

# Architect's role in Heat Decarbonization

## Analysis of Successful Cases

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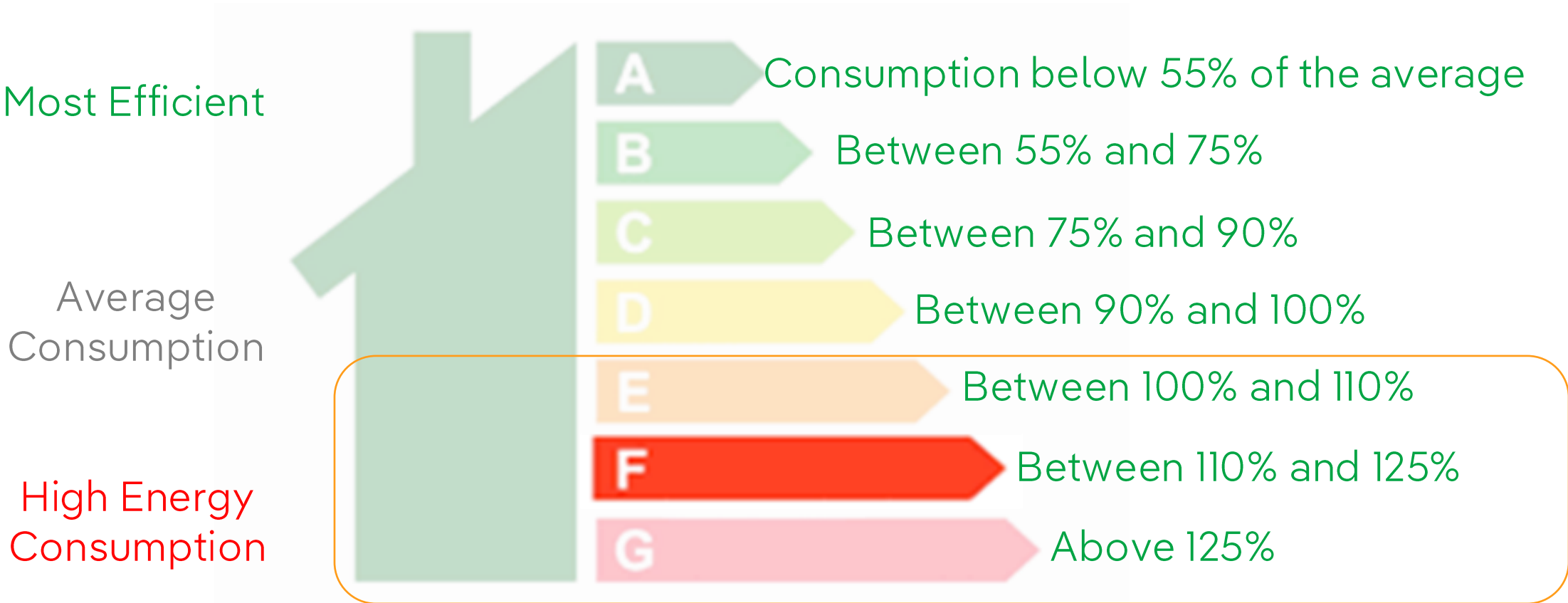


# Understanding the Spanish Market Today

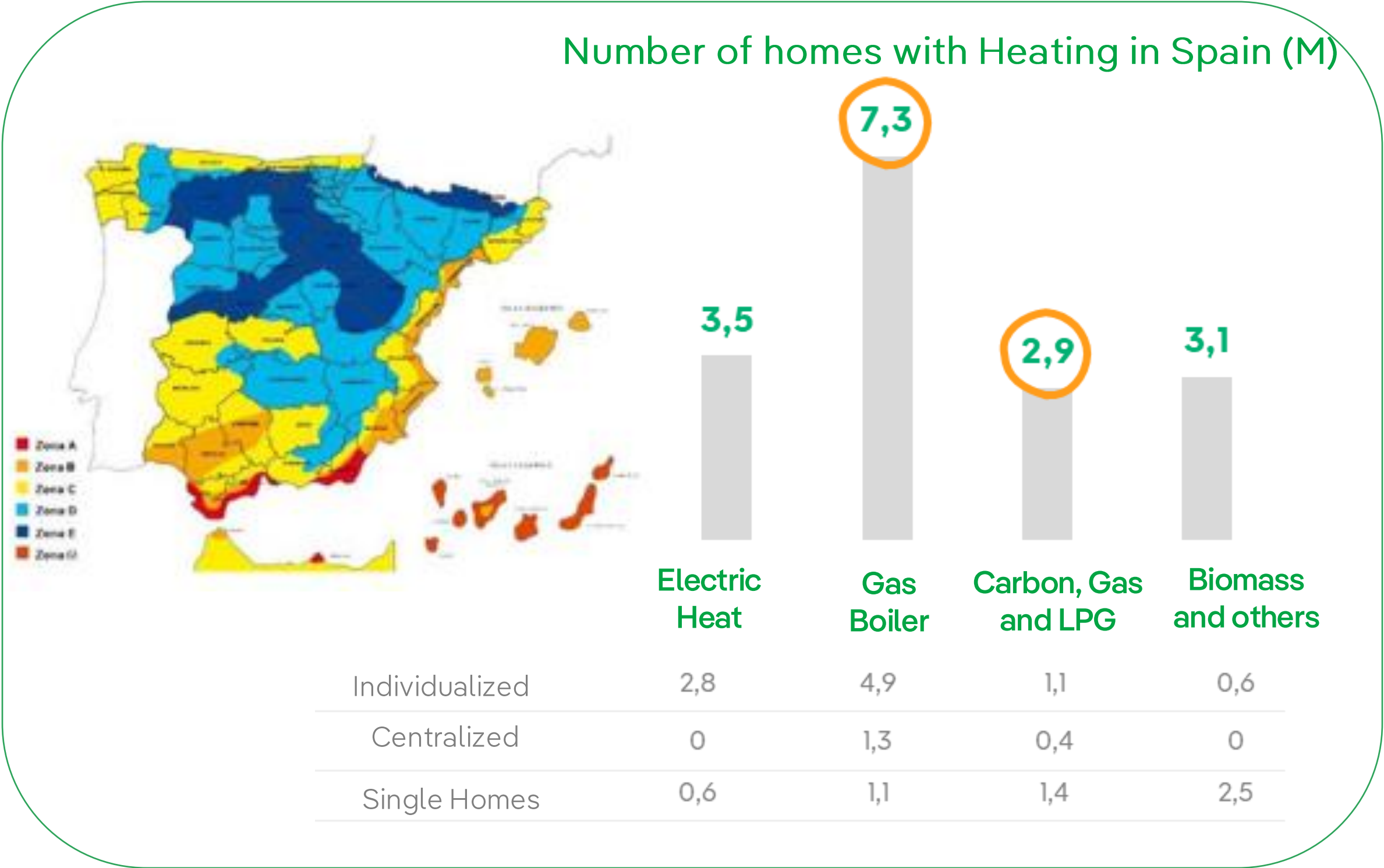


## Market Opportunity

Buildings are responsible for 36% of greenhouse gas emissions.  
Spain is one of the European countries with the highest use of diesel and LPG.



**80%** of homes in Spain have an Energy **scoring of E,F,G**  
**10** Millions homes need to be energetically adapted



# Real case: Gas Boiler replacement with a Heat Pump



## Property features



Located in: Alicante



Climate zone: B



Single-family home



Built Area: 230 m<sup>2</sup>



Year built: 2006



### LPG Boiler

Heating and DHW

25kW Boiler  
Performance 66%



21,831 kWh/year  
2,500€



11,080 kWh/year  
2,534€



### Heat pump

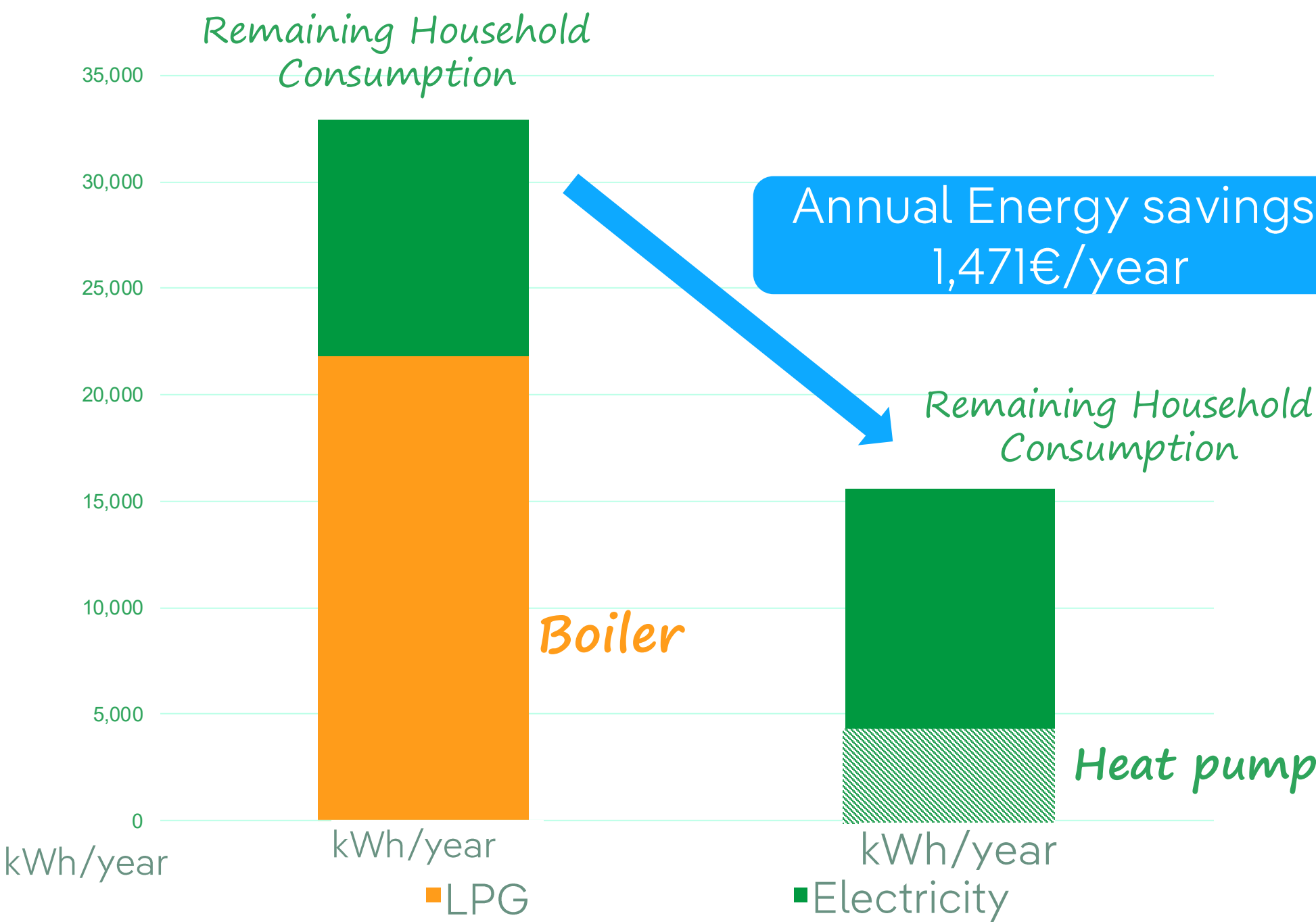
Heating and DHW

8 kW Heat pump  
Performance with  
Radiators: 311%

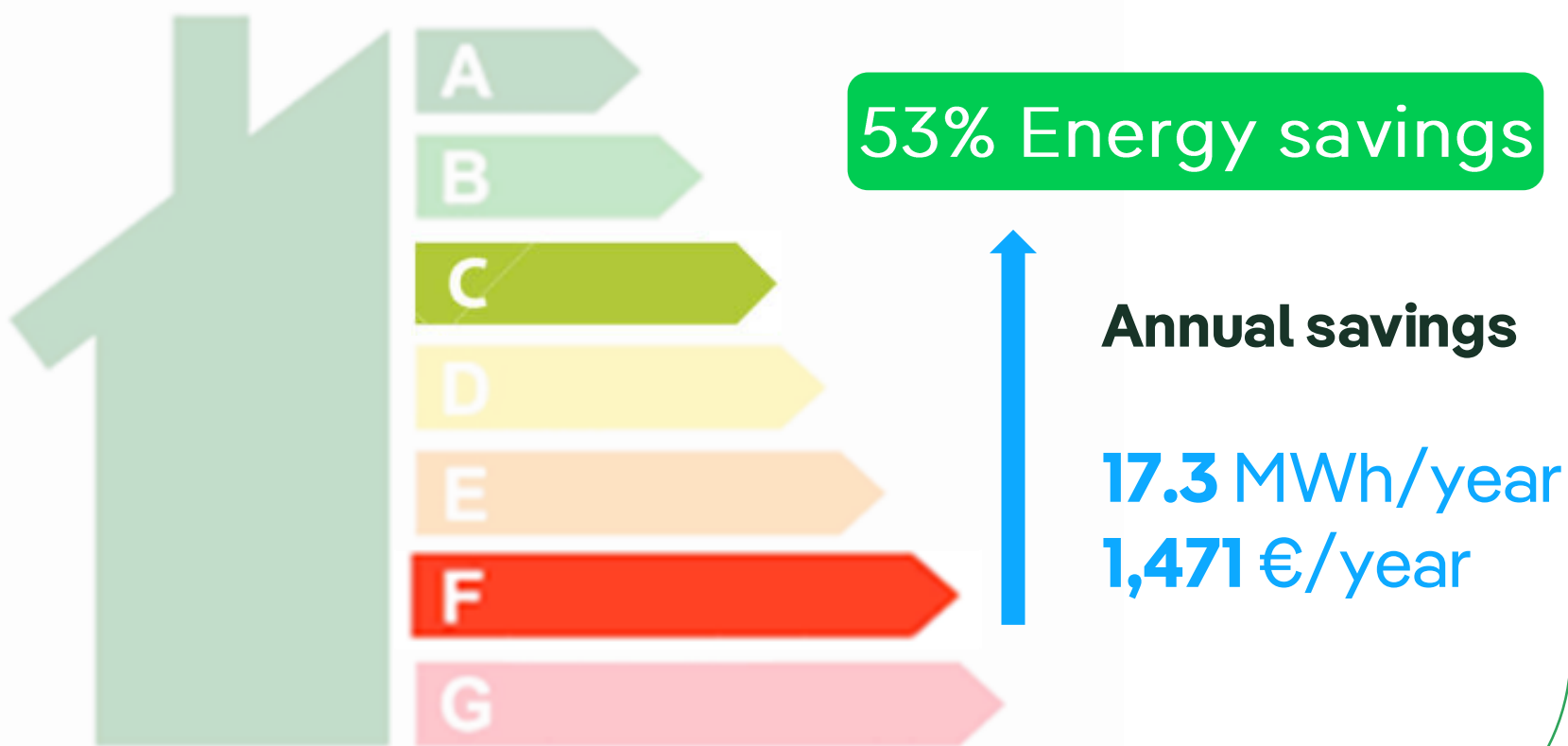


4,500 kWh/year  
1,029€

11,080 kWh/year  
2,534€



Switching to heat pump improves the energy rating by three levels





# Real case: Heat pump + Solar panels



### Heat pump

Heating and DHW

8 kW Heat pump  
Performance with Radiators: 311%

4,500 kWh/year

1,029€

11,080 kWh/year

2,534€

14 Solar panels

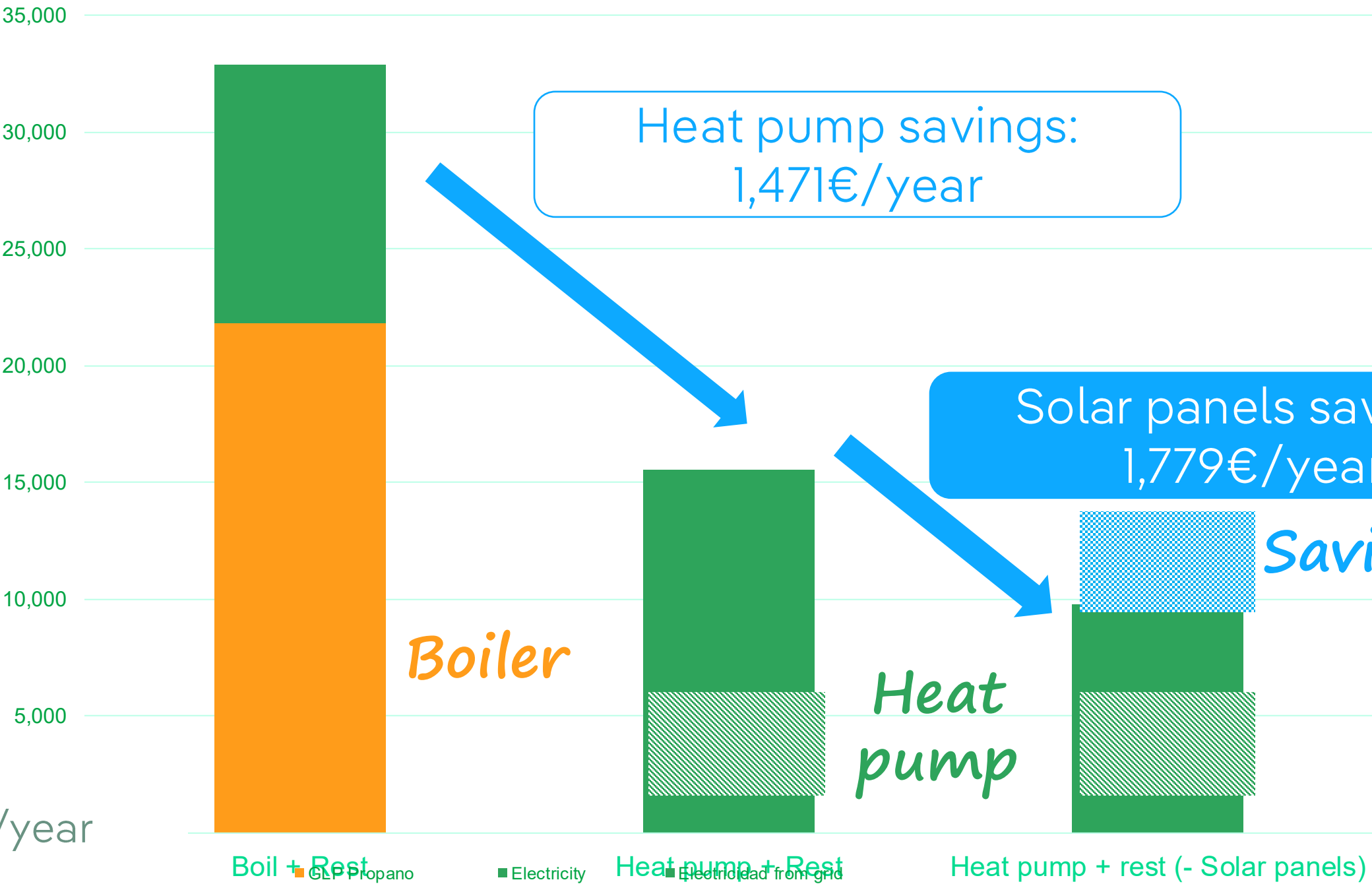
6.3kWp

PV Selfconsumption: 5,801 kWh/year

## Total consumption

9,779 kWh/year

1,784 € / year



Installing solar panels enhances savings with a heat pump, as the energy demand is fully electrified



Heat pump + Solar panels:

Annual energy savings

23.1 MWh/year

3,250 €/year

64%

EMISSION REDUCTIONS





Sierra Magina Condominium

Energy Rehabilitation Project

Esperanza Lozano

NON Arquitectura



# Sierra Magina Condominium



Climate zone: C

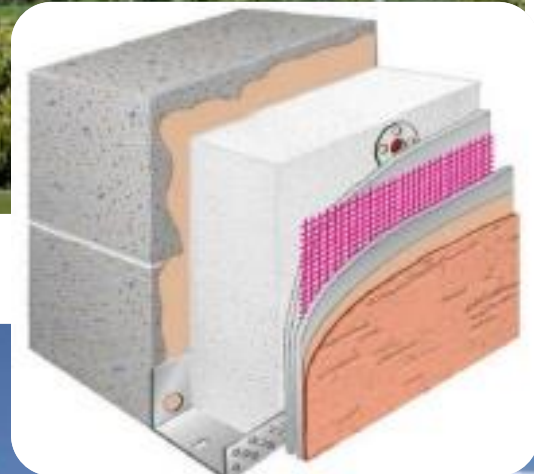


## Situation:

- Community located in Jaen's downtown built in 1976
- 12 Buildings of 4-10 floors with **186 apartments** and 2.800m<sup>2</sup> of commercial premises
- Central Fuel Boiler for heating (2.558 kW)
- System Fuel Consumption 1,1GWh (119.000€/year)

## 100% Electrification Heating System - Iberdrola actions:

- Replace boiler for **20 heat pumps** (12x80kW & 8x100kW R290 Chillers)
- 125kWp **PV System** installation
- Reduce the energy demand through **external facades and roof** (external thermal insulation system SATE) **Turnkey Project**, commissioning, legalization.
- Grant/subsidies management





# Efficiency and Savings

PREVIOUS SYSTEM  
HEATING



NEW SYSTEM  
HEATING



## MAIN ECONOMIC MAGNITUDES

1

Energy Building Renovation	5,4 M€
Subsidies RD853 + White Certificates	-4,4 M€



Total Investment	0,95 M€
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Amount estimated per property	6.650€ /resident
After Tax Deduction (-3.990€)	2.260€

## MAIN ENERGY SAVING DATA

2

Fuel Consumption per property	53€/ monthly
New Electricity Consumption per property	34€/ monthly
Energy Savings (€)	 40%
Heat Pump System Consumption	+320 MWh / year
PV Annual Production	220 MWh / year
CO <sub>2</sub> ton Savings	 286 ton CO <sub>2</sub> /year

**PLUS Property Upgrading!! (up to) 25 %** 3



# Iberdrola's role at Sierra Magina Condominium



IMPLEMENTATION: Under the "Delegated Development and Turnkey" model, the condominium delegates the complex management of the renovation to a single trusted agent.



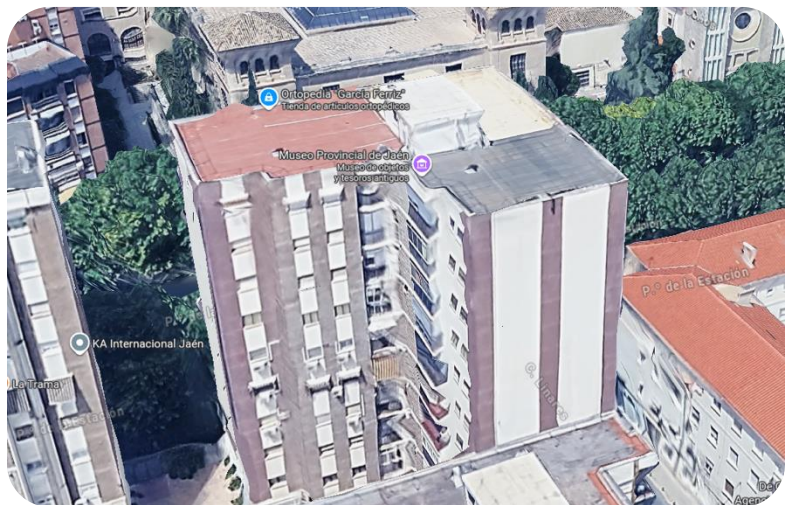
GUARANTEE: All responsibilities are consolidated under the role of the Delegated Developer.







# Sierra Magina Condominium Project: timeline and challenges



- ✓ STUDY REQUEST BY THE CCPP
- ✓ SUBMISSION OF BID
- ✓ APPROVAL OF BID BY THE CCPP
- ✓ SIGNING OF THE CCPP-IBERDROLA CONTRACT
- ✓ APPLICATION FOR NEXTGEN AID

5 months

SPEED IN DECISION-MAKING AND VERY SHORT TIME IN MANAGEMENT DUE TO THE HIGH EFFICIENCY AWARENESS OF THE PROPERTY



- ✓ PREVIOUS GRANTING OF NEXTGEN AID
- ✓ FINAL GRANTING OF NEXTGEN AID

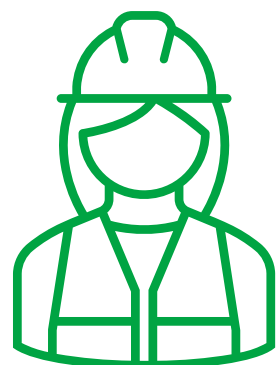
16 months

LONG TIME PERIOD FROM THE APPLICATION FOR SUBSIDIE TO ITS CONFIRMATION, DUE TO THE OPERATION OF PUBLIC ADMINISTRATIONS

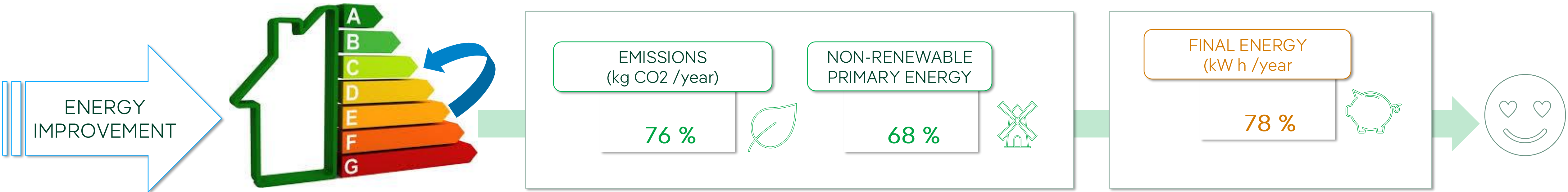


- ✓ START DATE OF WORKS: October 2024
- ✓ ESTIMATED COMPLETION DATE OF WORKS: December 2025

15 months



Switching to HEAT PUMP and REDUCING the energy DEMAND improves the energy rating by TWO LEVELS:

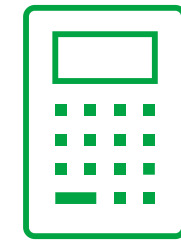




# Example of Heat Pump installation cost



10kW Heat pump in Madrid,  
replacing a gas boiler in a  
single-family home



Heat pump installed 12,000€

TVA 21% (IVA) 2,520€

Total (TVA included) 14,520€

White Certificates (ESC or CAE in Spain) -2,800€

Total amount 11,720€



*This is the average cost of  
a gas boiler in Spain*



*After installation, the customer can benefit from:*

60% tax deductions for energy-efficient renovations -7,032€ (Máx. 9.000€)

Total final investment 4,688€

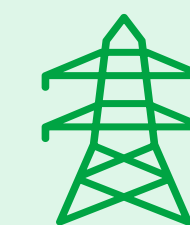
*Tax deductions are available until 1st January 2026, what happens next?*



## Accelerating the adoption of heat pumps in Spain requires:

- A **reduction in VAT** applied to both the equipment and the energy it consumes.
- The **extension of tax incentives** for energy renovation projects including all housing types+ new subsidies for energy-efficient building renovation projects in condominiums.
- A **reduction in local property taxes** (IBI), as currently applied to photovoltaic installations.
- **Citizen awareness** of the economic benefits of implementing heat pumps and energy efficiency

## External needs



Increase grid capacity  
and shorten permitting  
and approval timelines



Thank you for your attention



