



GCC-SYNERGY

Digital Solutions for Electricity Consumption by Global Climate Community

IZMIR, TÜRKIYE

Emissions domains addressed by the Pilot Activity



Consumption of
electricity
generated for
buildings, facilities
& infrastructure

Key Terms

Digital platform | Electricity monitoring | Energy efficiency | Solar PV forecasting | Digital twins | Industrial decarbonisation | Incentive mechanisms | Policy frameworks | Citizen engagement | Smart city

Levers of Change

Data and Digitalisation | Learning and capabilities | Social innovation | Technology/infrastructure

Description of the Pilot Activity

GCC-SYNERGY is building a digital platform to help institutions, industries, and citizens in Izmir monitor, analyse, and reduce electricity consumption — a sector accounting for approximately 30% of the city's total carbon emissions. The platform integrates pilot consumers across industrial, commercial, and public buildings alongside solar energy producers, enabling real-time monitoring, digital twins for load forecasting, tailored efficiency solutions, and neighbourhood-scale solar PV forecasting.

Year One Highlights

Stakeholder mapping engaged 141 participants across municipalities, industry, the energy sector, and academia, with findings feeding directly into platform requirements. Digital twins were prepared for each pilot consumer and tailor-made efficiency solutions designed, with site visits ensuring customised integration models for each location. An incentive and policy framework was developed and assessed for effectiveness. Training materials were prepared, and dissemination reached professional, academic, and civic audiences through conferences and media coverage.

The platform's complexity — security requirements, multi-source data pipelines, and role-based access — exceeded initial estimates. The decision to tender externally rather than develop in-house was taken to ensure a more robust technical foundation, even at the cost of timeline. Initial stakeholder hesitation around data privacy and system security was addressed through transparent communication and participatory design, and has largely been resolved. Economic instability required more active budget management throughout the year.

Innovation Highlights

The neighbourhood-scale solar PV forecasting methodology moves beyond building-level assessment to identify where photovoltaics deliver greatest district-level impact. Digital twins enable scenario analysis for each pilot consumer, supporting tailored recommendations rather than generic guidance. The multi-stakeholder platform design gives different user groups — municipalities, industry, citizens, academia — differentiated access and interfaces reflecting their distinct needs and capabilities. Focus on the participatory specification process

Twinning with Larissa (Greece)

Izmir is sharing its structured approach to climate data collection, smart city and IoT cooperation models with industry, and neighbourhood-scale solar methodology. Larissa is contributing neighbourhood-level participation methods, smart urban lighting practice with impact assessment, and local regulation and financing approaches for renewables

