



This project is co-financed by the
European Union and the Republic of Turkey
Bu proje Avrupa Birliği ve Türkiye Cumhuriyeti tarafından
finanse edilmektedir



Emin Batur Dizdar

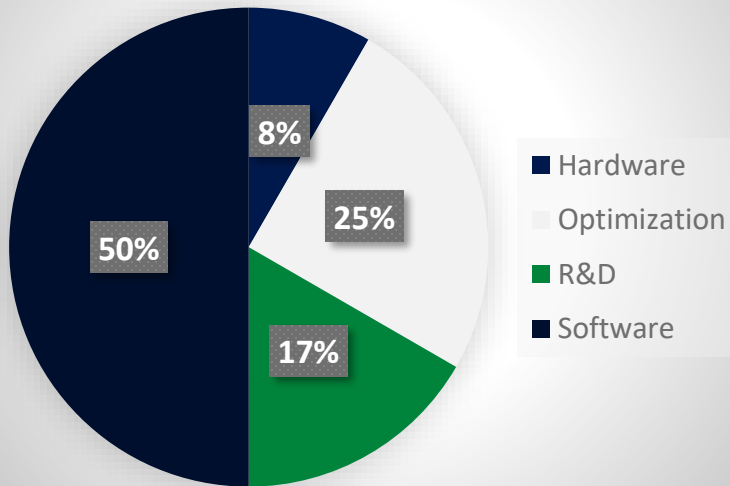
Ratio Technologies

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Description of the Organization

Technical Team



Founded: 2019

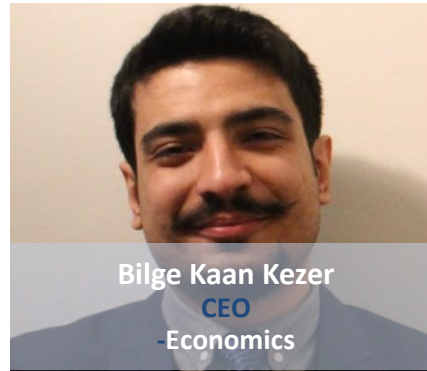
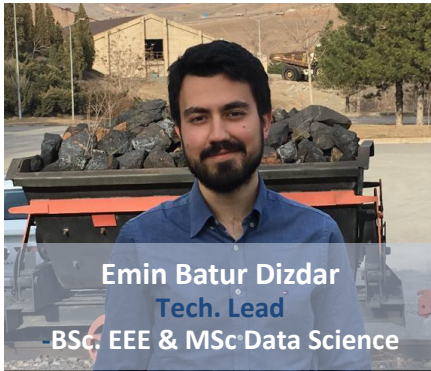
- ✓ Tailor-Made R&D and Decision Support Systems
- ✓ Multi-objective Optimization, Data Science and IoT
- ✓ Energy, Mining & Smart City Applications



Üniversiteler Mah. ODTÜ Teknokent - Ankara

Description of your research interest

TEAM



Description of your research interest

Past Research and Innovation Activities:

- *R&D for Manageable Industrial Network Switch - KOSGEB*
- *Battery Energy Storage Optimization System - TUBITAK*
- *Innovation Center Project for UNDP*
- *K-City 2020 Smart City Grant – Disaster Management Platform*



Academic Works:

- Optimization Of Turkey's Wind Power Regional Allocation
- Operations Research for Renewable Energy Systems –*In Progress*
- Real-time Fault Detection And Warning Systems –*In Progress*

Description of your research interest

Energy

Mining

Smart Cities

Manufacturing

Single-Point of Interaction – User Friendly UI

Domain Specific
Algorithms and Rule-
Chains

AI Algorithms for
Predictions and
Forecasts

Meta-Heuristic
Optimization
Algorithms

Distributed Data Management Clusters – Cloud

Relational & NoSQL Data

Geospatial Data

Streaming Data - IoT

Datatype Standardization

Project Idea

HORIZON-CL5-2022-D3-01-08: Supporting the action of consumers in the energy market and guide them to act as prosumers, communities and other active forms of active participation in the energy activities



-main destination-

- **(3):** Making energy supply more sustainable, secure and competitive

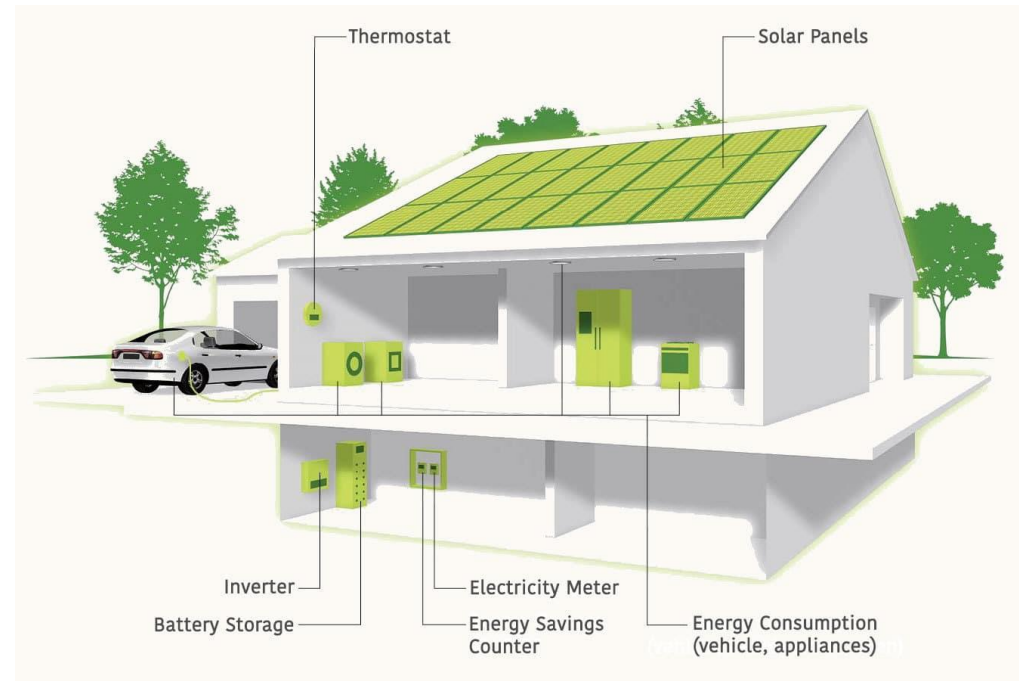
-cross-cutting destinations-

- **(2) & (4)**

-key strategic orientations-

- **C & D**

Deadline: **26 April 2022**



Project Idea

Drivers:

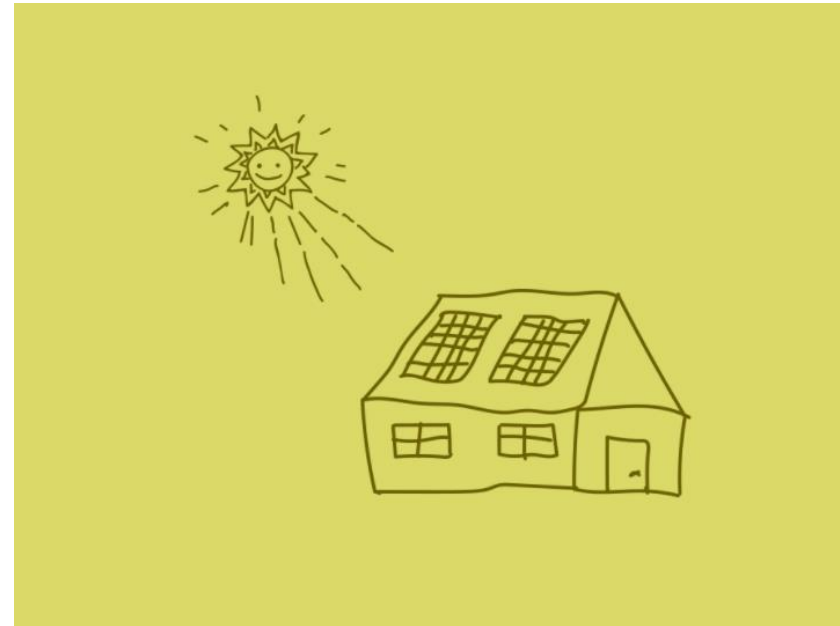
- **%82** reduction in Solar Costs & **%88** reduction in Li-Ion costs (BloombergNEF)
- **230 million EV's** on the road **by 2030** (IEA)
- EU Net-zero by **2050**

2026



C&I Microgrid Market **\$18 billion**

CAGR **%28**



source: <https://www.consilium.europa.eu/en/5-facts-eu-climate-neutrality/>

Project Idea

Pain Points:

- High-system costs
- Limited revenue streams for end-users
- Complex and multi-vendor systems
- Do not consider the grid and the whole system
- Can't utilize locally aggregated systems



Objectives:



- New & Secure **shared energy market**
- **Ease usage** of distributed assets
- Introduce novel revenue streams for end-users
- **Improved synergy** between grid operators & prosumers
- **Streamline participation** of distributed energy sources

Project Idea

Expected Outcomes:

- 1. Distributed & democratic energy sharing market***
- 2. Vendor agnostic & plug-and-play optimization platform***
 - Automated EV charging
 - Automated IoT device management
 - Optimize battery charge/discharge
 - Track grid requirements
 - User-friendly mobile interfaces
- 3. An energy pricing model fit for energy sharing***
 - Within the energy community
 - In-between grid operator and prosumers



Consortium - required partners

| No | Expertise | Type | Country | Role in the project |
|----|---------------------------|------|---------|---|
| 01 | Inverter Manufacturer | | | Integration of the optimization algorithm on top of hardware |
| 02 | Utility | | | Active participation and support in grid connection and regulation steps of the pilot project |
| 03 | EPC | | | Building the infrastructure for a pilot energy community |
| 04 | Energy Markets & Finance | | | Research for the best market models and mechanisms for prosumers |
| 05 | EV Charging Manufacturer | | | Integration of EV chargers with the optimization algorithm |
| 06 | Smart Energy IoT Producer | | | Integration of Smart energy efficiency devices with optimization algorithm |



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Thank You!

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