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INCREASE THE SHARE OF RENEWABLE ENERGY IN INDUSTRIAL AND LOGISTIC PARK BURGAS

CONGREGATE

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BASELINE

Already installed PV plants.

Use of geothermal energy.

Just a few companies provided detailed information for the installed capacity and the load profiles.

OPPORTUNITIES FOR COOPERATION

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Scope of activities	Applicable technologies	Participants	Commercial aspects	Regulatory issues
Electricity for own use	PV/other, batteries, energy management	Owners in a common entity, entity group	Governed by a contract for participation	Need to coordinate a change in a project design (electrical part)
Electricity for own use and exchange with the grid	PV/other, batteries, energy management, commercial measurement	Owners in a common entity, entity group	Contracts with energy trader and electricity distribution company are required	Need for Legal entity, party to the contracts
Virtual power plants	RES generation Digital environment	Investors	Development of a trading platform	Licensed energy trader and business model
Energy efficiency services	Combination of technologies for consumption, production and management	Owners in a common entity, entity group, ESCO	Contract for energy management, contracts with energy trader and electricity distribution company	Complete energy project; Legal entity party to the contracts
Provision of utilities	Combination of technologies for consumption, production and management	Municipality, Industrial Zone, PPP	Own governance structure	Licensing of production, distribution, trading

LOAD PROFILES

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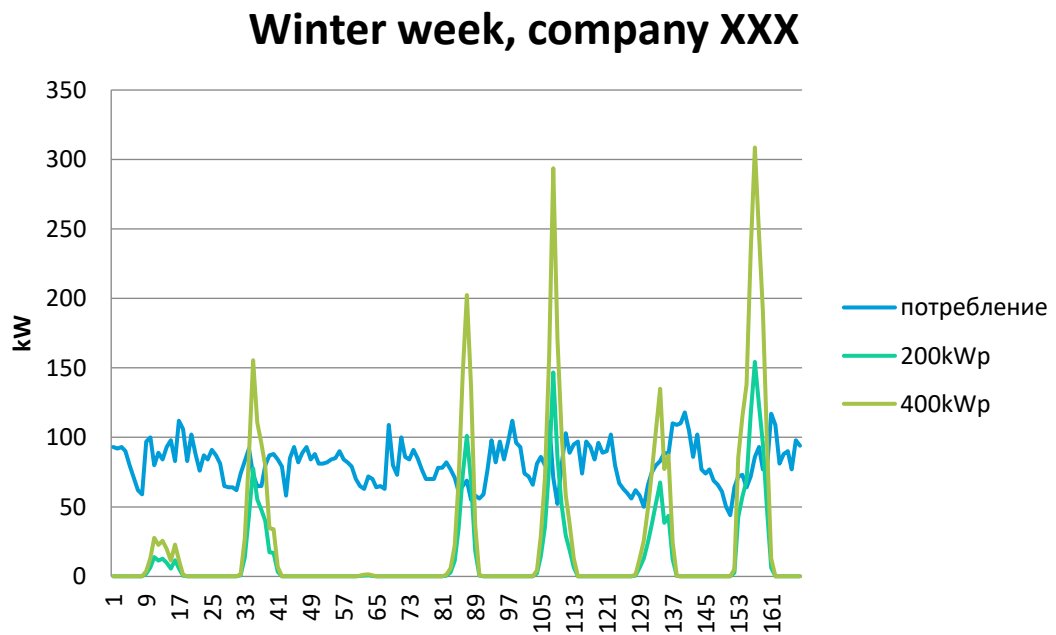

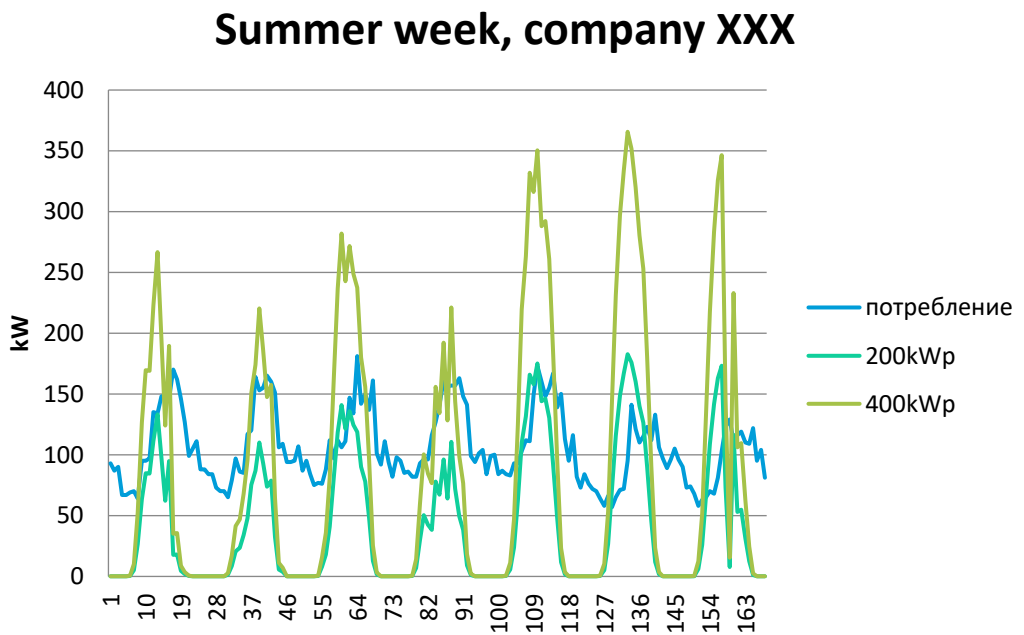

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SCENARIO 1

- Individual solutions – Business As Usual

  - Advantages
    - Established solution, everybody is doing exactly this

  - Disadvantages
    - Covers low percentage of the actual consumption
    - High share of energy to the grid
    - A lot of fees still exist
    - Not suitable for all (large consumer - small roof and vice versa)

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SCENARIO 2

- Cooperation within the Industrial zone

  - Advantages
    - Higher percentage of the produced energy is used on site
    - Reduction of additional fees
    - Constant electricity price over a long period of time

  - Disadvantages
    - Regulations still not supporting energy cooperatives
    - Leading partner is required
    - Additional expenses for design and construction
    - Need of load balancer

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SCENARIO 3

- Cooperation within the Industrial zone and connection to anaerobic plant

  - Advantages
    - Almost full use of the produced energy on site
    - Constant electricity price over a long period of time
    - Better balancing through the anaerobic plant
    - Even lower fees

  - Disadvantages
    - Regulations still not supporting energy cooperatives
    - Additional expenses for design and construction

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COMPARISON OF THE RESULTS

- Final price in scenario 3 - 287 BGN/MWh (annual appreciation of 1.4% for the first 10 years).
- At energy price below 210 BGN/MWh (excluding fees) it is more profitable to keep the BaU scenario.
- Cooperative or individual solutions, comparison:

Company XXX, existing PV plant with 515 kWp	Standard contract (2021)	Standard contract (2022)	Contract with the copperative	Members of the cooperative
Price of the energy from the PV, BGN/MWh	344	344	344	287
Price of the purchased energy, BGN/MWh	226	235	197	0
Price of sold energy, BGN/MWh	-183	-246	-188	0
Average annual price, BGN/MWh	**388**	**333**	**354**	**287**

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CONCLUSIONS AND RECOMENDATIONS

- There is still a lack of ready-to-implement contractual and legal models for cooperation.
- At this stage, the leading role of the initiator of the cooperation, around which the different actors can unite, is crucial.
- The price levels achieved are competitive with the current electricity prices.
- The efficiency of investments can be significantly increased by the implementation of 'smart' solutions.
- The possibility of balancing the loads through the anaerobic plant allows maximum utilisation of the produced energy on site.

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THANK YOU FOR YOUR ATTENTION!

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