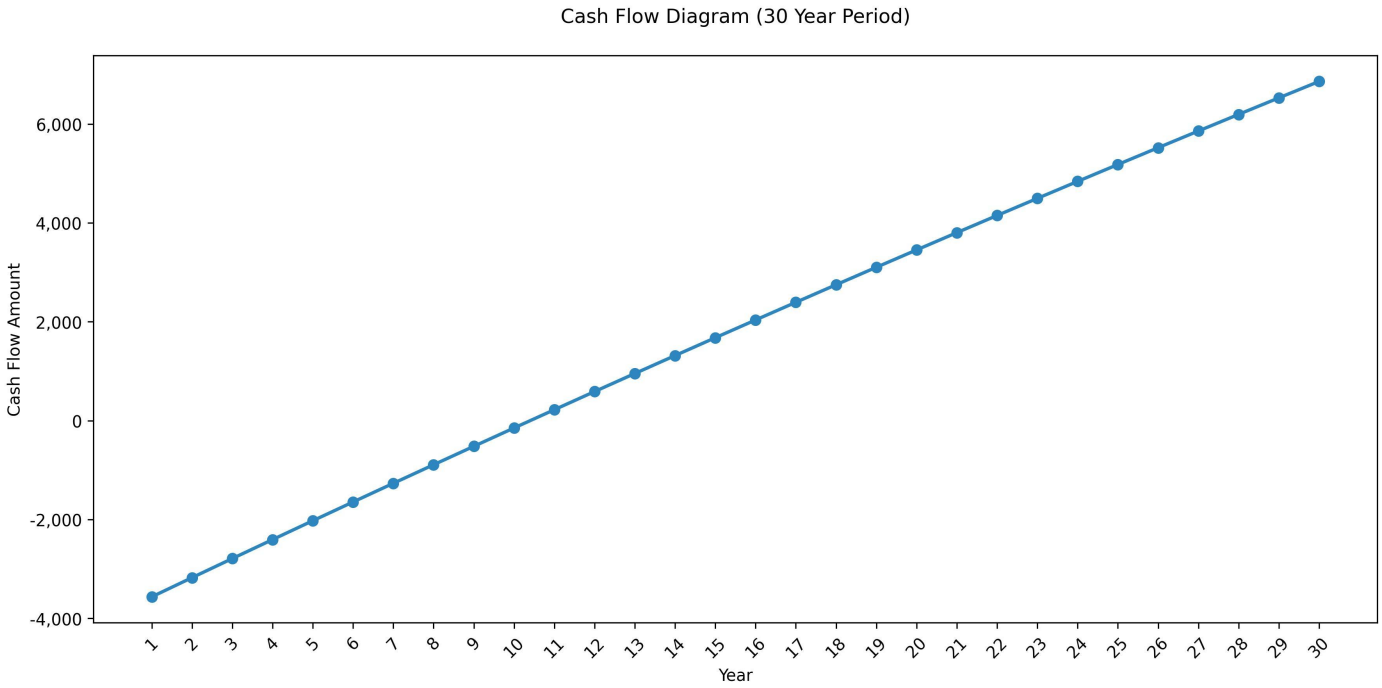
**Energy production**

| | | |
|---|---|---|
| Jan : | 180 | kWh |
| Feb : | 227 | kWh |
| Mar : | 364 | kWh |
| Apr : | 426 | kWh |
| May : | 473 | kWh |
| June : | 487 | kWh |
| July : | 533 | kWh |
| Aug : | 493 | kWh |
| Sept : | 397 | kWh |
| Oct : | 325 | kWh |
| Nov : | 217 | kWh |
| Dec : | 155 | kWh |




The graph shows the diagram of the estimated electricity production from the solar power plant on a monthly basis during the year.

# FINANCIAL DATA




**The cash-flow diagram shows the inflows and outflows of money during the operational period of the power plant with annual maintenance costs included.**

| Year | Status | | Year | Status | |
|---|---|---|---|---|---|
| 2025 : | -3564 | EUR | 2040 : | 2036 | EUR |
| 2026 : | -3176 | EUR | 2041 : | 2394 | EUR |
| 2027 : | -2790 | EUR | 2042 : | 2749 | EUR |
| 2028 : | -2407 | EUR | 2043 : | 3102 | EUR |
| 2029 : | -2025 | EUR | 2044 : | 3453 | EUR |
| 2030 : | -1646 | EUR | 2045 : | 3803 | EUR |
| 2031 : | -1268 | EUR | 2046 : | 4150 | EUR |
| 2032 : | -893 | EUR | 2047 : | 4496 | EUR |
| 2033 : | -520 | EUR | 2048 : | 4839 | EUR |
| 2034 : | -148 | EUR | 2049 : | 5181 | EUR |
| 2035 : | 221 | EUR | 2050 : | 5521 | EUR |
| 2036 : | 588 | EUR | 2051 : | 5859 | EUR |
| 2037 : | 953 | EUR | 2052 : | 6195 | EUR |
| 2038 : | 1316 | EUR | 2053 : | 6529 | EUR |
| 2039 : | 1677 | EUR | 2054 : | 6862 | EUR |