

A New Model for Jointly Purchased Energy Services in Turkish Industrial Parks

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Organized Industrial Parks (OIZs) in Turkey

- There are 234 actively operating industrial parks in Turkey
- This is one of the best industrial park models in the World. OIZs are initially founded as public entities but governed by a board formed by both public and private managers.
- They jointly purchase services including power, natural gas and water
- Cumulative electricity consumption of most of the parks are more than 50 million kWh.

S-PARCS H2020 Project

- S-PARCS: New energy efficiency service models in industrial parks
- S-PRACS include some of the biggest lighthouse industrial parks in Italy, Austria, Spain and Portugal.
- The project also includes some Follower Parks (most of them are in Turkey) that will learn from good energy efficiency practices of Lighthouse Parks.
- The projects aims to reduce energy costs and consumption in the Industrial Parks and also aim at increasing the production of renewable energy in industrial parks.

Jointly purchased electricity services

- In terms of electricity and natural gas services, industrial park management acts as a distribution company.
- In the past, industrial park management purchased electricity through bilateral agreements and sold them to their companies after adding some transaction cost.
- Over the last few years, as a result of establishment of daily electricity market in Turkey, industrial park companies started purchasing electricity from retail companies with a tariff that depends on prices set in daily electricity markets. In addition, government started to collect renewable energy feed-in-tariff payments from industrial customers, proportional with their consumption.

Current problem with Joint Power Purchase

- After 2019, OIZs that obtain electricity from retail companies started to see some price hikes as the tariff determined by the market regulatory authority (EMRA) started to use a different formula in calculating the tariff.
- The price determining factor started to become the electricity market clearing price plus the shared cost of feed-in tariff supporting electricity generation from renewable energy sources in Turkey:

Year	Unit feed-in-tariff cost (TL/MWh)	Electricity market clearing price (TL/MWh)	Final resource supply tariff for big customers (TL/MWh)	% change from previous year	Retail Electricity Price (TL/MWh)
2016	24.37	148.32	172.69		205.219
2017	34.246	168.11	202.356	17.18	205.219
2018	52.859	179.772	232.631	14.96	229.814

New business models for Joint Power Purchases in order to solve the problem

- Licenced and unlicensed production of electricity from renewable energy sources should be increased within industrial park borders. This has the advantage of electricity is produced where it is consumed and will reduce the load on transmission and distribution grid, make use of local energy resources and cause some decrease in energy costs. Further, electricity produced by industries via roof-top applications will be supported by feed-in-tariff mechanism for 10 years.
- The electricity needed by companies can be purchased hourly one day in advance by park management from daily electricity markets. For this, OIZs need to establish their own electricity wholesale trading company. OIZs can reduce electricity costs in this way. Wholesale purchase of electricity from the market for individual companies inside OIZs is not a viable option; however, high consumption industries within the borders of OIZ can come together and make an agreement with an aggregator who can search for cheaper electricity in the market on their behalf. Instead of OIZs or individual companies establish a wholesale trading company, this seems a much efficient approach.