Summary of rooftop solar analysis

Location: Milan, Italy **Date of analysis**: April 2022

Recommendation*: Install four solar panels (7.69 m^2), for a net present value of 3415.08 euros, with a payback of 12 years.*

Main economic results:

Financing	NPV (EUR)	Payback (years)	IRR (%/year)	LCOE (EUR/kWh)
Gov. subsidies and 75% debt	3415	12	10.7%	0.070
Gov. subsidies and 100% equity	3631	11	9.4%	0.066
No gov. subsidies and 100% equity	1473	18	3.6%	0.117

Additional results:

A system of six 400 W panels, together with a 5.12 kWh battery, requires an initial investment of € 9730. If the PV system is financed with 100% equity and government subsidies, it will provide an NPV of €6071.83, with a payback of 9 years.

Main inputs and assumptions:

Household and Economics

Electricity Consumption	3561	kWh/year	Inflation	2.0%	per year
Electricity price – buy	0.22	EUR/kWh	Bank loan interest rate	5.10%	per year
Electricity price – sell	0.00	EUR/kWh	Bank loan maturity	5	years
			Equity cost of capital	1.71%	per year

PV panels chosen

Peak power	400	W/panel	System losses	14,0%	of output
Panel area	1.92	m^2/panel	Degradation with age	0.5%	per year
Useful life	25	Years	Maintenance costs	€ 32	per year

Total cost of optimal installation size (without subsidies)	5700	EUR
Total cost of optimal installation size (after subsidies)	2850	EUR

Government subsidies:

The Italian government refunds 50% of the initial investment, up to a maximum of € 96,000, to install solar panels for self-consumption. Therefore, if the energy produced exceeds the household demand, it will not be possible to sell it with a Feed-in-Tariff.