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PilotInnCities

Summary of Agile Pilot Tatarski Microgrid for a small energy community

Company name	TATARSKI SRL
Company location	Bucharest, Romania
Domain	Green energy, digital solutions
Municipality	Bucharest, Sector 5
Project period	November 2025 – June 2026
Solution	Microgrid for a small energy community
Stakeholders	District 6 City Hall of Bucharest IntreVecini - A local NGO for communities in residential blocks Greenpeace Romania - for the specific energy communities campaign EFdeN - the NGO hosting the hardware equipment of the photovoltaic systems Darcom Energy - the photovoltaic systems supplier
Lessons learned	Aggregated indicators are insufficient for three-phase energy communities and granular phase-level data is essential; Piloting in real, active-use environments surfaces issues (e.g. phase imbalance) that controlled settings would not reveal; Unified visibility across all systems is critical for community-level energy decision-making; Regulatory incompleteness should not block deployment, as pioneering pilots help build the evidence base for future regulation; Agile iteration cycles are essential for real-world microgrid deployments.
KPI 1 Adoption & usage	Real-time monitoring was achieved across 100% of the six installations (five distributed PV systems and the campus general electrical panel), with all Victron Energy Cerbo GX nodes reporting via MQTT (~3-second refresh) with REST API fallback to the custom web platform.
KPI 2 Time savings	The platform automates the community self-consumption calculation (total PV production minus grid export at the community boundary), eliminating manual data collection and computation that would otherwise be required across six separate monitoring points.
KPI 3 User experience	24/7 public access to live and historical data is provided via the custom web platform (microgrid.up.railway.app), giving stakeholders continuous visibility into community energy performance.
Evaluation of the business model focusing on its viability and potential for growth	The pilot demonstrates a replicable, low-cost monitoring architecture (MQTT with REST API fallback) that can be deployed across other multi-building or campus-style energy communities. Its viability is reinforced by the fact that a working self-consumption methodology was developed in the absence of applicable national regulation, positioning the solution to scale rapidly once Romania's energy communities framework (in force since November 2025) matures. Growth potential lies in extending the platform to additional buildings, municipalities, and PV-equipped energy communities.

Impacts	The pilot surfaced a significant structural phase imbalance across the three-phase installations, a finding that would not have emerged in a controlled test setting. Phase inversion issues identified during deployment were successfully resolved. The project also validated a working collective self-consumption calculation methodology in the absence of applicable regulatory norms, generating evidence to inform Romania's emerging energy communities framework.
Suggestions for future actions, especially focusing on sustainability and replication	Findings and methodology will be disseminated at future events and conferences to support replication. For sustainability, continued engagement with ANRE, the main regulatory institution at the national level, is recommended to align the platform with the maturing national regulatory framework, alongside extension of granular, phase-level monitoring to future energy community pilots.
Next steps	Integrate full quantitative operational data (kWh produced and measured self-consumption percentages over the complete operational period) into the final report; finalize Annex C1 (Output Quality Report) and Annex C2 (Output Factsheet); and submit the completed final report and annexes under PilotInnCities.
Provider's Reflection	From the perspective of the PV systems supplier, the pilot demonstrated clear commercial value: unified, real-time visibility across distributed PV assets simplifies maintenance, validates system performance, and strengthens the business case for deploying similar monitoring solutions at other PV installations.
Municipality's Reflection	The Municipality of Timişoara views the pilot as a pioneering reference case for energy communities in Romania, providing practical evidence and a working self-consumption methodology that can help shape and inform the application of the national energy communities legislation introduced in November 2025.
Expert's Reflection	From a technical perspective, the project confirmed that granular, phase-level monitoring is indispensable for three-phase energy communities, and that real-world piloting under live operating conditions, rather than controlled testing, is necessary to surface issues such as structural phase imbalance and ensure that the solution would lower the inflows of solar energy into the grid at peak hours, thus reduce the risk of overvoltage.