Summary of rooftop solar analysis

Location: Bogotá, Colombia **Date of analysis**: Nov/2021

***Recommendation**: install 3 solar panels (4.89 m^2), for a net present value of 4.729 million COP (equivalent to 1073 euros), with a payback of 6 years.*

Main economic results:

Financing	NPV (COP '000)	Payback (years)	IRR (%/year)	LCOE (COP/kWh)
75% Debt	4.729	6	5.21%	309.66
100% Equity	6.909	2	2.90%	241.56

Additional results:

A system of 3 panels requires an initial investment of over 5 million COP but provides an NPV of over 4 million pesos in 6 years along with an increase in the trust of the electrical system in case of shortages as well as a positive environmental impact.

Main inputs and assumptions:

Household and Economics					
Electricity Consumption	2,134.6	kWh/year	Inflation	2%	per year
Electricity price – buy	504.78	COP/kWh	Bank loan interest rate	15%	per year
Electricity price – sell	229.41	COP/kWh	Bank loan maturity	5	years
			Equity cost of capital	0.17%	per year
PV panels chosen					
Peak power	260	W/panel	System losses	13.5%	of output
Panel area	1.63	m^2/panel	Degradation with age	0.5%	Per year
Useful life	25	Years	Maintenance costs	30,000	COP/year per panel
			Total cost of optimal installation size	5,349,092	COP

Government subsidies:

The government makes an exemption of tax payment to the necessary elements to install a domestic photovoltaic solution within which are the panels and microinverters. There is also a

tax exemption to the purchase and sale of electricity since public services are not under the tax regime.

Some PV panel suppliers

- https://www.electromuebles.com.co/product-category/muebles-hogar/
- https://www.energiaymovilidad.com/productos/

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