



NET ZERO HERO

Climate Neutral & Smart GABROVO

Turning Panel Districts into Carbon Neutrality Pioneers

OUR VISION: Transforming the Trendafil 1 district (44 buildings, ~3,000 residents) into a replicable near-zero emission blueprint



The pilot zone covers 30 **multi-family residential buildings**, 2 kindergartens, a nursery, a school, and several commercial premises. Deep energy renovation models are being implemented alongside photovoltaic systems and high-efficiency heating solutions. Some buildings will be designed to nearly zero-energy standard, others to full energy independence. A strong emphasis is placed on energy communities: groups of citizens, businesses, and institutions that produce, share, and manage energy together. Municipal experts, construction workers, and residents receive dedicated training. Zero-emission scenarios are modelled, community meetings are held, and solutions are tailored to the real needs of the people who live there.

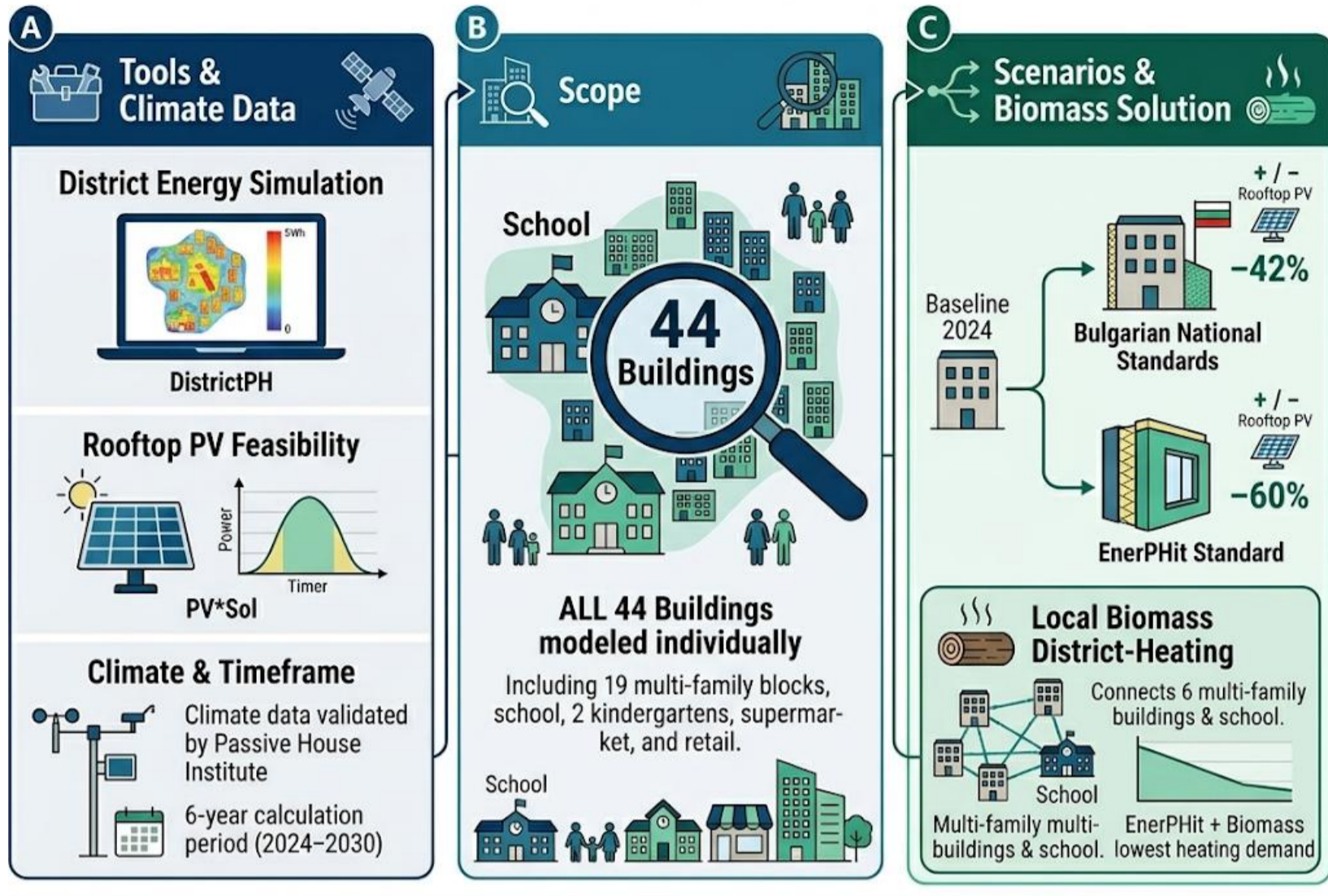
OUR TARGETS:

Emissions: 75.5% reduction in CO₂ emissions by 2030.

Energy Bills: Drastic drop from €1.59 million to €389,000 annually.

Core Approach: A zone-based integrated model combining deep renovation, rooftop solar, and community governance.

Modelling Approach for the NetZeroHero Plan — Trandafil 1 District, Gabrovo



Source: NetZeroHero Plan — Trandafil 1 District, Gabrovo, DistrictPH modelling. 2024–2030 calculation period.

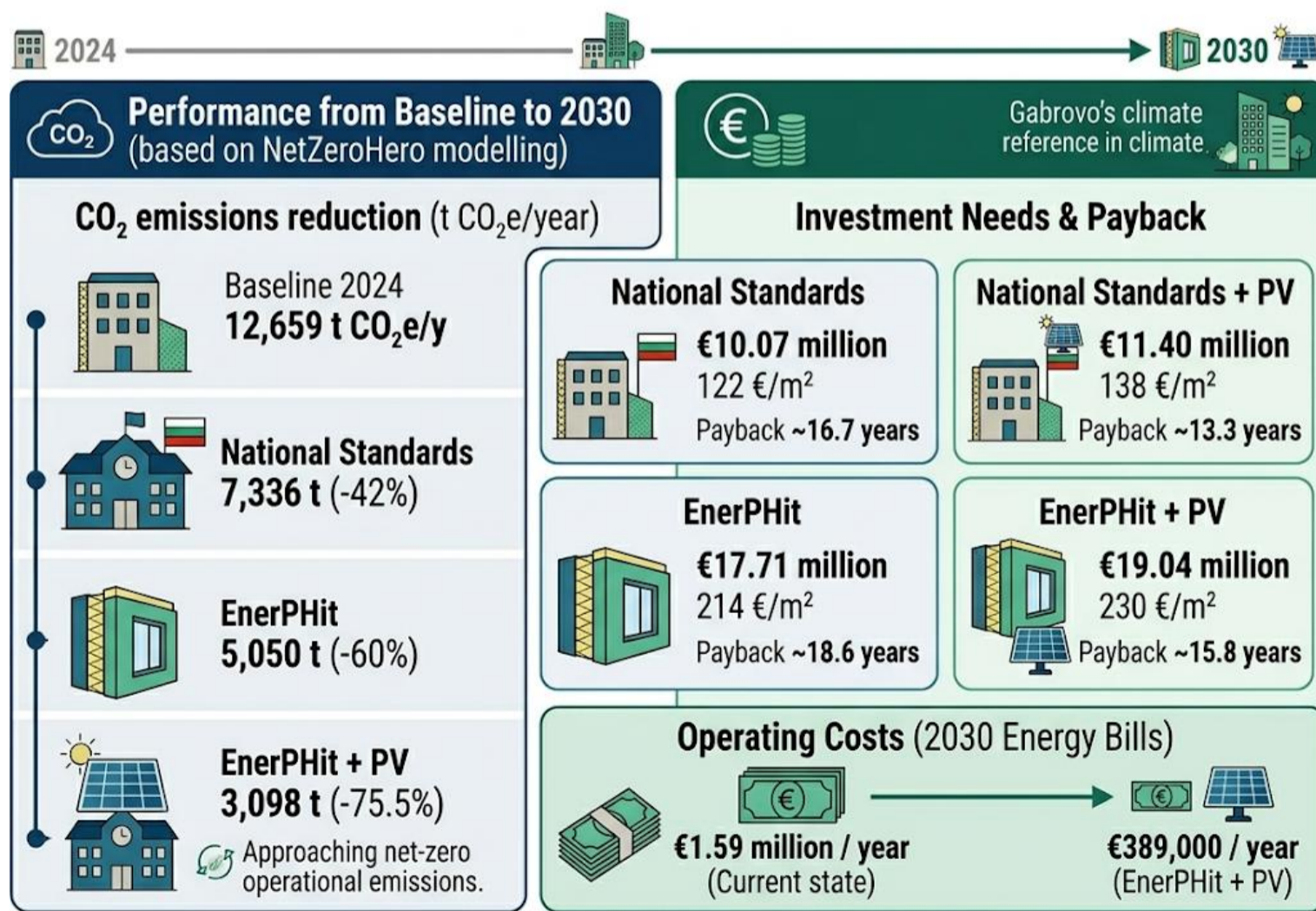
Gabrovo Pathway to Neutrality

Deep Renovation (EnerPHit): Transforming typical panel blocks into energy leaders through slashing heating demand by 78% (from 111 down to 24 kWh/m).

Solar Powerhouse: Activating over 24,000 sq.m. of unused rooftop space to generate 2.06 GWh/year of clean, local energy.

Local Biomass: Designed a wood-chips local heating system for public and residential buildings.

Emissions and Cost Outcomes — Trandafil 1 District, Gabrovo



Source: NetZeroHero Plan — Trandafil 1 District, Gabrovo, DistrictPH modelling. 2024–2030 calculation period.

THE HIGHLIGHTS:

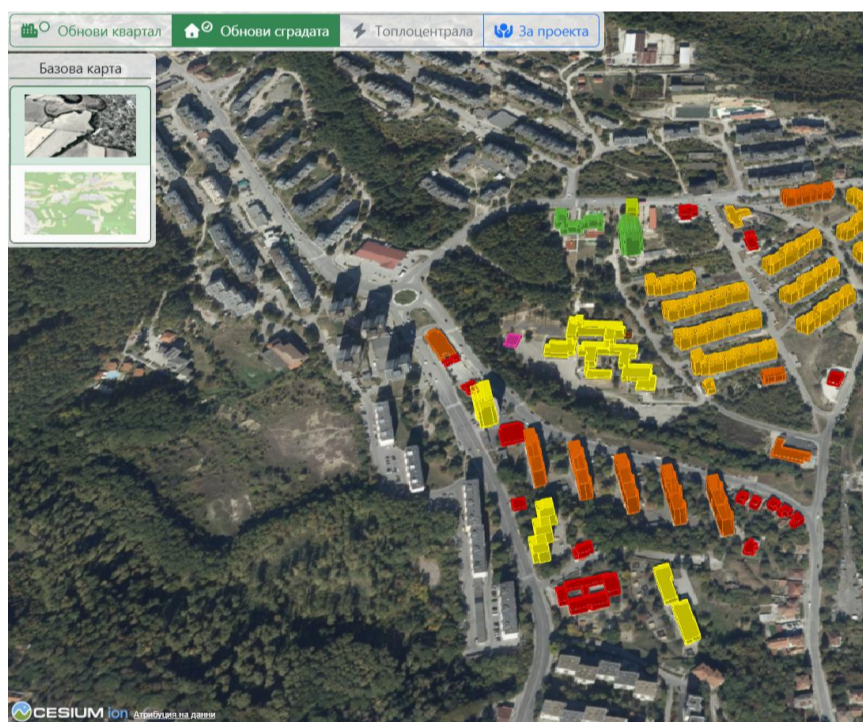
3D District Energy Model & Calculator - <https://gabrovo.bg/web-gab3d-calc>

Digital Technology: A unique 3D digital twin of the pilot area. This interactive tool allows visualization of energy scenarios for all 44 buildings.

Interactive Decision-Making: The model functions as a dynamic calculator. It allows people to compare different scenarios—from standard renovations to the **EnerPHit (Passive House)** level—showing exactly how each single measure impacts the district's carbon footprint and energy bills.

Data-Driven Decisions: The model calculates renovation impacts, PV potential, and CO2 reduction for every single entrance. It bridges the gap between complex engineering data and citizen engagement, making the transition transparent and understandable for everyone.

A Tool for the People: Beyond engineering, this 3D model is our primary engagement tool. It translates complex technical data into a clear, visual format that helps residents see the future of their homes, fostering trust and active participation in the **Energy Community**.



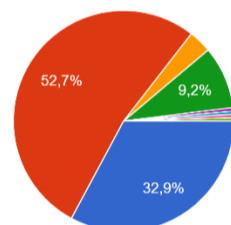
Citizen Engagement & Social Readiness

Strong Community Support: Over **85%** of residents are interested in the new centralized biomass heating system, prioritizing higher comfort and competitive energy prices.

Investment Readiness: More than **80%** of surveyed citizens are willing to co-finance the transition, provided the investment is recovered through long-term energy savings.

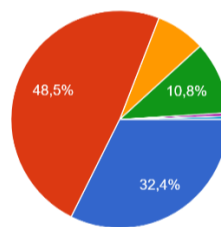
Affordable Transition: The majority of residents are prepared to invest between **€250 and €500**, demonstrating that local energy solutions are economically accessible when supported by clear financing models.

Бихте ли желали вашето жилище да бъде снабдявано с централизирано отопление, при условие че цената е конкурентна или по-ниска...и от топлофикационните дружества в страната?
207 отговора



- ДА
- По-скоро ДА, но се нуждая от повече информация
- По-скоро НЕ, но се нуждая от повече информация
- НЕ
- Мисля че 90% от хората няма да по...
- Как точно цената е по-ниска от тази...
- Кой дава гаранция, че цената ще е к...
-

Бихте ли участвали в инвестицията при условие, че сумата ви бъде възстановена в периода на експлоатация на системата? (Инвестицията щ... със средства на общината и на гражданите.)
204 отговора



- ДА
- По-скоро ДА, но се нуждая от повече информация
- По-скоро НЕ, но се нуждая от повече информация
- НЕ
- Не знам дали ще е по възможностите ми
- Колко от отпуснатите инвестиции ще бъдат усвоени от "правилните" фир...



The Business Case “Financing & Governance”

Investment Needs:

National Standards + PV: €11.40 million (€138/m).
 EnerPHit + PV (The Hero Plan): €19.04 million (€230/m).

Solar payback period: 9.1 years.

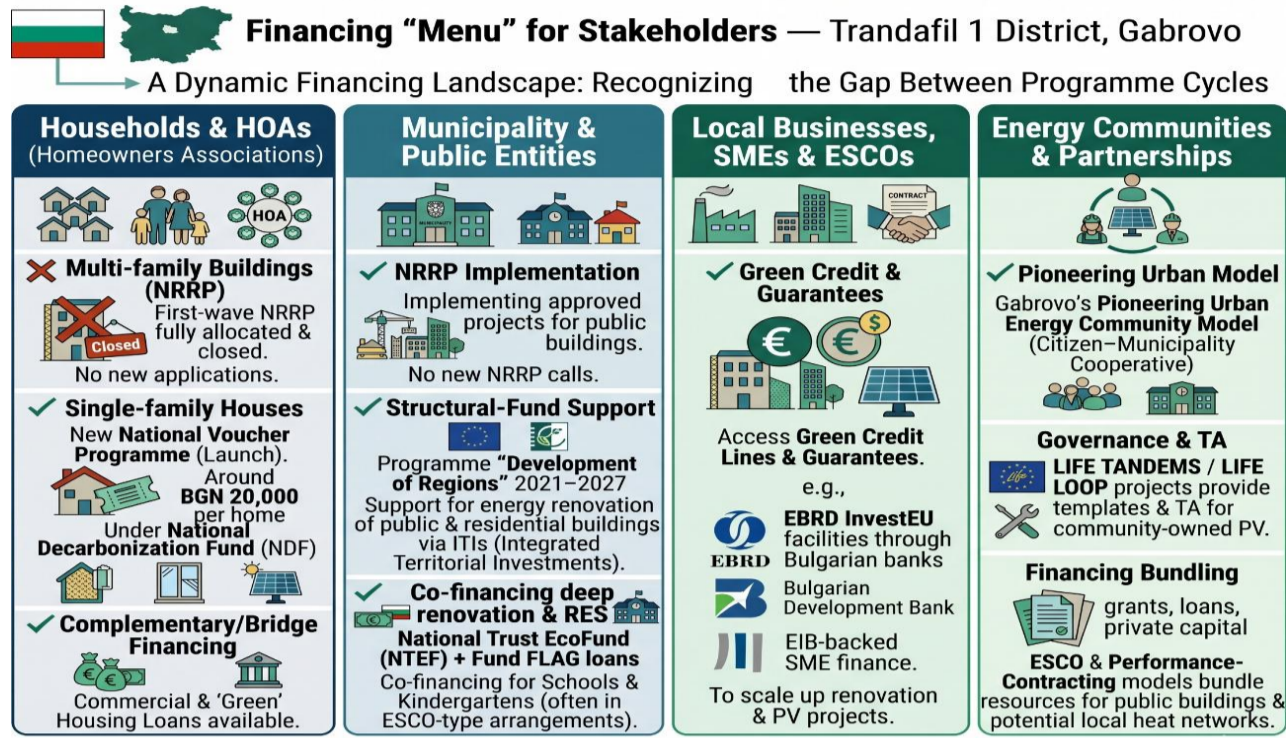
Total district energy bills: drop from €1.59 million/year to just €389,000/year.

Payback & Savings:

Energy Communities: Establishing a pioneering Citizen-Municipality Cooperative for collective self-consumption.

Household Support: Leveraging BGN 20,000 vouchers and commercial "Green" housing loans.

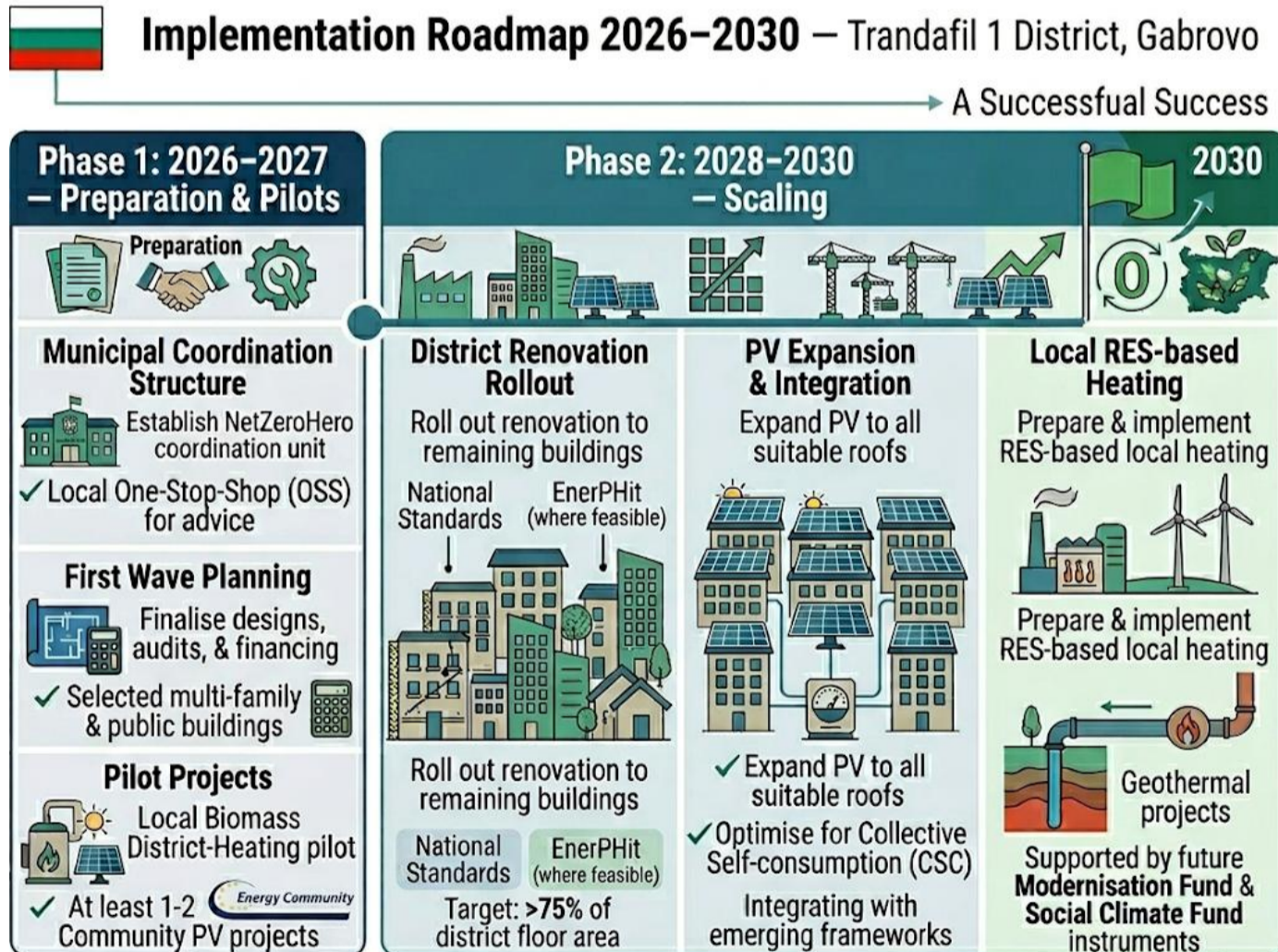
Public Funds: Utilizing "Development of Regions" 2021–2027 and NTEF/Fund FLAG for deep renovations.



Source: NetZeroHero Plan — Trandafil 1 District, Gabrovo, DistrictPH modelling 2024–2030 calculation period.

Implementation Roadmap (2026–2030)

Phase 1 (Preparation): Setup of a One-Stop-Shop (OSS) for advice and launching community PV pilots. **Phase 2 (Scaling):** Roll out renovations to >75% of district floor area and integrate RES-based heating (Biomass/Geothermal).



Source: NetZeroHero Plan — Trandafil 1 District, Gabrovo, DistrictPH modelling. 2024–2030 calculation period.

This plan proves that typical socialist-era districts are not "lost causes" but are instead the primary frontier for the European Cities Mission

For more information go to: <https://www.gabrovo.bg/bg/article/21564> & <https://netzerocities.eu/gabrovo-pilot-activity-netzerohour/>

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