

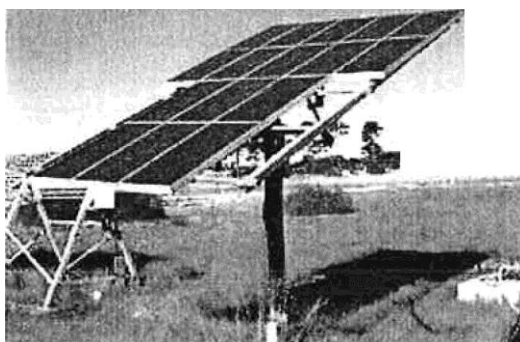
REPORT

For Assessment of the Degree of Impact on Protected Zone

“MARITSA PARVOMAY” (BG0002081)

BY

**“DETAILED DEVELOPMENT PLAN FOR CHANGE OF PERMANENT USE OF
REGULATED LAND PLOT I TO REGULATED LAND PLOT XXVII, QUARTER 119
(PROPERTY # 000119, ACCORDING TO THE MAP OF RESTORED OWNERSHIP)
IN KARADJALOVO VILLAGE, MUNICIPALITY OF PARVOMAY, PLOVDIV DISTRICT
WITH THE OBJECTIVE OF CONSTRUCTING A PHOTOVOLTAIC POWER PLANT
WITH CAPACITY OF UP TO 50 MW.”**



Investor: INTERZONA Ltd. Plovdiv

Prepared by:

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February 2011

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INVESTOR'S DETAILS

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INTRODUCTION

The Report for Assessment of the Degree of Impact of Investment Proposal for “DETAILED DEVELOPMENT PLAN FOR CHANGE OF PERMANENT USE OF REGULATED LAND PLOT I TO REGULATED LAND PLOT XXVII, QUARTER 119 (PROPERTY # 000119, ACCORDING TO THE MAP OF RESTORED OWNERSHIP) IN KARADJALOVO VILLAGE, MUNICIPALITY OF PARVOMAY, PLOVDIV DISTRICT WITH THE OBJECTIVE OF CONSTRUCTING A PHOTOVOLTAIC POWER PLANT WITH CAPACITY OF UP TO 50 MW.” with the subject and purpose of protection of the **protected zone “MARITSA PARVOMAY”**, with identification code BG0002081, is prepared on the Detailed Development Plan – Building-up-Plan stage of the Investor’s assignment made under Article 2, paragraphs 2 and 3 and in compliance with plans, programmes, projects and investment proposals that are promoting protection of special areas of conservation (State Gazette, issue 73/2007).

Decision PV-3-EO/2011 of the competent authority: Regional Inspection of Environment and Water – Plovdiv (RIEW Plovdiv) defines the need of preparation of Report for Ecological Assessment and Report for Assessment of the Degree of Impact with the requirements under Article 23, paragraph 2 from the Ordinance concerning the scope and content of the report.

The report is developed according to the requirements under Article 23, paragraph 2 from the Ordinance concerning the conditions and procedures for assessment of the compatibility of plans, programmes, projects and investment proposals with the subject and purposes of the protection of the special areas of conservation under Article 9, paragraph 1 from the Ordinance.

In the process of preparation of the following Report, the Investor also presented the following documents:

- ✓ Extracts from a topographic map on the scale of 1 : 100 000;
- ✓ Extracts from a topographic map on the scale of 1 : 50 000;
- ✓ Extracts from a topographic map on the scale of 1 : 25 000;
- ✓ Situational scheme on the scale of 1 : 10 000;
- ✓ Decision # KZZ-8/29.11.2006 of the Ministry of Agriculture and Forestry concerning the Change of Permanent Use of the land to “land for manufacturing and storage activities”;
- ✓ Order # RD-15-6-12/13.09.2006 by the Mayor of Parvomay municipality regarding the approval of the Detailed Development Plan – Zoning Plan –Building-up Plan of the concerned property;
- ✓ Order # RD-15-798/26.11.2010 by the Mayor of Parvomay municipality regarding the approval for the Change of Permanent Use of Regulated Land Plot I - Regulated Land Plot XVIII to “land for manufacturing and storage activities” and the Change of Permanent Use of Regulated Land Plot XXIX to “transport”;
- ✓ Letter # EIA-204/29.04.2010 by RIEW Plovdiv concerning the unnecessary of preparing an Assessment for Environmental Impact for cable line 20 kV, part of the substation 110/20 kV “Borisovgrad” Regulated Land Plot IX, quarter 165 of the Parvomay town’s plan which is stretched to industrial estate “Karadjolovo”.
- ✓ Preliminary adhesion contract with Natsionalna Elektricheska Kompania EAD for power producer to transmission network # EP-319/09.06.2010.

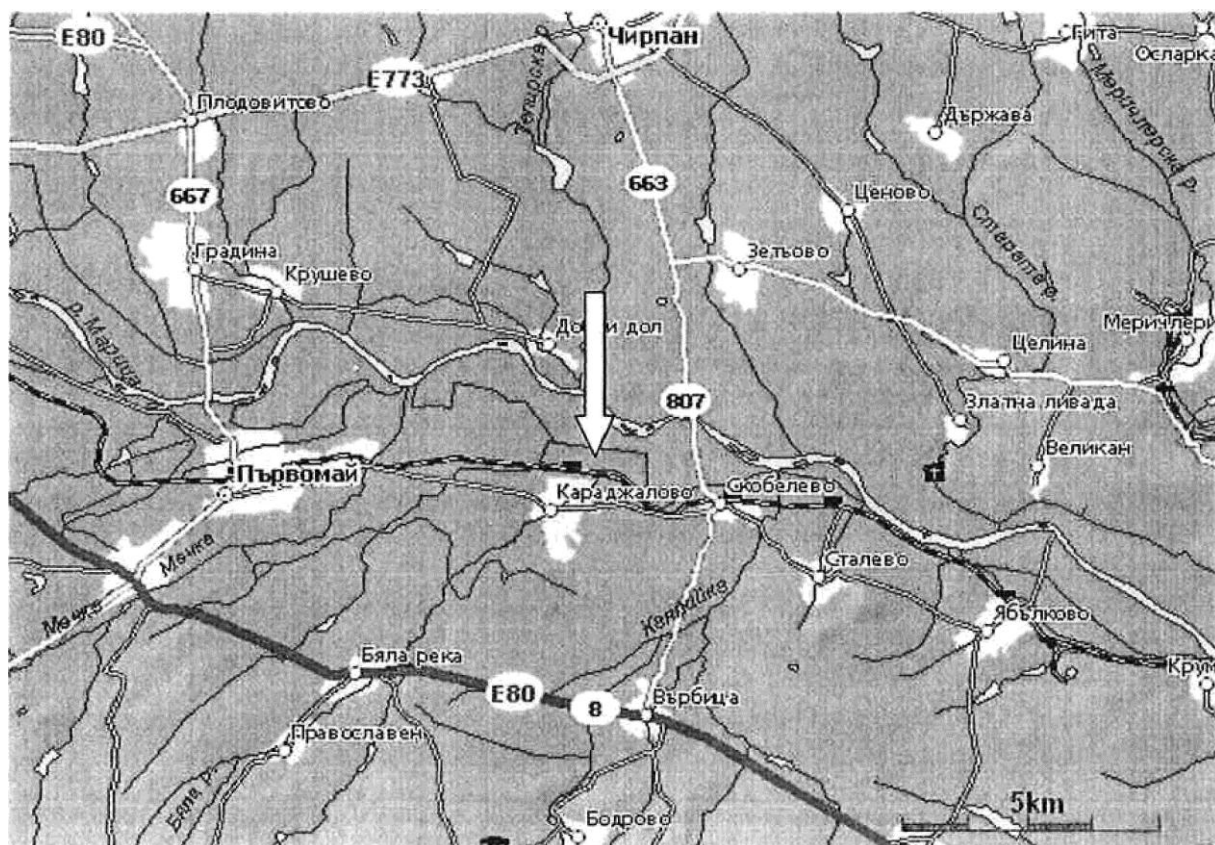
During the preparation of the Report for Ecological Assessment consultations with the following parties were organized : Municipality of Parvomay, Town-Council of Karadjolovo village, RIEW-Plovdiv, Regional Health Inspection – Plovdiv, River Basin Directorate – Plovdiv, Ministry of Environment and Water – Subsurface and Underground Resources Department, Bulgarian Society for the Protection of Birds and Green Balkans Federation Plovdiv, ViK EAD Plovdiv, Napoitelni sistemi EAD Plovdiv, National Institute for Cultural Heritage to the Ministry of Culture, Sofia.

1. ANNOTATION

The proposal which provides for the preparation of Detailed Development Plan – Building-up Plan will serve as an instrument for approval of the Change of Permanent Use of Regulated Land Plot.

The construction site for the photovoltaic power plant, is situated in “Merata” area: Regulated Land Plot I to Regulated Land Plot XXVII, quarter 119 (former property # 000119, according to the Map of Restored Ownership) on the land of Karadjalovo village (Unified Classification of Administrative-Territorial and Territorial Units („EKATTE“) 36230), municipality of Parvoday, Plovdiv district. To this land, with a new Order # RD 15-798/26.11.2010 by the Mayor of the municipality of Parvoday, another plot was appended: Regulated Land Plot XXVIII (which is regulated for the same purpose) and Regulated Land Plot XXIX (regulated as “transport”). The location of the site is presented on extracts from topographic maps on the scale of 1: 100 000, 1: 50 000, 1: 25 000 and from a situational scheme on the scale of 1 : 10 000 and on the building-up plan for Regulated Land Plot 000119 on the land of Karadjalovo village.

The land is situated about 500 meters north from the regulated borders of Karadjalovo village and about 9 km east from the town of Parvoday.



The coordinates of the site's border points are as follows:

#	Point name	x	y
1	10780	4598400.800	9408007.600
2	14025	4598250.675	9409527.187
3	40692	4598055.879	9409445.669
4	40686	4598084.819	9409546.039
5	40682	4598023.680	9409572.279
6	10337	4598154.900	9409741.500
7	10211	4598110.800	9409822.301
8	1000033	4598132.507	9409988.022
9	96	4598102.500	9410049.515
10	95	4597488.403	9409982.108
11	8743	4597604.500	9409885.699
12	9174	4597720.900	9409778.801
13	9351	4597766.400	9409722.900
14	9458	4597796.800	9409652.699
15	9384	4597773.800	9408987.801
16	9455	4597795.800	9408716.600
17	9665	4597872.400	9407949.600

During the construction and operation of the site it will not be necessary to use additional land outside the designated site.

The necessity to implement the plan is defined by a combination of groups of factors such as economic, social, political and environmental factors.

On 16th February 2005 the Kyoto Protocol (signed 1997) to the United Nations Framework Convention on Climate Change entered into force. It is an important step in the global fight against climate change. It requires from the industrialized countries to meet certain restrictions in their emissions of greenhouse gas. The European Union has set a target for the period 2008-2012 to reduce its emission levels by 8 % compared to the levels in 1998.

Renewable energy, energy efficiency and saving energy are the cheapest, the safest and the most reasonable, from nature and society point of view, ways to achieve reductions in greenhouse gas emissions in the Energy sector. Renewable energy sources such as wind, solar installations, thermal and geothermal energy, biomass and wave energy can fulfill this target. In the meantime a priority is given to energy effectiveness and energy conservation measures. According to Greenpeace, the energy from renewable sources together with energy efficiency, can provide 25 % of Europe energy consumption to 2020.

Currently, Renewable Energy Sources activities the EU-member-states are defined in Directive 2009/28/EC of the EUROPEAN PARLIAMENT AND COUNCIL from 23rd April 2009 for the encouragement of the use of energy from renewable sources and for amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC. It sets a primary target for the improvement of energy efficiency in the Union, which targets a 20 % increase in energy efficiency by the year 2020. Appendix 1 formulates "National common targets for the share of renewable energy in the gross energy consumption during 2020 (1)".

For Bulgaria the share of renewable energy from the total energy consumption for 2005 (S_{2005}) was 9.4 % and it should reach 16 % in 2020 (S_{2020}).

It must be stressed that, to meet the national targets presented in this Appendix, the EU guidelines mention the permanent need of national mechanisms for incentives for the renewable energy.

The proposed Detailed Development Plan for a photovoltaic power plant is fully consistent with the requirements of several important Bulgarian legislative acts:

- ❖ Energy Act. Chapter 11. Promotion of electricity generation from renewable energy sources and cogeneration. Section 1. Electricity generation from renewable energy sources (State Gazette # 107/09.12.2003, amended and supplemented # 18/05.03.2004, # 18/25.02.2005, # 95/29.11.2005, # 30/11.04.2006, # 65/11.08.2006, # 74/08.09.2006);

- ❖ Renewable and Alternative Energy Sources and Biofuels Act (State Gazette # 49/19.06.2007);
- ❖ Ordinance # 14 of the Ministry of Regional Development and Public Works and the Ministry of Energy and Energy Resources on the technical rules and standards for design, construction and utilization of sites and equipment for electricity generation, transformation, transmission and distribution. Chapter 4 Technical rules and standards for design of energy sites for electricity generation from renewable energy sources (State Gazette # 53/28.06.2005);
- ❖ Spatial Development Act (State Gazette # 65/22.07.2003);
- ❖ Resolution # C-015/31.03.2008 of the State Energy and Water Regulatory Commission (SEWRC) concerning Determining of preferential selling price of electricity generated from hydroelectric power plants, wind power plants, photovoltaic power plants and via direct biomass combustion;
- ❖ National action plan for renewable energy sources (2011 – 2020);
- ❖ First national action plan for energy efficiency 2008 – 2010, adopted with a Resolution of the Council of Ministers dated 4 October 2007;
- ❖ National long-term program for promotion of renewable energy sources utilization 2005 – 2015, Ministry of Economy, Energy and Tourism/ Executive Energy Efficiency Agency, December 2005;

The Bulgarian economic policy is harmonized with the new, even stricter policy for restriction of non-environmental fuels and energy, which promotes the development of the renewable energy sector.

As of 1 January 2007, new feed-in tariffs for the purchase of energy generated from photovoltaic generators are in effect. Those generators reach up to 48 eurocent per kilowatt hour generated even with no quota and other restrictions. 100% of the generated energy has to be purchased at the preferential price. With the latest amendments of the Energy Act made in the autumn of 2006, a minimum feed-in tariff was introduced that should be in force for at least 12 years from the commissioning of the photovoltaic power station.

In this regard, the purchasing conditions for sun-generated electricity are one of the most favorable in the world, which of course evoked the interest of foreign investors not only from Europe, but also from the United States, and from other countries.

From an investment standpoint there are at least 10 factors that motivate investors to make medium-term and long-term capital investments in electricity generation from various types of photovoltaic modules:

The initial energy source is the sun, which is free and practically inexhaustible;

The operational control of the photovoltaic facility and systems is automatic and is executed remotely by energy distribution companies;

The maximum capacity of photovoltaic plants is generated during the day when the electricity consumption is at its maximum, which favors the optimal operation of the electric system;

The photovoltaic system does not require permanent operational personnel;

Photovoltaic power plants and stations have factory and service warranties for at least 20 years;

From all renewable energy sources with easy operational access, the sunlight is the easiest to capture;

Photovoltaic stations may be placed practically everywhere – on building facades and roofs, in yards and in the open on agricultural and forest terrains;

The purchase price for energy generated from photovoltaic stations in Bulgaria currently is up to 48 eurocents per kilowatt hour with VAT excluded, with tendency to increase together with the general energy price increase.

This purchase price is 10 times higher than the preferential price for energy generated by hydroelectric power plants and 5 times higher than the purchase price for energy generated by wind generators in our country.

The sunlight in combination with the other climate conditions makes Bulgaria one of the most appropriate locations for profitable utilization of sun light via photovoltaic plants;

Depending on the characteristics of the terrain for photovoltaic plants and its solar energy access, as well as on the technical resources for transformation of light into electricity, the time for investment return is between 5 and 9 years. This applies for investments with no subsidies. The current economic incentives given by European policies and European funds, just as the previous ones, ensure European subsidy of minimum 50% for private photovoltaic projects. Therefore the real investment return term is maximum 3-4 years.

There are many favorable conditions for investments in solar energy systems in Bulgaria. In Germany the sun radiation that covers an area of 1 square meter is approximately equal to 1000 kilowatt hour of energy per year, while in Bulgaria it is approximately 1500 kilowatt hour.

Despite the preferential price of 55 eurocents per kilowatt hour in Germany, which is 37.5% higher than the one in Bulgaria, the photovoltaic power plants are more profitable in Bulgaria.

The region selected for the location of photovoltaic generators has the required conditions and characteristics. The differential solar energy audit has proven the good prerequisites for the implementation of similar type of projects. The audit is related to the fact that semiconductors, in which electricity flows when exposed to sunlight radiation, do not react in a uniform way (and do not react at all to a significant part of the solar spectrum) to the whole spectrum range, whose wavelength varies from 200 to approximately 4000 nanometers.

The semiconductors react to relatively narrow bands in the solar spectrum range. The general spectrum band, which is electrically significant to photovoltaic stations (here we understand such wavelengths in the solar spectrum, which contribute to the flow of electricity) is the light visible to the human eye (approximately between 400 and 700 nanometers, in which band, the density of solar power is higher than 40% of the total density).

Infrared sunbeams with wavelengths over 700 nanometers, which are invisible to the human eye, determine the “heating” while the “solar shining” depends on the energy levels of the visible light (a value over 1.1 eV evokes electricity flow in the silicon semiconductors).

- The DDP-BP for the construction of the photovoltaic solar plant for energy generation, in this case, is extremely appropriate, due to the following criteria:
- The location of the site is in a region where fogs clear away very quickly;
- The Availability of sufficient area, which makes possible the implementation of a more profitable system;
- Lack of shading conditions – construction, trees and bushes.

The investor has the required financial, technical and staff resources for the construction of the project. This in combination with the property over the land and the quoted characteristics and advantages determines the viability and the need for implementation of the investment proposal.

The proposal complies with the provisions of “Regional Development Plan of the Southeast Planning Region 2007-2013 ”.

It does not affect or conflicts with the plan for land distribution and the map of restored property of the land of village Karadzhalovo, to the Forest Development and Hunting Development project of the State Forestry Parvomay and to other approved development projects or programs.

The investment proposal fully complies with the Development Plan of Parvomay municipality for the period 2007 – 2013.

Photovoltaics are semiconductors and when there is no energy impact on them, they are non-conductive. When irradiated with “power important” rays, they cause an electric current flow but also heat the semiconductors, which in turn reduces their “power generation ability”, and respectively, their electrical efficiency.

Photovoltaic systems are complete energy facilities that include, among panels, a number of other related components. Most essential for photovoltaic systems is their orientation towards the sun.

According to preliminary calculations, the construction of the plant will consist of the following components:

- **PHOTOVOLTAIC MODULES** – these are panels consisting of multiple solar cells that transform the solar energy into electricity. They should be installed on metal bearing constructions. The panels should be tilted at the optimal angle towards the sun with a possibility for horizontal movement southwards in the direction of the solar rays and vertical movement under an angle from 20° to 40°.
- **CABLES** – modules should be connected with cables with each other until a voltage of approximately 600 – 900V is reached. Then these separated groups are connected to inverter blocks. Cables should be pulled in underground secure pipelines.
- **INVERTER BLOCKS** – they transform the direct current in the modules into alternating current. The power transformers should be of dry type and should not contain any oils or other harmful substances.
- **DISTRIBUTION SYSTEM** – land area fenced with metal net and medium (high) voltage electricity equipment located on it.
- **ELECTRIC POWER LINE** – underground line that connects the Distribution system with the National electricity transmission and distribution network.
- **FENCE** – net fence with respective entrance doors should be installed along the outline of the property, designated for the photovoltaic plant.

There are many options for technical solutions for the implementation of the DDP-BP and the PVP, which are based on the technology principles stated above. The optimal technical solution will be subject to a developed technical project.

Sun energy audit and prior-design research were prepared according to instructions by SunEdison. They are the foundation for the DDP-BP and include location of modules,

inverters, connection of transformers to the new increasing substation 20/110 kV (CpH network) and the description of the connection of the small blocks to the inverters.

Due to the irregular dimensions of the site designated for the photovoltaic power station, structural rearrangements and new distributions in the connection of modules to the inverters should be carried out.

Photovoltaic modules generating permanent voltage should be used to transform solar energy into electricity. The voltage generated from them is transformed into alternating and injected in the electrical transmission network by specialized inverters, transformers and new increasing substation 20/110 kV.

In order to generate optimum voltage at the inverter's input and to increase the total plant efficiency, photovoltaic modules are consecutively connected in groups (strings). In order to generate optimum electricity at the inverter's input the strings may be connected in parallel.

The photovoltaic plant should consist totally of 216,972 pieces of modules, type TMS-280PC14 280W with the following technical characteristics:

Nominal peak power	Wp	280
Nominal voltage	V	36,01
Nominal electric current	A	7,78
Open circuit voltage	V	44,44
Short circuit current	KA	8,39
Temperature ratio P_{Tpp}	%/ °C	-0,45
Temperature ratio I_{sc}	%/ °C	0,05
Temperature ratio V_{oc}	%/ °C	-0,35
Working temperature	°C	-40°C~+85°C
Temperature range	°C	-40°C~+85°C
Maximal voltage DC	V	1000
Cells' type		multicrystal
Cells' number	#	72
Cells' size	mm	156x156
Module size	mm	1956/992/46
Weight	kg	28

We will define two terms for convenience:

- “Small block” – consists of 54 modules in 3 rows with 18 modules, with each row forming a string, i.e. the “small block” consists of 3 strings. Each small block has a maximum generating capacity of 15.2 kWp DC;
- “Large block” – consists of 103 “small blocks”, 14 string boxes, one inverter and one transformer. The capacity of the “large block” is 1.557 MWp DC.

PVP will have 25 complete “large blocks”, i.e. structurally proper distribution of “small blocks” and maximum loading capacity of the inverter and the transformer. Improper structural distribution of “small blocks” should be present in 15 of the “large blocks”, since 4 of them have incomplete load of the inverter and the transformer.

STRUCTURE AND COMPOSITION OF THE UNITS IN THE POWER PLANT

No. of inv.-transf.	No. big unit	Regular unit structure	No. small units in the irregular unit	Reached peaked power MWp DC
1	1	no	103	1,557
2	2	yes	103	1,557
3	3	no	103	1,557
4	4	no	40	0,605
5	5	no	103	1,557
6	6	yes	103	1,557
7	7	yes	103	1,557
8	8	yes	103	1,557
9	9	yes	103	1,557
10	10	no	103	1,557
11	11	yes	103	1,557
12	12	yes	103	1,557
13	13	yes	103	1,557
14	14	yes	103	1,557
15	15	no	103	1,557
16	16	yes	103	1,557
17	17	yes	103	1,557
18	18	yes	103	1,557
19	19	no	99	1,497
20	20	no	95	1,436
21	21	no	103	1,557
22	22	yes	103	1,557
23	23	yes	103	1,557
24	24	yes	103	1,557
25	25	yes	103	1,557
26	26	no	103	1,557
27	27	yes	103	1,557
28	28	no	103	1,557
29	29	yes	103	1,557
30	30	yes	103	1,557
31	31	yes	103	1,557
32	32	yes	103	1,557
33	33	yes	103	1,557
34	34	yes	103	1,557
35	35	no	76	1,149
36	36	yes	103	1,557

37	37	yes	103	1.557
38	38	no	103	1.557
39	39	yes	103	1.557
40	40	no	103	1.557
				60,739

- Description of the full big units in the power plant. In the attached drawing the following numbers are noted: 2, 6, 7, 8, 9, 11, 12, 13, 14, 16, 17, 18, 22, 23, 24, 25, 27, 29, 30, 31, 32, 33, 34, 36, 37, 39.
- Description of the structurally irregular units and the partially loaded inverters and transformers
 - ✓ Inverter-transformer No. 4 – 40 “small units” are attached to it and the maximum power reached is 0,605 MWp DC;
 - ✓ Inverter-transformer No. 19 – 99 “small units” are attached to it and the maximum power reached is 1,497 MWp DC;
 - ✓ Inverter-transformer No. 20 – 95 “small units” are attached to it and the maximum power reached is 1,436 MWp DC;
 - ✓ Inverter-transformer No. 35 – 76 “small units” are attached to it and the maximum power reached is 1,149 MWp DC;
- Descriptions of the 15 inverter-transformers, which take part in the formation of the structurally irregular “big units”, but operate at full power load and “small units” are connected to them.
 - ✓ Inverter – transformer No.3 – connected to it are 40 “small units” located under it, 51 units located on the left and 12 units located on the right;
 - ✓ Inverter – transformer No.4 – connected to it are 20 “small units” located under it, 18 units located on the left and 2 units located on the right;
 - ✓ Inverter – transformer No.9 – connected to it are 54 “small units” located above it and 49 units located under it.
 - ✓ Inverter – transformer No.10 – connected to it are 29 “small units” located above it and 74 units located under it.
 - ✓ Inverter – transformer No.15 – connected to it are 4 “small units” located above it, 91 units located under it and 8 units located under the above 91 units
 - ✓ Inverter – transformer No.19 – connected to it are 46 “small units” located under it, 52 units located under it – on the left and 1 unit located under it – on the right.

- ✓ Inverter – transformer No.20 – connected to it are 44 “small units” located on the left, 46 units located on the right and 5 units located under it – on the left.
- ✓ Inverter – transformer No.22 – connected to it are 52 “small units” located under it, 31 units located under it – on the left and 21 units located above it – on the left.
- ✓ Inverter – transformer No.26 – connected to it are 50 “small units” located under it, 47 units located under it – on the right and 6 units located above it.
- ✓ Inverter – transformer No.28 – connected to it are 52 “small units” located above it – on the left, 7 units and 4 units located on the left, 14 units located under it and 24 units and 2 units on the right.
- ✓ Inverter – transformer No.35 – connected to it are 44 “small units” located under it and 32 units under it – on the right;
- ✓ Inverter – transformer No.38 – connected to it are 45 “small units” located under it, 50 units under it – on the left and 8 units above it – on the right;
- ✓ Inverter – transformer No.40 – connected to it are 36 “small units” located under it, 8 units under the above 36, 39 units above it and 20 units above it – on the left;

The above described inverter-transformers included in the formation of structurally irregular “large blocks” and the numbers of their compiling “small blocks” are shown on the situational plan marked as the area in yellow and green.

The grid Cp.H in the power plant considers the number of the transformers CpH/HH and the number of commutation distribution devices (CDD) 20 kV in the new amplifying substation. 12 CDDs are foreseen in the new substation, from which 10 are active and 2 serve as a reserve. The number of the transformer stations in the power plant is 40. The grid CpH will be ring-shaped and the rings will be closed in the substation. Every branch (ring) will connect 8 transformers. There will be 5 branches.

CpH grid – number of transformers in a branch

No. Traf No. Branch	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Branch (number is illegible)																																								
Branch 2																																								
Branch 3																																								
Branch 4																																								
Branch 5																																								

Branch 1 begins from CDD1 in the substation, passes through transformers number 1, 2, 3, 4, 9, 8, 7, 6, and goes back to CDD2 in the substation. Branch 2 begins from CDD3 in the substation, passes through transformers number 5, 10, 11, 12, 13, 14, 19, 18 and goes back to CDD4 in the substation. Branch 3 begins from CDD5 in the substation, passes through transformers number 15, 16, 17, 23, 24, 25, 22, 21 and goes back to CDD6 in the substation. Branch 4 begins from CDD7 in the substation, passes through transformers number 29, 30, 31, 32, 26, 38, 37 and goes back to CDD8 in the substation. Branch 5 begins from CDD9 in the substation, passes through transformers number 28, 35, 36, 20, 27, 34, 39, 40 and goes back to CDD10 in the substation.

The total parameters of the photovoltaic power plant are the following:

- Modules: type TMS-280PC14 280 W – 216 972 units
- Installation type of the modules: fixed
- Modules direction: to the south
- Nominal DC power: 60, 739 MWp

- Inverters: RPS 450-330v-1460 TL of BONFIGLIOLI
- Transformers: Dy11 1250 kVA
- Nominal AC power: 50, 05 MW
- Limits of the operating AC frequency: 49,8 – 50,2 Hz

In general, the Detailed Development Plan will define the site with the following **TECHNICAL PARAMETERS:**

Total nominal power – 50 MW

Voltage level – 110 kV

Number of electroconductive lines – one

Number of phases - three

The connection to the national electricity grid will be completed according to the attached preliminary contract with “Natsionalna elektricheska kompania” EAD – through design, construction and commissioning of new substation 110kV/Cp.H on the SITE. The cable connections will be laid underground. The cable line to substation 110/20 kV “Borisovgrad” in Regulated Land Plot IX, quarter 165 according to the plan of Parvomay city is approved with Parcel plan.

The Detailed Development Plan will be plan for construction in order to alternate the utilization of the land on the site – to production of electricity from renewable resource – the sun. Their purpose at present is “manufacturing and storage activities”.

It will define the structure indexes, which are compulsory for the site design according to the future way of permanent usage – for manufacture of electricity. The technicalities are reduced to clarification of the construction manner, planning zone, the border for change of regime, restrictive line of construction, levels and plan parameters:

- ✓ Building density – up to 90%;
- ✓ Building intensity – K_{int} up to 1.2;
- ✓ Green area – not less than 10%;
- ✓ Height at ground cornice – up to 10 m.

The distance from adjacent properties is 3 m. and from field roads – 5 m.

After procedures with affirmative decisions of Chapter VI from the Environmental Protection Act and Article 31 from the Biological Diversity Act, Detailed Development Plan – Building-up Plan will be submitted for approval to Parvomay municipality according to the order, defined with Territorial Development Act. The necessary coordination is being carried out with

Regional Health Inspection – Plovdiv city, “Napoitelni sistemi” EAD Plovdiv branch, ViK Ltd Plovdiv and “Natsionalna Elektricheska Kompania” EAD.

The waste which will be generated during construction will be of insignificant quantities and after construction will be transported to the appointed by the municipality sites for construction waste. During the exploitation generation of waste, dangerous for the environment, the population and the fauna, is not expected. The manufacture is wastefree. The amount of organic waste is of insignificant amount and will be collected in plastic bags and will be thrown away in Parvomay city trash bins. No other main activities are anticipated, apart from those related to site security and periodical maintenance of the equipment when necessary.

2. DESCRIPTION OF THE CHARACTERISTICS OF OTHER PLANS, PROGRAMMES AND PROJECTS/INVESTMENT PROPOSALS, THAT EXIST AND/OR ARE IN A PROCESS OF IMPLEMENTATION OR APPROVAL, AND THAT COMBINED WITH THE ASSESSED PLAN, PROGRAMME AND PROJECT/INVESTMENT PROPOSAL CAN HAVE A HARMFUL EFFECT ON THE PROTECTED ZONE.

The protected zone is one of the largest areas for birds in the Valley of Maritsa River.

The presence of relatively evenly distributed settlement structure with many cities, in combination with the river characteristics, determines the nature of the investment proposals submitted for its entire territory.

According to RIEW – Plovdiv, RIEW - Stara Zagora and RIEW – Haskovo for the period 2007-2010 have been agreed the following activities:

LOCATION	LAND BELONGING TO VILLAGE.../MUNICIPALITY	OBJECT	AREA (Ha)
Maritsa River	Belozem village, Rakovski municipality	Extraction of gravel from the river island from km 154+500 to km 155+100	
Maritsa River	Popovitsa village, Sadovo munisipality	Extraction of gravel from the river peninsula from km 156+800 to km 157+ 100	
Maritsa River	Chalakovo village, Rakovski municipality	Extraction of gravel from the river peninsula from km 157+200 to km 157+700	
Maritsa River	Dobri dol village, Parvomay municipality	Building up of a small-scale hydroelectric power plant, elevation	

		115.70 to 111.30	
Maritsa River	Seltsi village, Sadovo municipality	Extraction of gravel from the river peninsula from km 158+300 to km 158+900	
Property # 029002	Parvomay city	Housing Construction	2.730
Property # 223129	Parvomay city	Housing Construction	1.920
Property # 035002, field	Dobri dol village, Parvomay municipality	Industrial storage facilities and food catering establishment	26.203
Property # 035003, field	Dobri dol village, Parvomay municipality	Industrial storage facilities and food catering establishment	37.799
Property # 000331, field	Parvomay city	Construction of facilities for agricultural machinery and a petrol-station	8.379
Property # 000202, field	Parvomay city	Station for diagnostic of automobiles	3.844
900058, 900264, 900311, 900263	Parvomay city, Lyubenovo quarter	Improving and developing of the infrastructure for wastewater in Lyubenovo quarter	1.373
Property # 000522, field	Parvomay city	Reconstruction and modernization of greenhouse units 6, 8 and 10	(347.746)
Property: 225006, 225007, 225009, 225027	Parvomay city	Building a greenhouse with drip irrigation	
Regulated Land Plot, 1 Malina Str.	Parvomay city	Processing plant for fruits and vegetables - Sub-sector steam station and gasification	(175.013)
Property # 016159, Property 005127, 006119, 006122	Gradina village, Krushevo village, Parvomay municipality	Drip irrigation, buying of agricultural machinery	(460.226)
Property # 320014, 320058, field	Parvomay city, Debar quarter	Fruit garden with drip irrigation	(10.149)
Property # 016141, pasture-ground, grassland	Gradina village, Parvomay municipality	Wastewater treatment plant	
Maritsa River	Milevo village, Sadovo	"Small-scale hydroelectric power	

	municipality	plant", Milevo	
Property # 00357, pasture-ground, grassland	Parvomay city	Construction materials storage facility	4.388
Property # 006055, uncultivated field	Vinitsa village, Parvomay municipality	Sheep farm	3.402
900409, 900408, 900052, pasture ground	Parvomay city, Lyubenovo quarter	Wastewater treatment plant	172.295
Maritsa River	Gradina village, Parvomay municipality	Small-scale hydroelectric power plant "Trento 1"	
Property # 016128, pasture ground, grassland	Gradina village, Parvomay municipality	Building up of a greenhouse with drip irrigation	72.619
Maritsa River	Karadjalovo village, Parvomay municipality	Seizure of the sandbar	
Property # 007133, field	Krushevo village, Parvomay municipality	Building up of a greenhouse	9.406
Property # 223097, pasture ground, grassland	Parvomay city, Debar quarter	Building up of a sausage factory	17.179
Regulated Land Plot, base	Parvomay city	Change of Permanent Use of a cow- farm's building	
	Krumovo village, Parvomay municipality	Building up of a cable route for contact power lines 110 kV to substations Krumovo and Parvomay	
Property # 010020, field	Gradina village, Parvomay municipality	Photovoltaic power plant	7.152
Property # 016024	Gradina village, Parvomay municipality	Photovoltaic power plant	18.216
Property # 035282	Gradina village, Parvomay municipality	Photovoltaic power plant	3.78
Property # 801595, airport for agricultural	Parvomay city, Debar quarter	Photovoltaic power plant	72.377

purposes			
Maritsa River	Seltsi village, Sadovo municipality, Chalakovo village, Rakovski municipality	Small-scale Hydroelectric power plant "Isilika"	
Property # 801595	Parvomay city, Debar quarter	Photovoltaic power plant	72.377
Regulated Land Plot 1-19, quarter 119	Karadjalovo village, Parvomay municipality	Photovoltaic power plant	1000
Property # 124006	Zetyovo village, Chirpan municipality	Photovoltaic power plant	23.001
Property # 124004	Zetyovo village, Chirpan municipality	Photovoltaic power plant	30.303
Maritsa River	Mirovo village, Bratya Daskalovi municipality	Extraction of gravel and sand	
Maritsa River	Zetyovo village, Chirpan municipality	Extraction of aggregates	
Maritsa River	Zetyovo village, Chirpan municipality	Cleaning of the left sleeve of the Maritsa River from sediments	
Maritsa River	Zetyovo village, Chirpan municipality	Periodic cleaning of the bed of Maritsa River of accumulated dynamic sediments	
Property # 103028	Zetyovo village, Chirpan municipality	Laying of underground electric cable for external power	0.7
Maritsa River	Yabalkovo village, Dimitrovgrad municipality	Building up of a Small-scale hydroelectric power plant "Yabalkobo"	
Maritsa River	Skobeleva village, Dimitrovgrad municipality	Building up of a Small-scale hydroelectric power plant "Skobeleva"	
Maritsa River	Stalevo village, Dimitrovgrad municipality	Building up of a Small-scale hydroelectric power plant "Trento 2"	
Maritsa River	Skobeleva village, Dimitrovgrad municipality	Seizure of aggregates	

Maritsa River	Yabalkovo village, Dimitrovgrad municipality	Extraction of gravel and sand	
Maritsa River	Yabalkovo village, Dimitrovgrad municipality	Seizure of aggregates	
Maritsa River	Yabalkovo village, Dimitrovgrad municipality	Cleaning the living section of the Maritsa river from sediments	
Maritsa River	Stalevo village, Dimitrovgrad municipality	Seizure of aggregates	

The Detailed Development Plan – Building-up Plan will affect 1,000 decares or 0. 869 percent, and together with all other projects it will affect 1 415 681 decares or 1. 230 percent of the area of a protected zone “MARITZA PARVOMAY”. The areas intended for photovoltaic power plants are 1154.829 decares in total or 1. 004 percent.

The performed calculations are quite relative in view of the nature of this proposal for a new Detailed Development Plan – Building-up Plan for Change of Permanent Use of Regulated Land Plots. Since 2006 they are intended for “land for manufacturing and storage activities” and “de jure” the imported into the table 1000 decares are already urbanized areas.

The analysis of all investment proposals so far can be represented as follows:

TYPE OF INVESTMENT PROPOSAL	UNIT	SURFACE (ACRES)	AFFECTION OF THE PROTECTED ZONE - %
Photovoltaic Power Plant	7	1154.829	1.004
Hydroelectric Power Plant	6	-	-
Infrastructure	4	174.368	0.101
Agriculture - without Change of Permanent Use of Regulated Land Plot	6	(953.248)	-
Agriculture - with Change of Permanent Use of Regulated Land Plot	4	78.252	0.067
Production and other undertakings	2	72.234	0.063
Housing construction	2	4.650	0.004
		1 415.681	

3. DESCRIPTION OF ELEMENTS OF THE PLAN, PROGRAMMES AND PROJECT/INVESTMENT PROPOSAL, WHICH INDEPENDENTLY OR IN A COMBINATION WITH OTHER PLANS,

PROGRAMMES AND PROJECTS/INVESTMENT PROPOSALS CAN HAVE A HARMFUL EFFECT ON THE PROTECTED ZONE AND ITS COMPONENTS.

Protected zone "MARITZA PARVOMAY "/ BG0002081/ and its elements will be influenced by the combination of time, location and intensity of the impacts related to the construction of the facilities referred to in part 2, their infrastructure and exploitation.

The implementation of the plan will not increase the proportion of urban areas in the protected zone because all properties included in the plan have been regulated as "land for manufacturing and storage activities" for several years.

However, the process of installing the equipment will increase the level of action of anthropogenic factors such as noise and vibration, temporary and local covering with dust of the ground atmospheric layer while inserting in the ground the bearing structure. Insignificantly and temporarily will increase the amount of harmful substances in the air emitted by the traffic to the site and the transportation of the construction equipment (carbon monoxide, hydrocarbons, nitrogen oxides, sulfur oxides, lead aerosols, aldehydes, soot, water vapor, etc.). Even minimal waste water will be generated. There is a risk of damage to the land by entering of machines into them or spills of fuel lubricants. This relates mostly to the surrounding drain pipes. Some quantities of construction waste will be generated during the construction and by the exploitation of the plant will be generated only household waste - packages, glass, paper, biodegradable waste.

During the exploitation of the plant these impacts are minimized, since production is waste-free, noiseless and it does not release emissions into the environment. It is expected that there will be present only a guard. The total quantity and composition of the emissions, resulting from the construction and exploitation of the facility, does not justify an expectation for significant impact on the quality and composition of air, water and soil in the area.

Although it is not planned a construction of a new road network to the links of the present field roads along with the build of transfer bridges through the renewed route of the railway line it is likely to come out of their parameters when maneuvering the machine.

Particularly vulnerable are the channels that are not cleaned for years, and overgrown with vegetation. Discharges of organic materials in these channels would lead to further strengthen their eutrophication. This result would multiply itself during the building of the railway station and line. Taken this into consideration we have already planned corrections in the channel network, availability of construction materials in the pipes, etc. Of course, after the construction of the facility it is logical to expect a full recovery having done.

The presented possible impacts will lead to a temporary and slight loss of ecological niches, and where activities do not meet the requirements laid down in the harmonized Bulgarian environmental legislation and to the negative impact on ecosystems in the region. *(Translator's note: The sentence is not complete and its meaning is not clear.)*

The indicators which are stipulated in the Detailed Development Plan – Building-up Plan exclude possible impact on the surrounding lands which are included in the territory of the protected zone.

In the following table we present types of activities and their potential impacts on the components of protected zone "MARITZA PARVOMAY"/ BG0002081 /:

ACTIVITY	POSSIBLE IMPACTS
Building of a Photovoltaic Power Plant	Possible damage of local population of species
	Direct destruction of habitats as a result of wrongful entering of people and equipment in channels and fens
	Damaging the quality of local natural habitats as a result of intensive human activity
	Disturbance of birds as a result of increased human presence
	Increased danger of fire
	Death rate of individuals, mainly invertebrates, as a result of the removal of the upper layer of the soil and the vegetation, and the reduction of the food quality thereof
	Increased gas emissions from automobiles which can induce physiological and biochemical reactions in the living organisms and in birds in particular
	Damaging or destruction of the quality of the natural habitats as a result of wrongful construction waste disposal
Operations of the Photovoltaic Power Plant	Disturbance of animals from surrounding areas as a result of specialized mechanization
	Disturbance of species as a result of increased human presence
	Changes in the types of species presented there, respectively change of phytocenosis as a result of changes in landscape and soil
	Changes in the typical for the area landscape
	Damaging the quality of local natural habitats as a result of waste disposal

4. DESCRIPTION OF THE PROTECTED ZONE, THE HABITATS, THE SPECIES AND THE AIMS OF THE MONITORING ON A NATIONAL AND INTERNATIONAL LEVEL AND THEIR RECOGNITION IN THE PROCESS OF DEVELOPING THE PLAN, PROGRAMME AND PROJECT/INVESTMENT PROPOSAL

The surface intended for the implementation of the undertaking is included in the territory of the protected zone “MARITSA PARVOMAY” with identification code BG0002081 and total surface of the National Ecological Network 11505.23 Ha as stipulated in Article 6, paragraph 1, subparagraph 3 and 4 of the Biological Diversity Act (NATURA 2000 in its part for conservation of birds’ habitats, DIRECTIVE 79/409/EEC).

Protected zone “MARITSA PARVOMAY” is legally announced by the means of Ordinance RD-909/11.12.2008 by the Minister of the environment and water. The reasons for its announcement are as follows:

- Conservation and maintenance of the habitats of the listed bird species in order to secure a favourable conservation status;
- Restoration of the habitats of the bird species which need an improvement of their conservation status;

The protected zone covers the lands or their sections of 22 villages from 6 municipalities, part of 3 administrative regions:

MUNICIPALITY	LANDS TO SETTLEMENT
PLOVDIV REGION	
Parvomay	Vinitsa, Gradina, Byala reka, Debar, Dobri dol, Karadjalovo, Parvomay, Krushevo, Lyubenovo
Rakovski	Belozem, Chalakovi
Sadovo	Milevo, Popovica, Selci
STARA ZAGORA REGION	
Bratya Daskalovi	Mirovo
Chirpan	Chirpan, Zetyovo, Zlatna livada
HASKOVO REGION	
Dimitrovgrad	Velikan, Skobeleva, Stalevo, Yabalkovo

Subject of conservation are the following bird species:

SPECIES (LATIN)	Local populati on	Migrational population			Assessment			
		Reprodu ction	Hibern ation	Transitio n	Populati on	Conserv.	Isolati on	Overall
Species under Article 6, paragraph 1, subparagraph 3 and 4 of the Biological Diversity Act:								
<i>Aythya nyroca</i>			0-1i		D			
<i>Nycticorax nycticorax</i>		P		10i	C	S	C	C
<i>Egretta alba</i>			12i/5-20i		B	B	C	B
<i>Egretta garzetta</i>		P		P	C	B	C	C
<i>Ardea purpurea</i>				P	D			
<i>Ixobrychus minutes</i>		1p			C	B	C	C
<i>Cygnus cygnus</i>			7i/0-15i		B	B	C	B
<i>Sterna hirundo</i>		2p			C	B	C	C
<i>Ciconia nigra</i>		1p/1-1p		46i	C	A	C	C
<i>Ciconia ciconia</i>		21p/12-31p		51i	C	A	C	B
<i>Phalacrocorax pygmeus</i>			90i/50-130i		C	A	C	C
<i>Buteo rufinus</i>				P	D			
<i>Haliaeetus albicilla</i>		1i/0-2i			B	A	C	A
<i>Accipiter brevipes</i>		5p			A	A	C	A
<i>Aquila pomarina</i>				P	D			
<i>Hieraaetus pennatus</i>		1p/0-1p			C	B	C	C
<i>Circaetus gallicus</i>		1p			C	A	C	C
<i>Milvus migrans</i>		1p			C	A	C	C
<i>Falco columbarius</i>		1i/0-2i			D			
<i>Alcedo atthis</i>	5p				C	A	C	A
<i>Coracias garrulous</i>		11p			C	A	C	C
<i>Dendrocopos syriacus</i>	15p/10-20p				C	A	C	C

SPECIES (LATIN)	Local popul ation	Migrational population			Assessment			
		Reprodu ction	Hibernati on	Transitio n	Populati on	Cons erv.	Isolation	Overall
Species under Article 6, paragraph 1, subparagraph 3 and 4 of the Biological Diversity Act:								
<i>Dryocopus martius</i>			0-1i		D			
<i>Lanius nubicus</i>		200p/1 50-200p			A	A	C	A
<i>Hippolais olivetorum</i>		1p/0-2p			C	B	C	C
<i>Crex crex</i>				P	D			
<i>Tringa glareola</i>				P	D			
<i>Anthus campestris</i>		P			C	B	C	B
<i>Lanius collurio</i>			150p		C	A	C	B
<i>Lanius minor</i>		12p/10- 12p			C	A	C	C
<i>Phalacrocora x carbo</i>			800i/100- 1500i		B	A	B	C
<i>Tachybaptus ruficollis</i>		9i/8-10i			D			
<i>Cygnus olor</i>		5i/0-11i			C	B	C	C
<i>Ardea cinerea</i>			12i/5- 20i	P	D			
<i>Anser albifrons</i>			70i/0- 35i		D			
<i>Anas platyrhynchos</i>	7p/5- 9p			57i/15- 100i	D			
<i>Anas crecca</i>			25i/0- 50i		C	B	C	C
<i>Accipiter gentilis</i>	1p			5i	D			
<i>Accipiter nisus</i>			2i/0-5i		D			
<i>Buteo buteo</i>	10p/		15i/10-	P	D			

	6-14p		20i					
<i>Buteo logopus</i>			R		D			

SPECIES (LATIN)	Local populatio n	Migrational population			Assessment			
		Reprodu ction	Hibernati on	Transitio n	Populati on	Conserv.	Isolatio n	Overall
<i>Falco tinnunculus</i>	6/5-7p		0-5i		C	A	C	C
<i>Tringa ochropus</i>			5i	12i	D			
<i>Vanellus vanellus</i>		4p/2-3p	3i/0-5i	P	D			
<i>Gallinago gallinago</i>		3p/2-3p	P		D			
<i>Haematopus ostralegus</i>					B	A	B	C
<i>Charadrius dubius</i>			25p/10-40p		C	A	C	C
<i>Gallinula chloropus</i>	5p		10i/0-20i		D			
<i>Fulica atra</i>			35i/20-50i		D			
<i>Merops apiaster</i>		195p		P	D			
<i>Rallus aquaticus</i>	2p				D			
<i>Riparia riparia</i>	5015p				B	A	C	C

In the tables the presented status of the bird species is made using the standard blank (www.natura2000bg.org).

Local population – population of local species which live in the area annually;

Migrational Population – migrational population from ;

Reproduction – species that reproduce and use the area for nestling and raising;

Hibernation – species that hibernate in the area during the winter;

Transition – species that transit, use the area during a migration process or changing their feather/fur outside their places for reproduction;

The number of the population is entered using the exact data. If the exact number is unknown the limits are indicated instead.

By the means of an index is displayed if the number of the population is measured in pairs (p) or in individuals (i). In the case of species with a special reproduction system the male and female individuals are marked with indexes, respectively, (t) and (f). In case there is no statistical data on the specie the size and density of its population is presented through the letters: (C) – typical, (R) – rare and (Y) - very rare. In case there is no data about the population at all, it is marked as present (P).

Population – size and density of the specie population which is present in the area in relation with its population on the whole territory of the country. This criterion is used for evaluation of the relative size and density of the population in the object-area in comparison to the size and density of the population on a national level. The following model for approximate evaluation was used: A) $100 \% > P > 15 \%$; B) $15 \% > P > 2 \%$; C) $2 \% > P > 0 \%$. At any case if a particular population is presented insignificantly in the object-area, it has to be set in another category: D) Insignificant population.

Conservation – Conservation degree of the habitats' components which are important for the particular specie and its restoration abilities. To classify this criterion was used "best expert's assessment": A) excellent conservation (components are in an excellent condition independently from the restoration abilities' assessment); B) good conservation (well conserved elements independently from the restoration abilities' assessment and elements in an average or partial degraded condition and easy restoration); C) Average or minor conservation (all other possible combinations).

Isolation – Isolation degree of the population presented in the subject-area in comparison to the representative degree for the specie. The following classification is used: A) mostly isolated population; B) population which is not isolated but is presented at the border area of the region; C) non-isolated population with a wide range of spreading.

Overall assessment – overall assessment of the value of the object for the conservation of the species in question. "Best expert's assessment" was used: A) excellent; B) good; C) significant.

Protected zone is declared in order to:

- be protected and maintained the habitats of the listed bird species in order to be secured the favourable conservation status of their kind;

- be restored the habitats of the bird species whose favourable conservation status has to be maintained;

In the borders of the protected zone it is prohibited:

- the reduction of the size of riparian mixed forests by the means of local forest species;
- the setting on fire of reed fields and riverside vegetation;
- plowing and planting of lawns, pastures and fields, and their conversion into plantations;
- Removal of landscape features (field margins, single and group trees) on agricultural lands;
- Use of pesticides and fertilizers in meadows and pastures.

The overall features of the protected zone are as follows:

CLASSES	%
Wet meadows, mesophilic meadows	1
land water (standing water, flowing water)	12
Other arable land	1
Other lands	6
Cereals	56
Non-forest areas cultivated with woody vegetation	2
Dry grasslands, steppes	11
Shrubland	1
Broadleaf forest	10

The protected area covers a section of the Maritsa River in the area of Parvomay with riparian habitats and agricultural land around it. Riparian forests along the coast are mainly of black alder (*Alnus glutinosa*), willow (*Salix alba*, *S. fragilis*) and poplar (*Populus nigra*, *P. alba*) in places mixed with plantations of hybrid poplar. Over the agricultural lands are scattered small oak forests. Grasslands are represented by mesophilic grasslands units of tall fescue (*Festuca pratensis*), forest bluegrass (*Poa sylvicola*), meadow foxtail (*Alopecurus pratensis*), perennial ryegrass (*Lolium perenne*) Creeping bent (*Agrostis stolonifera*) and others. (Bondev, 1991).

On the territory of "Maritza Parvomay" are settled 84 species of birds, 22 of which are included in the Red Book of Bulgaria (1985). From the presented species 38 are of European conservation concern (SPEC) (BirdLife International, 2004).

As globally endangered in category SPEC1 is included 1 species, and as endangered in Europe: category SPEC2 - 13 species and SPEC3 - 22 species. The area provides suitable habitats for 29 species listed in Annex 2 of the Biological Diversity Act, which require special protection measures.

Of these, 26 are also listed in Annex I of EU Directive 79/409. The region of Maritsa Parvomay is where in Bulgaria the Masked Shrike (*Lanius nubicus*) nests in greatest numbers.

This place is one of places in the country which are of great importance to the European Union in regard with the conservation of species such as Levant Sparrowhawk (*Accipiter brevipes*), Roller (*Coracias garrulous*) and the white stork (*Ciconia ciconia*). They have representative for the country populations over here. In winter along Maritsa it can be regularly met the Great White Egret (*Egretta alba*), and in riparian lands: the Whooper Swan (*Cygnus cygnus*).

The characteristic of the area is represented by data from www.natura2000bp.org.

5. DESCRIPTION AND ANALYSIS OF THE POSSIBILITY TO IMPACT AND THE IMPACT DEGREE OF THE PLAN, PROGRAMME AND PROJECT/INVESTMENT PROPOSAL ON THE SUBJECT AND PURPOSES OF THE CONSERVATION OF THE PROTECTED ZONE

In order to clarify the impact of the Detailed Development Plan – Building-up Plan on the water and coastal conenose and ecosystems, included in the protected area, we will give short charachtersitic and description of the bio diversity in the area.

The area belongs to the Middle-Bulgarian bio-geographical area, subarea of area Gornotrakijska lowland /Gruev, Kuzmanov, 1994/, with mainly flat nature, intensive agriculture and considerable urbanization. The subarea overlaps to certain extent with Upper-Gornotrakijski bio-geographical area from the Balcan bio-geographical province according to Asenov /2006/. The bio-geographical zoning does not differ distinctively from the geographical, but in any case it determines to a certain extent poor composition and abundance of biodiversity, preserved mainly on the slopes of foothill heights and locations with monotones effect - lowland forests and rivers, as is the case.

Soils are predominantly cinnamonic forest typical soils, chernozems, alluvial soils, humus-carbonate soils and anthropogenic soils

Mediterranean influence enters through the valley of Maritsa River. The flat area is characterized by scattered small forestry complexes throughout the working lands. The typical forest communities are relatively small and are composed of different types of oaks (*Quercus ceris*, *Quercus frainetto*) and Oriental hornbeam (*Carpinus orientalis*). There are secondary communities of thorns (*Paliurus spina-christi*), jasmine / (*Jasminum fruticans*) and other transitional Mediterranean species. At some sites there are mesophytic forests of

greyish oak (*Quercus pedunculiflora*), field elm (*Ulmus minor*), Q. virgiliana oak (*Quercus virgiliana*) and field ash (*Fraxinus ohusagra*) and halophytic formations (known as Thracian forest vegetation area). From the south species are typical representatives of the Black Sea region bitinski squill (*Scilla bythynica*), salvia (*Salvia forskahlei*), sweet vetching (*Lathyrus*), field ash (*Fraxinus ohusagra*). From the Asian species can be mentioned ornithogalum (*Ornithogalum fimbriatum*), smilax (*Smilax excelsa*), *Astragalus angustifolius*, dyers' bugloss (*Alkanna tinctori*), prangos (*Prangos ferulacea*), *Lotus strictus* and others. The endemics in the region are represented by several species, most famous of which are the tulip types *Tulipa splendens* and *Tulipa aureolina*, and the lily types *Fritillaria dgaesa* and *Fritillaria pontica*.

The fauna is rich in southern thermophilic species. Invertebrates are represented by multiple Submediterranean and Eastmediterranean and Asia Minor species. Vertebrates include a set of European, and Siberian and Archtcal species. Along with them are also common extraordinarily thermophilic Mediterranean transitional Mediterranean, Asia Minor and the steppe species. Characteristic of the sub-region are the large number of thermophilic and widespread in southern Bulgaria amphibians, reptiles, birds and inhabiting the open plains, digging or other mammals. Among them is Günther's Vole (*Microtus guentheri*). The only endemic representative from the vertebrates is *Rutilus rutilus mariza*. The valley of Maritsa river has a particular conservation value because of, albeit small scale, residues of floodplain forests. It receives an additional conservation value because of the biogeographical location of the site. Middle and lower basin of Maritsa river is one of the few areas in the whole Palearctic, which preserves the biodiversity influenced by three biogeographic subregions - Continental, Mediterranean and Caspian. The valley is an extremely important biopassage, linking protected areas in almost all of Southern Bulgaria.

5.1. DESCRIPTION AND ANALYSIS OF THE IMPACT OF PLANS, PROGRAMMES AND PROJECTS/INVESTMENT PROPOSALS ON THE TYPES OF NATURAL HABITATS AND SPECIES WHICH ARE SUBJECTS OF THE PROTECTED ZONE

The site has not been studied in terms of overall biodiversity. The terrain is extremely flat. The altitude is about 120 m. The land has very high groundwater and in the past it got swamping. It has been also often flooded by the spills of Maritsa River. As a result some river dikes were built and about 50 years ago the entire area was drained and surrounded by all four sites with cross drains. In the process of water retention they served for irrigation. The terrain in this form is used and is still being used as pasture, although it is regulated as "manufacturing and storage activities". In order to be used as intended now there are significant construction activities on the site concerning new infrastructure facilities: railway station with extra tracks , overpasses over the route of the railway link with Regulated Land Plot XXIX (regulated as "transport"), which turns into a street connection to the street network of the village.

Within the site there is a lack of trees, except for three oaks, situated at the east end of the site. At its northeast end the site is bounded by an old oak grove. On 08.02.2011 we carried out an inspection, which showed that the stumps are very old, and the trees have obvious signs of degradation. The grove is not affected by the implementation of the Detailed Development Plan – Building-up Plan, but the three single trees, in view of the nature of the activity will be removed.

The area is currently occupied by grasslands, presented by Bermuda Grass (*Cynodon dactylon*), common wild oats (*Avena fatua*), *Dichanthium ischaemum*, meadow fescue (*Festuca pratensis*), meadow grass (*Poa pratensis*), Cock's foot (*Dactylis glomerata*), Quaking-grass (*Briza media*), field brome (*Bromus arvensis*), perennial ryegrass (*Lolium regeppe*), knotweed (*Poligonium sp.*), wild hemp (*Cannabis sativa*), Stinging nettle (*Urtica dioica*), black mustard (*Brassica nigra*), medicinal mullein (*Verbascum phlomoides*), coltsfoot (*Tussilago farfara*), Cotton Thistle (*Onopordum acanthium*), love in a mist (*Nigella arvensis*), common larkspur (*Consolida regalis*), Shepherd's Purse (*Capssela bursa-pastoris*), drava (*Cardaria drava*), wood avens (*Geum urbanum*), common agrimony (*Agrimonia eupatoria*), birdsfoot trefoil (*Lotus corniculatus*), Black medic (*Medicago lupulina*), Yellow Chamomile (*Antbemis tinctoria*), yarrow (*Achilea millefolium*), chamomile (*Matricaria chamomilla*), thistle (*Cirsium arvense*), large-leaved chicory (*Cicborium intybus*) etc.

The presented composition of the phytocenoses indicates that on the site grow no plant species protected by the Biological Diversity Act. There are no deposits of medicinal plants with economic value.

None of the habitat types listed in Annex I of Directive 92/43/EEC and Annex 1 of the Biological Diversity Act is presented on the pitch. In this sense, the investment proposal will not cause loss of areas with protected habitats as such are not included in the scope of protection of protected zone "MARITSA PARVOMAY".

In order to clarify the impact on the ornithological complex included in the scope of the protected zone, the vegetation in drainage channels, round the site, will be described. The drainage channels' condition is extremely poor in terms of hydro facilities. Their depth has decreased by over two thirds of the originally planned, in some places there are badly damaged dikes, clogging of pipes passing over the field roads, etc. There is a strong eutrophication resulting from growing marsh vegetation whose biomass remains unexported and decays. The water level is low and for years did not allow the development of ichthyofauna.

In the pipes develop reed (*Phragmites australis*) and other hydrophytes, pondweed (*Potamogeton natans*), branched bur reed (*Sparganium erectum*), arrowhead (*Sagittaria sagittifolia*), Berula (*Berula erecta*), flowering rush (*Butomus umbellatus*), marsh mint (*Mentha pulegium*) and others.

The coast opposite the site is overgrown with bushes and single runtish trees in the north, east and west and partially in the south. Most widely develop the blackthorn (*Prunus spinosa*), and also single willow (*Salix alba*), elm (*Ulmus minor*), hornbeam (*Ostrya varpinifolia*), black elderberry (*Sambucus nigra*) and others.

The described phytocenoses, as well as the climatic and soil conditions, determine the relatively poor composition of the zoocenoses. The area provides little environmental niches. It is permanently inhabited only by rodents and other small mammals in its parts which are temporarily not cultivated.

Potential species that live in area are Lesser White-toothed Shrew (*Crocidura suaveolens*), field mouse (*Apodemus agrarius*), house mouse (*Mus musculus*), Bicoloured White-toothed Shrew (*Crocidura leucodon*), Etruscan shrew (*Suncus etruscus*), black rat (*Rattus rattus*), gray rat (*Rattus norvegicus*), gray vole (*Microtus arvalis*), underground vole (*Microtus subteraneus*), etc.

Herpetofauna is very poor and consists only of frogs and some lizards.

The composition and status of phyto-and zoocenoses were presented schematically in order to clarify the impact on the subject of conservation in the protected zone "MARITZA PARVOMAY "- birds.

On the territory of the property, chosen for the implementation of the plan, there are no nesting species. Bird species, whose presence in the area is established, are related mostly to the open terrain. Their number and species composition are limited by the nature of land and the significant grazing activities associated with the permanent presence of domestic animals - cows, buffaloes, sheep, goats, horses, dogs and humans.

Water bird species typical for the Maritsa River can't be encountered on the site because of its remoteness, its character, the siltation of canals and the almost complete lack of water flow throughout the year, which lowers the trophic value to a minimum. Vegetation also does not provide breeding habitats for most species. This limits the use of bed and shelters. On the single willows were found single nests of widespread species such as hooded crow (*Corvus cornix*) and magpie (*Pica pica*), and on shrubs - of Eurasian Tree Sparrow (*Passer montanus*), Blackbird (*Turdus merula*) and other songbirds.

Dry slopes are mostly bare because of deforestation and their burning by shepherds who use the area for grazing since it is located close to the village.

The site is located about two kilometers away from Maritsa River. Between the river and it are located arable lands. Because of the dikes there are no spills, marshy areas or water mirrors. No dam lakes are built and the drainage channels have no connection to the watercourse.

In the south the site is bounded by a drainage channel behind which lies the railway line and the new station which is in a process of building and is regulated by the village, and east of it there are arable fields with chernozem soil.

The bird species included in the scope of protection of the protected zone "MARITZA PARVOMAY" are displayed in the following table along with their status to the property. In the examined area of '1000 decares there are no nesting species.

SPECIES	STATUS WITH REGARD TO THE PROPERTY
FALCONIFORMES	
<i>Haliaeetus albicilla</i>	Not presented
<i>Hieraaetus pennatus</i>	Not presented
<i>Aquila pomarina</i>	Not presented
<i>Accipiter brevipes</i>	Passing, trophic base
<i>Accipiter gentilis</i>	Not presented
<i>Accipiter nisus</i>	Passing, trophic base
<i>Milvus migrans</i>	Not presented
<i>Buteo lagopus</i>	Not presented
<i>Buteo rufinus</i>	Passing, trophic base
<i>Buteo buteo</i>	Passing, trophic base
<i>Falco tinnunculus</i>	Passing, trophic base
<i>Falco columbarius</i>	Not presented
PELICANIFORMES	
<i>Phalacrocorax pygmeus</i>	Not presented
<i>Phalacrocorax carbo</i>	Not presented
PODICIPEDIFORMES	
<i>Tachybaptus ruficollis</i>	Not presented
CICONIIFORMES	

<i>Ciconia ciconia</i>	trophic base
<i>Ciconia nigra</i>	Not presented
<i>Nycticorax nycticorax</i>	Not presented
<i>Egretta alba</i>	Passing, trophic base
<i>Egretta garzetta</i>	Not presented
<i>Ardea purpurea</i>	Not presented
<i>Ixobrychus minutes</i>	Not presented
<i>Ardea cinerea</i>	Passing, trophic base
GRUIFORMES	
<i>Crex Crex</i>	Not presented
<i>Gallinula chloropus</i>	Not presented
<i>Fulica atra</i>	Not presented
<i>Rallus aquaticus</i>	Not presented
ANSERIFORMES	
<i>Cygnus olor</i>	Not presented
<i>Cygnus cygnus</i>	Not presented
<i>Aythya nyroca</i>	Not presented
<i>Anser albifrons</i>	Not presented
<i>Anas crecca</i>	Not presented
CHARADRIIFORMES	
<i>Sterna hirundo</i>	Not presented
<i>Tringa ochropus</i>	Not presented
<i>Tringa glareola</i>	Not presented
<i>Vanellus vanellus</i>	Passing, Trophic base

<i>Gallinago gallinago</i>	Not presented
<i>Charadrius dubius</i>	Not presented
<i>Haematopus ostragelus</i>	Not presented
CORACIIFORMES	
<i>Alcedo taitis</i>	Passing, Trophic base
<i>Merops apiaster</i>	Not presented
<i>Coracias garrulus</i>	Not presented
PICIFORMES	
<i>Dendrocopos syriacus</i>	Not presented
<i>Dryocopus martius</i>	Not presented
PASSERIFORMES	
<i>Lanius nubicus</i>	Passing, Trophic base
<i>Hippolais olivetorum</i>	Passing, Trophic base
<i>Anthus</i>	Passing, Trophic base
<i>Lanius collurio</i>	Passing, Trophic base
<i>Lanius minor</i>	Passing, Trophic base
<i>Riparia riparia</i>	Not presented

From the presented in tabular form information, it is clear that there might be impact on 15 species of birds which are subject to protection and the implementation of planned the activities according to the Detailed Development Plan will have no influence on the remaining 36 species.

Information on diurnal birds of prey in the region is included thanks to literature information. There are possibly five species presented.

Levant Sparrowhawk (*Accipiter brevipes*) is represented in the protected zone by 5 nesting pairs with a comprehensive assessment of the population (A). It inhabits wooded regions near lakes and rivers, in the foothills and mainly in the plains. On the territory of Bulgaria it is a wandering and migratory species. It prefers the forest areas near the river and is

occasionally noticed on the site of the project where it uses the trophic resources: songbirds nesting in channels, amphibians, lizards and insects. A negative impact is possible to a small extent.

Eurasian Sparrowhawks (*Accipiter nisus*), registered in the area, amount to 2 (0-5) birds corresponding to population assessment (D). It nests in trees, but no nesting sites are located in the area. Breeding, migrating and wintering species. Occasionally, especially during the winter, it uses the site and its surroundings, where it hunts the preferred sparrows, starlings and other small species. A negative impact is possible to a small extent.

The long-legged Buzzard (*Buteo rufinus*) is diffusely spread throughout the country. It is mentioned as a passing species, population assessment (D). It is a rare species of Maritsa river. It is possible to encounter it in a period of migration. Impact on species is not expected even with the view of development of ground squirrel populations as a result of neglected farmland.

Common Buzzard (*Buteo buteo*) – presented by 10 (6-14) nesting pairs in the zone and 15 (10-20) passing. It is a nesting, migratory, passing and wintering species. It eats mainly large insects, with small mammals, reptiles, amphibians, and other similar-sized prey. It uses the site and the surrounding area when hunting. A negative impact is possible to a small extent.

Common Kestrel (*Falco tinnunculus*) is a type with comprehensive evaluation (C). Six nesting pairs are registered in the area. It eats mainly large grasshoppers, mice, lizards, frogs, young birds, adult larks, sparrows and others. A negative impact is possible to a small extent.

On the site in question can be found 3 types of *CICONIIFORMES*.

White Stork (*Ciconia ciconia*). It is a nesting and passing species. On the territory of the site were reported 21 nests (12-31) and up to 53 passing birds. The nearest nest is located approximately two kilometers away. Clusters at the site were observed during August 2010 after the burning of the vegetation on the north slopes of the drainage channels and part of the site. The area is suitable for the species as a food base and storks are present every year in spring and summer. A negative impact is possible to a small extent.

Great Egret (*Egretta alba*) and Grey Heron (*Ardea cinerea*) are typical wintering in the area species (also nesting and passing through the country). Individual specimens can be observed in the channels annually during the winter and in their seasonal migrations. A negative impact is possible to a small extent.

On the site in question can be seen two types of water fowl - Moorhen (*Gallinula chloropus*) and Eurasian Coot (*Fulica atra*) under certain conditions. In the past their breeding range included the canal network which provided rich nesting and food base. In recent years, their strong eutrophication has caused their absence of these traditional habitats. It is possible

that after the rehabilitation of the canal network which can be expected after the implementation of activities envisaged in the Detailed Development Plan, the species will return to the area. In this sense we can expect a positive impact.

Shorebirds are presented within the site only by plover (*Vanellus vanellus*), which is both permanent and a passing kind for the country, and for the surroundings of the protected area, where were seen three nesting pairs and 3 passing birds. The species is attached to any type of wetlands and is likely to appear on the site that is very rarely used as a food base. A negative impact is possible to a small extent.

Kingfisher (*Alcedo atais*) is the only representative of the Alcedos due to the presence of suitable habitats channels. Since they have degraded the specie can be seen extremely rare, occurring occasionally under certain conditions. There are five nesting pairs in the zone. Overall assessment (C). A negative impact is possible to a small extent.

Songbirds, included in the protected zone and associated with the area of the Detailed Development Plan – Building-up Plan are 4 species.

Masked Shrike (*Lanius nubicus*) is a scatterly spread kind of small density. In the part of Maritza river which is concerned, its density is relatively high - between 10 and 20 nesting pairs of UTM squares of Yankov (2007). It prefers wooded and bush areas. 200 nesting pairs are seen in the area. A negative impact is possible to a small extent.

Tawny Pipit (*Anthus campestris*) is a nesting and passing through Bulgaria specie which is usually seen in grassy areas. Despite the constant anthropogenic presence it is possible to use the territory as a food base. Near a few kilometers there are also deserted, now grassy lands. The overall assessment of the area is (B). A negative impact is possible to a small extent.

Red-backed Shrike (*Lanius collurio*) - nesting, migratory specie with a preference for shrub-grass open complexes. On the territory of the zone are located 150 nesting pairs with an overall assessment (B). Assumed nesting in the vegetation of channels. A negative impact is possible to a small extent.

Lesser Grey Shrike (*Lanius minor*) is rare for the region and the zone where the number of breeding pairs varies from 0 to 12. In the standard form it is estimated with (C). A nesting, migratory specie. A negative impact is possible to a small extent in view of the nature of the terrain which replies to the requirements of the specie.

According to the description of the specifics, volume and nature of activities provided by Detailed Development Plan and the presented features of phyto-and zoocenoses and in particular avifauna included in the scope of protection of the protected zone "MARITZA

PARVOMAY" there is no reason to expect significant changes in the structure and dynamics of bird populations.

In assessing the impact on species, that are subject to protection in the area, we will use a matrix to assess the degree of impact on habitat types and habitats of species (Directive 92/43):

Assessment	CRITERIA
0	The activity does not have an impact
1	The activity has a slightly negative impact.
2	The activity can produce temporary negative impacts.
3	The activity can produce short-term negative impacts.
4	The activity can produce secondary negative impacts.
5	The activity can produce cumulative negative impacts.
6	The activity can produce cumulative synergy impacts.
7	The activity can produce secondary, cumulative or synergy negative impacts which can be eliminated through mitigating measures.
8	The activity can produce secondary, cumulative or synergy negative impacts . The impacts can be eliminated through mitigating measures.
9	The activity can produce significant medium-term or long-term negative impacts. The impacts can be eliminated through mitigating measures.
10	The activity can produce significant and irreversible negative impacts. The impacts can not be eliminated through mitigating measures.

In its application can be differentiated four intervals:

0	No impact;
1 -3	low impact, which can be avoided without application of special measures, besides complying with the best practices in the construction and operation;
4-6	moderate impact, which has to be reported in combination with other factors
7-10	Significant impact which has to be removed by choosing an alternative or by applying mitigation and compensatory measures.

The expected or likely impact on bird species included in the scope of protection of protected zone "MARITSA PARVOMAY" are determined on the basis of the presented above status, after carefully conducted field observations and reports.

The impact both during construction and during exploitation is presented in the following table:

TYPE	SPECIES	ASSESSMENT OF THE DEGREE OF IMPACT WITH THE BUILDING OF PHOTOVOLTAIC PARK		ASSESSMENT OF THE DEGREE OF IMPACT WITH THE OPERATION OF PHOTOVOLTAIC PARK	
Daytime praying birds (FALCONIFORMES)					
	<i>Haliaeetus albicilla</i>	0	No impact	0	No impact
	<i>Hieraaetus pennatus</i>	0	No impact	0	No impact
	<i>Aquila pomarina</i>	0	No impact	0	No impact
	<i>Accipiter brevipes</i>	1	Tiny negative impact	1	Tiny negative impact
	<i>Accipiter gentilis</i>	0	No impact	0	No impact
	<i>Accipiter nisus</i>	1	Tiny negative impact	1	Tiny negative impact
	<i>Milvus migrans</i>	0	No impact	0	No impact
	<i>Buteo lagopus</i>	0	No impact	0	No impact
	<i>Buteo rufinus</i>	1	Tiny negative impact	1	Tiny negative impact
	<i>Buteo buteo</i>	1	Tiny negative impact	0	No impact
	<i>Falco tinnunculus</i>	1	Tiny negative impact	0	No impact
	<i>Falco columbarius</i>	0	No impact	0	No impact
[PODICIPEDIFORMES)					
	<i>Tachybaptus ruficollis</i>	0	No impact	0	No impact
(PELECANIFORMES)					
	<i>Phalacrocorax pygmeus</i>	0	No impact	0	No impact
	<i>Phalacrocorax carbo</i>	0	No impact	0	No impact
(CICONIIFORMES)					
	<i>Ciconia ciconia</i>	1	Tiny negative impact	1	Tiny negative impact

	<i>Ciconia nigra</i>	0	No impact	0	No impact
	<i>Nycticorax nycticorax</i>	0	No impact	0	No impact
	<i>Egretta alba</i>				
	<i>Egretta garzett</i>	0	No impact	0	No impact
	<i>Ardea purpurea</i>	0	No impact	0	No impact
	<i>Ixobrychus minutes</i>	0	No impact	0	No impact
	<i>Ardea cinerea</i>	1	Tiny negative impact	1	Tiny negative impact
(GRUIFORMES)					
	<i>Crex crex</i>	0	No impact	0	No impact
	<i>Gallinula chloropus</i>	0	No impact	0	No impact
	<i>Fulica atra</i>	0	No impact	0	No impact
	<i>Rallus aquaticus</i>	0	No impact	0	No impact
(ANSERIFORMES)					
	<i>Cygnus olor</i>	0	No impact	0	No impact
	<i>Cygnuscygnus</i>	0	No impact	0	No impact
	<i>Anas platyrhynchos</i>	0	No impact	0	No impact
	<i>Aythya nyroca</i>	0	No impact	0	No impact
	<i>Anseralbifrons</i>	0	No impact	0	No impact
	<i>Anas crecca</i>	0	No impact	0	No impact
(CHARADRIIFORMES)					
	<i>Sterna hirundo</i>	0	No impact	0	No impact
	<i>Tringa ochropus</i>	0	No impact	0	No impact
	<i>Tringa glareola</i>	0	No impact	0	No impact
	<i>Vanellus vanellus</i>	1	Tiny negative impact	1	Tiny negative impact

	<i>Gallinago gallinago</i>	0	No impact	0	No impact
	<i>Haematopus ostralegus</i>	0	No impact	0	No impact
	<i>Charadrius dubius</i>	0	No impact	0	No impact
(CORACIIFORMES)					
	<i>Alcedo taiti</i>	0	No impact	0	No impact
	<i>Merops aplaster</i>	0	No impact	0	No impact
	<i>Coracias garrulous</i>	0	No impact	0	No impact
(CORACIIFORMES)					
	<i>Dendrocopos syriacus</i>	0	No impact	0	No impact
	<i>Dryocopus martius</i>	0	No impact	0	No impact
(PASSERIFORMES)					
	<i>Hippolais</i>	0	No impact	0	No impact
	<i>Anthus campestris</i>	0	No impact	0	No impact
	<i>Lanius nubicus</i>	1	Tiny negative impact	1	Tiny negative impact
	<i>Lanius collurio</i>	1	Tiny negative impact	1	Tiny negative impact
	<i>Lanius minor</i>	1	Tiny negative impact	1	Tiny negative impact
	<i>Riparia riparia</i>	0	No impact	0	No impact

The expected very insignificant negative impact on 13 species during the construction and exploitation of the photovoltaic power park is rather hypothetical, following the precautionary principle. In this case we bear in mind the still preserved form of land and not its changed status and zoning.

The impact will be mainly on wintering and horizontal migrations. Since the Regulated Land Plot does not offer niches for nesting bird species included in the scope of protection of the protected zone “MARITZA PARVOMAY” ***we do not expect direct impact during the***

reproduction period. During the building up of the park and the first years of its exploitation there will be a slight negative indirect impact on nesting pairs in the nearby areas. **No impact during the migration is expected**, since the height of the structural elements of the park shall not exceed 4 m, despite the cited in part 1 cornice level.

In about 20 years of peace and no new drastic changes, the more stable composition and structure of phytocenoses would lead to a richer composition of the entomofauna and other invertebrates and more abundance of specimen thank to whom the site will have a more high trophic value for insectivorous birds.

5.2. DESCRIPTION AND ANALYSIS OF THE IMPACT OF THE PLAN, PROGRAMME AND PROJECT/INVESTMENT PROPOSAL ON THE INTEGRITY OF THE PROTECTED ZONE WITH A VIEW TO ITS STRUCTURE, FUNCTIONS AND ENVIRONMENTAL PURPOSES (LOSS OF HABITATS, FRAGMENTATION, DISTURBANCE OF THE SPECIES, CHEMICAL, HYDROLOGICAL AND GEOLOGICAL CHANGES AND OTHERS) BOTH DURING THE IMPLEMENTATION AND THE EXPLOITATION OF THE INVESTMENT PROPOSAL.

5.2.1. Impact on the structure of the protected zone

The Detailed Development Plan will affect 1,000 decares or 0.869 %, but the provided with Detailed Development Plan – Building-up Plan activity will not affect the structure of the zone and the distribution of land in it as presented in Chapter 4. The zoning of the property has been changed since 2006 and should be referred to as: "Other land (including cities, villages, roads, landfills, mines, industrial sites)" occupying 6% of its territory.

The site consists of regulated porperty, which is bounded in the south part to part of the regulation of the village and the urban area around the new railway station and the facilities thereon. It will only slightly change the line of the urbanized areas, without compromising the structure. To this end contributes also the lack of habitat included in the scope of protection of birds on the property.

The effect is fully reversible and after 20 years if no economic interest exists the facilities will be dismantled and recycled without installing new ones. Then to restore the current zoning of the land: "manufacturing and storage activities ", new compatibility procedures must be conducted.

No other balances typical for the structure of the zone will be disrupted.

5.2.2. Impact on the functions and the environmental purposes of the protected zone

The panels will be located over 1000 decares of land without damaging it as supporting structures will be driven into the substrate, on which there is no habitat to be protected and no habitats of bird species subject to conservation in the protected area.

Given this ***habitat loss and fragmentation of populations of bird species subject to conservation and deterioration of their structure can not be expected.***

It can be expected as a minor impact, harassment, which is comparable to the one caused by traditional agricultural practices established in the area: the construction of the multiple railroad, train station and related facilities - culverts, overpasses, underpasses ... The selected and described technology does not cause changes in the geological basis and does not affect groundwater. No emissions of chemical substances in air, water and soil are to be expected.

The realization of the photovoltaic power plant will not cause succession processes leading to changes in the species composition of the avifauna or in the environmental conditions - chemical, hydrological, geological, climatic or other changes.

The key elements of bird species habitats, subject to conservation in the protected zone "MARITZA PARVOMAY" with an identification code BG0002081 will not be affected in any way or lost. It can be expected, increased anthropogenic pressure, but within the formed ecosystems and populations of birds.

The expected impact is of a temporary nature and does not contradict the objectives of the declared zone, namely:

- Conservation and maintenance of the habitats of the listed bird species in order to secure a favourable conservation status;
- Restoration of the habitats of the bird species which need an improvement of their conservation status;

In the borders of the protected zone it is prohibited:

- the reduction of the size of riparian mixed forests by the means of local forest species;
- the setting on fire of reed fields and riverside vegetation;
- plowing and planting of lawns, pastures and fields, and their conversion into plantations;
- Removal of landscape features (field margins, single and group trees) on agricultural lands;

- Use of pesticides and fertilizers in meadows and pastures.

The expected impact can be minimized by applying the recommendations in part 6. No special compensatory measures are required.

5.3. Cumulative effect

The analysis of the information presented in part 2 shows that so far within the zone have dominated the investment proposals and plans in the field of agriculture. This corresponds to the nature of employment in the region and area. Generally they cover 1031.5 decares, but most are related to activities that do not take land from the area and do not change the established way of permanent use of land - 953,248 decares, including reconstruction of greenhouses, drip irrigation, change of designation of buildings for dairy farm, building departments of existing urbanized areas - sub-steam enterprise and gasification to the farm for processing of fruits and vegetables ... New Detailed Development Plans and Building-up Plans and investment proposals affecting areas of the region, cover 78,252 decares, or 0.067 %. They are associated with building of new greenhouses and warehouses.

The six submitted proposals for hydroelectric power stations would overload anthropogenically Maritsa River in the section covering the protected area and the change parameters of the water body could affect the descriptions of the object of conservation. None of them possess an entered into force Detailed Development Plan and building permit and permission for use of water, and three of them possess already expired permits for water use. Thus, they can't be exploited after the entry into force of the Management Plan of the Maritsa Basin that banned their activity.

The infrastructure proposals in the area cover 174,368 hectares or 0.101 percent of its size. It is meant cable connections, sewerage and wastewater treatment plants, which, although withdraw or violate temporarily minimum areas, can lead to a better state of the environment in the area.

Minimal impacts on the terrain of the area will occur due to new production activities - 72,234 decares, or 0.063 percent and housing - 4,650 decares or 0.004%. By both types of objects are confiscated lands and their permanent realization leads to losses.

The Detailed Development Plan – Building-up Plant will affect 1,000 decares or 0.869%, and along with the other projects 1 415 681 decares or 1.230 percent of the area of the protected zone “MARITSA PARVOMAY”.

The areas intended for photovoltaic power plants are 1154.829 decares in total or 1.004 percent.

The performed calculations are quite relative in view of the nature of this proposal for a new Detailed Development Plan – Building-up Plan for Change of Permanent Use of Regulated

Land Plots. Since 2006 they are intended for “land for manufacturing and storage activities” and “de jure” the imported into the table 1000 decares are already urbanized areas.

In this sense, the two proposals for Detailed Development Plan occupy a total of 072,337 decares, but these have already changed their zoning to “Other land (including cities, villages, roads, landfills, mines, industrial sites)” occupying 6% of territory of the special area of conservation “MARITSA PARVOMAY” as already pointed out in part 5.2.2. New Detailed Development Plans and investment proposals affecting areas of the region of importance for bird conservation concern only 343,344 hectares or 0.298 percent of its territory in dealing with the hypothetical situation that all large and small investors provide finance and implement their projects.

Objects are spatially distant from the site subject of the Detailed Development Plan and even if they match the period of construction of the photovoltaic parks they can not have a cumulative impact on birds and their habitats.

In view of the nature of the proposed plan it can be considered that it offers much more environmentally sensitive for the area option to change the zoning of the land, which still keeps the substrate - the former pasture, which is stored and has a temporary character. It is quite possible that the best in terms of the protection zone option in 20-25 years after the dismantling of depreciated equipment, is that they should not be restored and reintegrated on the site. The offered new option for the manner of the utilization of the Regulated Land Plot requires much less impact in installation works - noise, vibration, presence of people and equipment than in the construction of a plant or a factory. Moreover, after installing such effects will almost absent in contrast to the previous situation.

Until this moment no investment proposal or Detailed Development Plan for photovoltaic power plant has been realized. All they have significant for the area character, are minimal in size and are spatially distant from one another. They do not take the habitats of bird species subject to protection. The impact on the trophic base in the area is small.

The indirect effects grows without risk of the key elements of the area.

Given the above, we believe that as outlined in infrastructure and natural resources, schedule, location, and configuration parameters, the expected cumulative effect of the implementation of the Detailed Development Plan with all others in zone will be minimal and will not adversely impact on the objectives and key elements of the protected zone “MARITSA PARVOMAY”.

6. PROPOSALS FOR MITIGATING MEASURES STIPULATED FOR AVOIDANCE, DECREASE AND POSSIBLE ELIMINATION OF HARMFUL IMPACT FROM REALIZATION OF THE PLAN, THE PROGRAMME AND THE PROJECT/ THE INVESTMENT PROPOSAL ON THE PROTECTED AREA AND SPECIFICATION OF THE IMPACT ROLE ON THE SUBJECT OF PROTECTION OF THE PROTECTED ZONE AS A RESULT OF THE APPLICATION OF THE PROPOSED MITIGATING MEASURES

The projected, although minimal anthropogenic pressure can be mitigated by a series of measures. They are associated primarily with the indicators to be set in Regulated Land Plot and technical project.

While preparing the proposed mitigation measures we have tried to be extremely specific, considering the stage of examination and evaluation of the investment proposal at its earliest stages, determined by the requirements of the harmonized Bulgarian environmental legislation. We believe that it is appropriate that they provide the framework describing the parameters most favorable for the environment and the key elements of a protected area in the preparation of technical projects. All possible impacts in both of the phases have been taken into account - construction and operation developed in the current exhibition.

6.1. During the time of design and construction of the energy park

- ✓ The placement of the panels on the photovoltaic power plants must be designed in a way that gives the maximum allowed possibility for the free migration of species. The disposition of few meters satisfies these requirements.
- ✓ The mounting of the modules must be carried at a height of not less than 1.5 m and with disposition of several meters to provide the possibility for passing under them and the use of the area below them by different sized animals.
- ✓ The modules should be placed in a way to provide for all-day lighting under them and no less than 30% of the lighting of the open spaces, which roughly equals the forest canopy from 0.6 - 0.7, below which normally undergrowth vegetation develops.
- ✓ To provide and mark the locations for the temporary disposal of materials from construction activities.
- ✓ The fence should be computed and filled with lightweight construction, restricting the access to grazing or passing large domestic animals and humans, but with passages for wild animals, characteristic to the area, for the provision of migration corridors for small mammals and herpetofauna and for opportunities for migration and use of the trophic base. This way, the area will be integrated more quickly and adequately established in the zone of food chains and pyramids of birds subject to conservation.

- ✓ During the designing and the building of the infrastructure of the site the best European practices should be used. Rehabilitation of the dirt roads should have parameter that will have a minimal effect on the environment and the protected zone. The cable connections between the modules, the substation and the place of connection to the national electricity grid /substation Borisovgrad / should be underground.
- ✓ We recommend if possible the use of trackers of leading world companies, which is the most reliable and proven technology today. This allows the solar panel to automatically follow the movement of the sun throughout the day, which increases the sunlight capture by 25% over conventional fixed-tilt systems, significantly reducing the requirements for the use of the primer. The manufacturer should be a member of of the PV Cycle, or other industry group that works to achieve "Green Energy for the Planet" through creating a voluntary program for the recycling of PV modules and responsibility throughout the chain. The industrial processes for the recycling of silicon modules do exist today and the valuable materials can be recovered. The recycling reduces waste and reduces the cost of production of new panels.
- ✓ To provide for measures for protection of the land around the area of the investment proposal from ruderal and sinantropna invasion - eg. hedges of hornbeam and hawthorn.
- ✓ When installing the module a system for hammering metal bearing components without cement should be set.
- ✓ During the construction modern construction equipment and machinery should be used, compative wht the size of the mounted panels and the other elements. Entry of equipment and damage to adjacent areas and drainage channels should not be allowed. The use of small-scale lifting and transportation machines will minimize possible negative impacts over the environment and the area.
- ✓ To take all possible measures to prevent spilling of materials during the loading and unloading processes. The construction will be performed in a contemporary manner, with appropriate materials. To limit the emissions of dust during construction, through regular cleaning and spraying of the site by technological process water from an uncontaminated source. The expansion of the consntruction worlds beyond the territory of the site, deployment of works, disposal of construction materials or waste, spoil, should not be allowed in any case.
- ✓ It is necessary that the constntruction be done outside of the reproduction period of the Birds (April-June) and thereby buffering the effects of factors and anxiety caused by noise and vibration

- ✓ The construction waste, however small it may be, should be removed from the site to a landfill, determined by the mayor of Parvomay
- ✓ The fire and emergency safety rules should be strickly adhered to and an emergency plan should be developed
- ✓ A comprehensive awareness campaign among the construction workers for the purpose of the protected area should be carried out, with the goal to prevent damage to flora and fauna in the area
- ✓ In case of finding, prior to and during construction, tortoises, hedgehogs, snakes and other species, they can be transported and released at a safe distance from the object, in order to conserve the protected species and prevent of loss of feeding grounds of birds subject to conservation in protected area
- ✓ A chemical toiled for the needs of the staff should be accounted for

6.2. During the operation of the park

- ✓ During the operation it is not expected to see emissions with harmful character, apart from personal security vehicles, staff and visitors to the surrounding terrain. The generated noise is minimal and we do not not expect noise levels to affect the residents of the village and town Karadzhalovo Parvomay, as well as the flora and fauna
- ✓ It is important during the expected change in environmental conditions under the modules: accommodation of shadow comfortable grass species and faster development of vegetation due to moisture retention, moving in of rodents, etc., not to be expelled or even worse hunted the species entering the area, mainly preying birds
- ✓ Unrestricted care of in-house dogs should not be allowed free for the protection of the territory of the photovoltaic park, as it will significantly affect vital areas of the wild species. Thus, the territory will be reintegrated in the currently existing food chains and networks
- ✓ The activity is not associated with the generation of industrial waste, but household waste but be separately collected and treated in accordance with the Municipal program for waste management
- ✓ It would be good to provide a two-year monitoring of birds in the area, which results should be presented to the Regional Inspectorate of Environment and Water in

Plovdiv and to the Ministry of Environment and Water

- ✓ If possible to rehabilitate the drainage canals surrounding the property and to restore their functional purpose, which will reduce the groundwater level and stabilize the supporting structures, while the development of vegetation in the dry elevation will insulate the negative landscape effect.
- ✓ Plowing and covering of the substrate with inert materials should not be allowed. The existing grass cover can be maintained by periodic sheep grazing or by mowing.

7. CONSIDERATION OF ALTERNATIVE SOLUTIONS AND ASSESSMENT OF THEIR IMPACT ON THE PROTECTED AREA, INCLUDING THE ZERO ALTERNATIVE.

In the selection of the current option of the activity determined by the Detailed Development Plan several *location alternatives* were considered.

An option with lands located north of the road and railway line between the city of Parvomay and the village of Karadzhalovo was considered. The considered alternative has several advantages compared with the proposed one - a closer distance to the “Borisovgrad substation, stronger substrate, no high groundwaters, lack of any nearby trees, greater distance from the Maritsa River, but also disadvantages – a little smaller area, lands with agricultural land use status and a location in the heart of the protected area.

This option would require the construction of additional infrastructure, rehabilitation of roads in need of permanent cover, leveling of the ground ... This would influence significantly more the quality of the territory with the presence of steppe habitats within the protected area and would increase the construction costs, i.e. both the economical and environmental conditions are less favorable, regardless of the good solar energy values.

There are **alternatives to the structure, number and types of PV modules and inverters**. They will all be examined in detail in the feasibility studies.

Here we will accentuate on the fact that the main components that make up a photovoltaic power plant are modules, inverters and structures. Different technology modules can be combined with different technology inverters and different types of structures. The combination of these three components determine the final appearance of the plant.

The zone of greatest importance is the choice of the mounting structure, which **is** one of the most important aspects in the design of a future solar power. It consists of three components - foundation, stands and a bearing part. Depending on the combination of these components, a large variety of options is available.

The foundation must provide the secure attachment of structure to the terrain or to the roof. It should withstand both compressive forces and lifting forces. In plants on open terrain, the following bases are used:

- ✓ Ground stuck galvanized profiles type "guard rail." Through a special machine, galvanized profiles or flat pipes are hammered on the ground, and then the other elements of the structure are attached to them. The advantage of this type of foundation is the low cost of the profiles and the labor for the mounting (hammering). This is, in fact the cheapest kind of foundation. The low price, however, leads to 2 very big disadvantages. The first is the reduced lifetime. At the very process of hammering, their zinc coating is scratched and the process of corrosion starts virtually immediately, and after 15-20 years the metal will decay. The second disadvantage is the possibility that the structure may not withstand the combined action of the soaked after heavy rain soil and strong crosswinds. This shortcoming is particularly evident in areas prone to retaining groundwater or in lands, which have been arable for years.
- ✓ Screws, rolled into the ground. Special machine applies screws with a special form. The technology is similar to above with the difference that the screws have threaded sections, which makes this type of foundations extremely strong to all influences and forces. At the same time there are no problems with corrosion, because the screws are made of pipes with wall thickness of 8-10 mm each, which means that they will endure hundreds of years in the earth before rotting completely. The disadvantage of screws is of course their high price - from 70 to 90 EURO for 1 screw. Regardless, their use is appropriate for structures with greater distance between the stands.
- ✓ Concrete footings on the surface of the ground. This type of foundation is the cheapest and its drawbacks are the large amount of work for shuttering and casting and the erosion of the open concrete over time. The second advantage is that it does not rely on the strength of the soil. Concrete foundation remains in place only thanks to gravity and there is not need for any additional fixings to the ground. This type of foundation is recommended for areas that already have a compacted surface – pastures and grassland.
- ✓ Buried concrete foundations to antifreeze depth. This is a variation on the above. Advantage is that the foundation does not erode over time. The disadvantage is that needs excavation works. The cost of implementation is a bit more expensive. It is recommended for areas with low density of the soil (arable land) or for areas with larger elevation (for reasons of stability).

All types of structures are applicable, as preference is given to screws, screwed in the ground to an antifreeze depth, which to a maximum extent conserves the grass cover, and hence the biodiversity.

When choosing a technology with screws, screwed in the ground, we believe that the impact on the environment and the protected area is minimal and this achieves the necessary balance between the environmental and the economic factors.

The "Zero alternative" would preserve the current situation with the status of the land and its approved status for permanent use – for "Manufacturing and warehousing activities", implying the construction of production halls and buildings, paved and concreted sites, a complex of atmospheric emissions, water and soils, noise, construction of major infrastructure - water supply, sewerage networks ... The so introduced production and logistics activities involve permanent damage to the ground without possibilities for reversibility. With the newly proposed Detailed Development Plan a new way of regulating land use for permanent use is introduced – for the production of electricity. The construction of photovoltaic park keeps the grass coverage to a large extent, does not actually damage the soil layer and after the period of operation in the absence of adequate market situation occurred changes are almost 100% reversible. Incomparably smaller is the impact on surrounding land located in protected area. So in practice the considered DDP introduces regulations and activities with a significantly more positive impact on the environment and the Protected zone "MARITZA PARVOMAY" than the status quo in the "Zero alternative".

In view of the site location, the land ownership and the detailed characteristics of the terrain, the environment, as well as the "MARITZA PARVOMAY" Protected Zone, the so proposed implementation of DDP is the best alternative for the region.

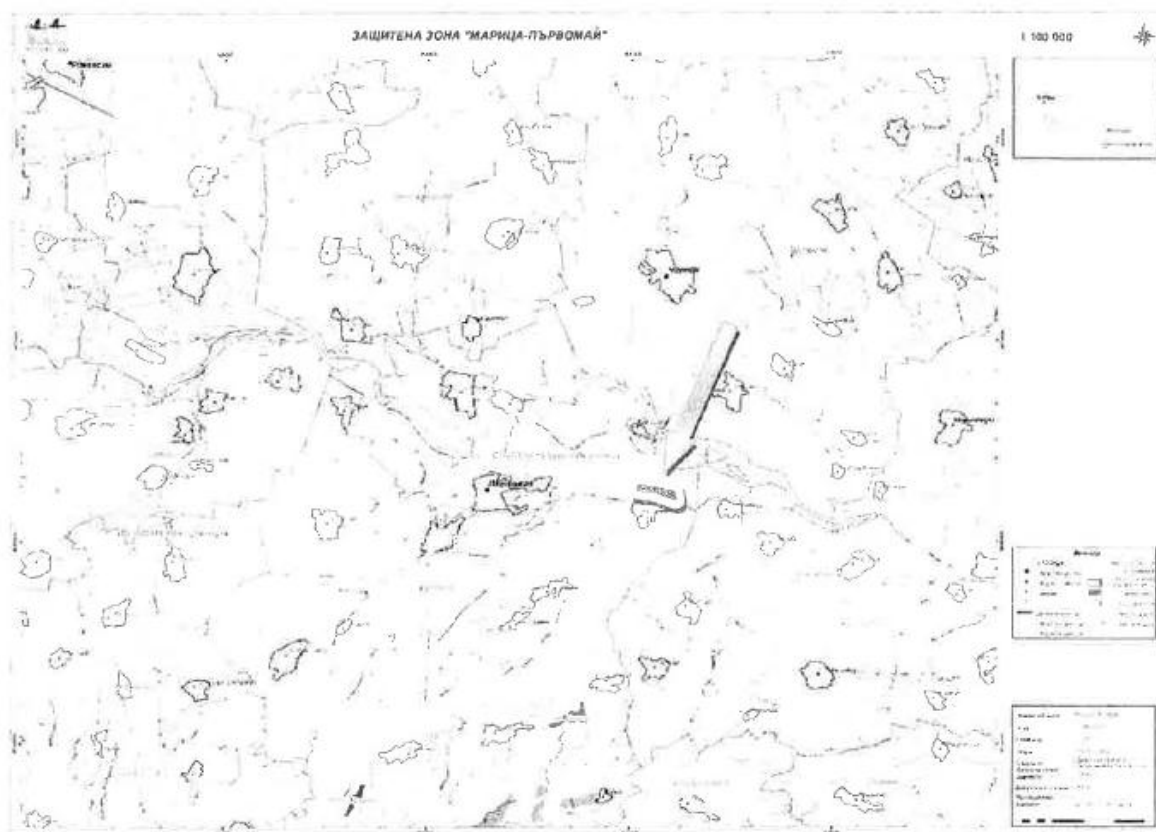
8. MAPS WITH THE LOCATION OF ALL ELEMENTS OF THE PLAN, THE PROGRAM AND THE PROJECT THE INVESTMENT PROPOSAL TOWARD THE PROTECTED AREA AND ITS ELEMENTS.

Map of the approved by the Council of Ministers protected areas according to article 6, pt. 1 from the Law of Biodiversity (NATURA 2000 acc. Directive for bird protection)

Scale 1: 1 000 000



Parvomay Protected Area



9. CONCLUSION FOR THE TYPE AND EXTENT OF NEGATIVE IMPACT ACCORDING TO THE CRITERIA OF ARTICLE. 22

Full characterization of DDP and offered by it type of activity was presented in pt.1, and the characteristic of similar investment proposals with a view to clarifying the cumulative effect in item in pt.2. It takes in consideration the construction of a photovoltaic park with total area of 1000 decares.

Taking in consideration the precisely clarified in pt. 3 descriptions of the elements of the Plan and activity, which alone or in combination with other plans, programs and projects / investment proposals could have a significant impact on the protected area or its elements, as well as full descriptions and specifications of the Protected area "**MARITZA PARVOMAY**" (code **VS0002081**[^] according to **art. 6**, paragraph 1,3 and 4 of the Law of Biologic Diversity (NATURA 2000 IN THE PART FOR PROTECTING THE HABITATS OF BIRDS OF DIRECTIVE

79/409/EEC), presented in paragraph 4, a conclusion is necessary, in accordance with the findings in the statement in pt. 5 .

- ◆ Implementation of DDP in that terrain and borders does not conflict and does not violate the purposes declared to the area.
- ◆ Activities do not affect localities and habitats of rare, endemic and included in the annexes to the Law on Biodiversity plant and animal species.
- ◆ A very little negative impact is expected on 13 kinds of bird species, included in the protected subject - short-toed hawk (*Accipiter brevipes*), sparrowhawk [*Accipiter nisus*], long-legged buzzard (*Buteo rufinus*), common buzzard (*Buteo buteo*), black spike kestrel (*Falco tinnunculus*), white stork (*Ciconia ciconia*), great egret (*Egretta alba*), grey heron (*Ardea cinerea*), lapwing (*Vanellus vanellus*), kingfisher (*Alcedo atais*), white-fronted shrike (*Lanius nubicus*), Pipit (*Anthus eampestris*), red-backed shrike (*Lanius collurio*) and red forheaded shrike (*Lanius minor*). It is is rather hypothetical, following the precautionary principle and the case is taking into account the still preserved type of land, and not on the altered status and prescribed manner of permanent use.
- ◆ They will not be fragmented and the structure of their populations will not be damaged. There will be no damage on the ecological niches of the typical and permanent for the area species of the avifauna.
- ◆ There is a lack of impact on other birds and their habitats included in the conservation area.
- ◆ For the birds the area will largely retain its present significance. All species subject to conservation, likely for the region will be able to go through in the course of close and distant, trophic and reproductive migrations and the habitats of rodents will be restored to a large extent. An increase in their abundance is expected and hence an increase the value of the area as a trophic base for predators.
- ◆ In total the anthropogenic pressure in the region will increase slightly. Negative impact on the biota in the area and birds in particular will have the installation accompanying noise, vibrations, entry of people and equipment in the property and its surroundings. This impact will be short as a timeframe during the day and temporarily within no more than one month of the year.
- ◆ The impact will be mainly for wintering and horizontal close migrations and no direct impacts are expected during the breeding period. During the building of the park and the first years of operation there will be slight negative indirect impact on nesting pairs in nearby sites. No impact is expected during the migration, since the height of the structural elements of the park does not exceed 4 m.

- ◆ By Itself DDP will affect 1,000 decaress or 0.869% of the protected zone, but the proposed action will not affect the structure of the protected zone and the distribution of lands by types of land cover as land use has been changed since 2006 year and should be referred to the class "Other lands (including cities, villages, roads, landfills, mines, industrial sites) "occupying 6% of its territory.
- ◆ In reality the panels will be placed over 1000 decares of land without damaging it as supporting structures will be driven into the substrate, on which there is no habitats of bird species subject to conservation in the protected area. Given this, habitat loss and fragmentation of populations of bird species subject to conservation and deterioration of their structure can not be expected.
- ◆ The realization of photovoltaic park will not cause succession processes leading to changes in species composition of avifauna or in terms of environment - chemical, hydrological, geological, climatic or other changes.
- ◆ DDP together with all others will affect **1415.681 decares** or **1.230%** from the area of a protected zone "MARITZA PARVOMAY", but only the areas declared for Photovoltaic plant are **1154.829 decares** or **1.004%**. Given the fact that this proposal and similar other one for a farming airport occupy a total of 1 072 337 decares, but have an altered status and part of the land classes "Other land", they really do not take land from the area, affecting zones of real importance for the conservation of birds on the subject of conservation. This affects **only 343,344 decares such areas or 0.298 percent** of the its territory in considering the hypothetical situation that all large and small investors secure funding and implement their projects. In this sense, cumulative effect is not expected .

The protected zone has areal character and the point placement of the photovoltaic park near the borders of the village regulation will not cause fragmentation of populations of species of birds included in the scope of protection. The indirect impacts are increasing without the risk to the key elements of the area.

- ◆ During the operation the generation of hazardous waste to the environment, population and the ornithology is not expected. The production does not generate waste.
- ◆ In fact, no area will be consumed since the structural pillars will be embedded in the ground without concrete.
- ◆ During operation, there will be no need to use additional natural resources, apart from the renewable energy source - the sun. Only reflected sunlight can irritate the soaring birds, but the panels are designed so that their special coatings enable them

to absorb the maximum amount of solar radiation **rather than** reflect it.

- ◆ All clarified eventual negative impacts can be minimized through adequate mitigation measures that will provide both the preservation and the insurance in the future of a favorable nature protection state of the bird species and their habitats, subject to conservation in a protected area **"MARITZA PARVOMAY" / code VS0002081 /**.
- ◆ Alternatives have been considered with respect to the location and with respect to the structure, the number and the types of PV modules and inverters. The selected option has the best combination of economic and environmental characteristics.
- ◆ The considered DDP introduces regulations and activities with a significantly more positive impact on the environment **and** the protection zone **"MARITZA PARVOMAY"** than the status quo in the case of the **"Zero alternative"**.
- ◆ Impact on the other, most nearby positioned, other elements of the National Ecological Network will be completely non-existent
- ◆ No special compensation measures are needed.

A general conclusion follows logically:

The DDP, the construction and the realization of the photovoltaic park will not have a significant and noticeable impact on the object and purpose of conservation in a protected area "MARITZA PARVOMAY"/ code VO00020811. There will not be an irreversible effect on the types of birds included in the scope of protection and their natural habitats.

There will be no fragmentation or degradation to the structure and dynamics of their populations. The anthropogenic pressure will increase by a minimum, but in the framework of the formed ecosystems.

DEGREE OF IMPACT ON TYPES OF NATURAL HABITATS	DEGREE OF IMPACT ON HABITATS AND POPULATIONS OF TYPES SUBJECT TO PROTECTION	DEGREE OF IMPACT ON NATURAL PROTECTION GOALS AND THE ENTIRETY OF THE PROTECTED AREA	POSSIBILITIES OF MITIGATING AND/OR RECOVERY MEASURES	PRESENCE OF ALTERNATIVE SOLUTIONS AND POSSIBILITIES FOR CHANGES IN THE INVESTMENT PROJECT	PRESENCE OF REASONS FROM FIRST DEGREE SOCIAL INTEREST OF THE INVESTMENT PROJECT	PROPOSED COMPENSATION MEASURES
LOW	LOW	LOW	YES	NO	YES	NO

10. EXISTENCE OF CIRCUMSTANCES UNDER ART. 33 LAW OF BIODIVERSITY, INCLUDING EVIDENCE OF THIS AND PROPOSAL FOR SPECIFIC COMPENSATORY MEASURES UNDER ARTICLE. 34 LAW OF BIODIVERSITY - WHEN THE CONCLUSION UNDER ITEM 9 IS THAT THE SUBJECT FOR CONSERVATION IN THE PROTECTED AREA WILL BE SIGNIFICANTLY IMPAIRED FROM THE IMPLEMENTATION OF THE PLAN, PROGRAMME AND PROJECT OR FROM THE IMPLEMENTATION AND OPERATION OF THE INVESTMENT PROPOSAL AND THAT THERE IS NO OTHER ALTERNATIVE.

From the foregoing it is clear that there are no circumstances according to article. 33, of the Biological Diversity Act, including evidence for it and need for a proposal for compensatory measures under Art. 34 of the Act.

11. INFORMATION ON THE USED RESEARCH METHODS, INCLUDING THE DURATION AND THE PERIOD OF FIELD RESEARCH, METHODS OF FORECAST AND ASSESSMENT OF IMPACT, SOURCES OF INFORMATION, DIFFICULTIES IN GATHERING THE NECESSARY INFORMATION.

In developing of the assessment standard methods have been used for field tests, applied to determine the species composition in higher plants and vertebrates.

The description and the analysis of the likelihood and the degree of impact of the considered plan over the object and purpose for preservation of the conservation zone are based on literature data of the flora, fauna and the formed secondary ecosystems on the land of the property and the site and then performed field studies in the period September 2010 - February 2011.

The performed analyzes and conclusions are in accordance with the requirements of EU Directives, all international conventions, to which Bulgaria is a party and the harmonization of the Bulgarian nature conservation legislation.

To clarify the cumulative effect on the protected area the database of the Regional Inspectorate of the Environment and Waters - Plovdiv and Stara Zagora has been used.

No difficulties have not encountered in recruiting the necessary information.

Web sites and suggestions from NGOs and rich literature as a source of information for the region and protected areas have been used:

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12. DOCUMENTS UNDER ART. 9, PARA. 2 AND 3.

Declarations of the experts, authors of the assessment under Art. 9, para. 3 of the Ordinance on conditions and procedures for assessing the compatibility of plans, programs and projects and investment proposals with the object and purpose of conservation of protected areas;

Evidence of art. 9, para. 2 for the presence of requirements under Art. 9, para. 1 of the Ordinance on conditions and procedures for assessing the compatibility of plans, programs and projects and investment proposals with the object and purpose of conservation of protected areas.

DECLARATION

by associate professor Dr. Anton Iliev Darakchiev

I HEREBY DECLARE,

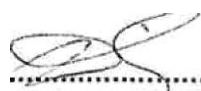
that in the development of the report for assess of the degree of impact on a **protected area "MARITZA PARVOMAY"**, determined by an identification code BC0002018 an investment proposal for **"Detailed plan to change the type of permanent use of Regulated Land Plot-1 to Regulated Land Plot XXM1, block.119 (Property number 000119, acc. Cadaster) Karadzhhalovo village, Parvomay Municipality, Plovdiv district, to build photovoltaic power plant for electricity production capacity to 50 MW"**

1. I am familiar with the Bulgarian and European environmental legislation and during my work on evaluations of art. 7, item 4 of the Ordinance on the terms and procedures for performing an assessment of the compatibility of plans, programs, projects and investment proposals with the object and purpose of protected areas, I refer and comply with these requirements and the available methodological documents;
2. I'm not personally interested in the implementation of the plan, project, program or investment proposal - subject to the procedure for compatibility assessment
3. I'm not a related party under the Commercial Act with the Investor;
4. I am not in a relationship with the Investor or the competent authority in ways that produce reasonable doubts about their impartiality.

I attach:

1. A copy of diploma number B 001009 for completed higher education.
2. A copy of the decision of the Supreme Attestation Commission for the award of the academic title "Professor" from 28.07.1979.
3. A copy of the decision of the Supreme Attestation Commission for the award of a degree "Candidate of biological sciences" from 09.11.1970.
4. A copy of the official notice №367/23,11.2009, issued by Plovdiv University "Paisii Hilendarski"
5. Brief resume of issued publications, experience in scientific, research and teaching in higher education. .

SIGNATURE:



/A. Darakchiev/

ATTACHMENT OF THE DIPLOMA OF MR. DARAKCHIEV

(Generally illegible, Visible sections:

Issued in Sofia 29.10.1956

GPA: 3.75 / 6.00

Graduated Biology)

МИНИСТЕРСТВО НА КУЛТУРАТА

ДИПЛОМА

ЗА ЗАВЪРШЕНО ВИСШЕ ОБРАЗОВАНИЕ

№ 54001009 *

Присъдена е на този диплома
на Даракчиев, Димитър
роден на 15 юни 1934 г. в Бургас,
околия Бургас
в постъпил на 10 г. и завършил
с диплома в Бургас
по специалност Биология
с успех 3.75 (3.75)
и с отличие на издържаната изпитна коми-
сия от 10 юни 1956 г. му се присъвява
квалификация биолог
по биология и физика
ПРЕДСЕДАТЕЛ НА ДЪРЖАВНАТА ИЗПИТНА
КОМИСИЯ
Д-р Д. Даракчиев
г. София, 29.10.
Регистрационен № 42487

**A COPY OF THE DECISION OF THE SUPREME ATTESTATION COMMISSION FOR THE AWARD OF THE
ACADEMIC TITLE "PROFESSOR" FROM 28.07.1979.**

ВИСШАТА АТЕСТАЦИОННА КОМИСИЯ

АНДОН



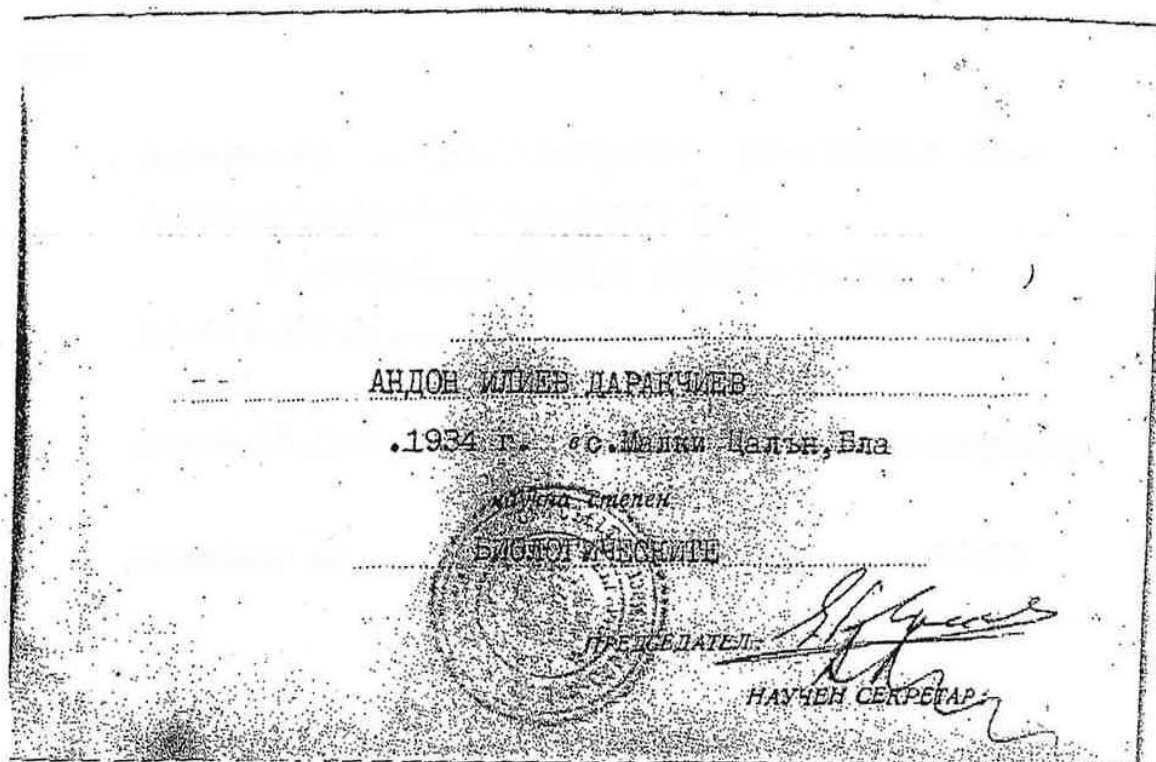
(протокол: IV № 6 от 28.VI. 1979 г.)

ПРЕДСЕДАТЕЛ НА ВАК:

НАУЧЕН СЕКРЕТАР НА ВАК:

[Handwritten signatures]

A COPY OF THE DECISION OF THE SUPREME ATTESTATION COMMISSION FOR THE
AWARD OF A DEGREE "CANDIDATE OF BIOLOGICAL SCIENCES" FROM 09.11.1970.



**COPY OF THE OFFICIAL NOTICE №367/23.11.2009, ISSUED BY PLOVDIV UNIVERSITY "PAISII
HILENDARSKI"**

WORK NOTICE

This note is issued to verify that Associate Professor Andon Iliev Darakchiev, during the period 2005-2009 was teaching the discipline of Ornithology to the master class of "Biodiversity, ecology and conservation", at the Biological department at the Plovdiv University Paisii Hilendarski.

Signed by the Dean of the Department Mr. R. Mladenov



ПЛОВДИВСКИ УНИВЕРСИТЕТ "ПАИСИЙ ХИЛЕНДАРСКИ"

България 4000 гр. Пловдив ул. "Цар Асен" № 24; Централна: (032) 261261,
Ректор: (032) 631 459, 631 449 факс (032) 628 390 e-mail: pdivniv@pu.acad.bg

Изх. № 967/23.11.2009 г.

СЛУЖЕБНА БЕЛЕЖКА

Настоящата се издава в уверение на това, че доц. д-р Андош Илиев Даракчиев през от 2005 – 2009 год. е водил учебни занятия по дисциплината „Орнитология“ на магистратура „Биоразнообразие, екология и консервация“, към Биологическия факултет на Пловдивски университет „Паисий Хилендарски“.

Декан на Биологическия факултет.....



.....
Р. Младенов/

WORK STATEMENT FROM THE AGRARIAN UNIVERSITY OF PLOVDIV

This certificate is issued to professor ANDON ILIEV DARAKCHIEV with ID 3408154580 stating that he is a paid lecturer at the Centre. for continuous education in 'External and internal landscaping and design. He has been teaching the module "Greenhouse fauna and ornamental fish" from 1995 to present. This certificate is addressed to whom it may concern.



АГРАРЕН УНИВЕРСИТЕТ - ПЛОВДИВ
ЦЕНТЪР ЗА ПРОДЪЛЖАВАЩО ОБУЧЕНИЕ
Ул. "Менделеев" 12, тел: 032/ 654 367



УДОСТОВЕРЕНИЕ

№ 400

Настоящото удостоверение се издава на лицето доц. ксн
АНДОН ИЛИЕВ ДАРАКЧИЕВ с ЕГН 3408154580 в уверение на
това, че е хонорован преподавател в Центъра за продължаващо
обучение в специализация „Външно и вътрешно озеленяване и
дизайн“. Извежда модул „Паркова фауна и декоративно рибовъдство“
от 1995 г. до настоящия момент.

Удостоверението му се издава да послужи при необходимост.

02.09.2009 г.



ДИРЕКТОР:
д-р Г. Георгиева/

LIST OF PUBLICATIONS

1. Angelov, Paul A. Darakchiev. 1968. On food and Motacilla cinerea Tunstall
Motacilla alba L. Scientific works of VPI, Plovdiv. 6.3. 1947 to 1957.
2. Darakchiev, A. , 1967. Materials on the multiplication of Wagtail
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4. Darakchiev, A 1969. Contribution on the seasonal migrations of some birds in the Rhodopes.
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7. Darakchiev, A 1972. On the seasonal dynamics of some birds in the Rhodopes. Scientific
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13. Darakchiev, A 1987. Contribution on the demography of collared dove (Streptopelia
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15. Darakchiev, A, E. Brankova G. Seizov, C. Nedyalkov, K. Delchev Kundev F., T. Babacheva,
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 33. Darakchiev, A, D. Nankinov. 1978. Spoonbills (*Clypeata* L.) as a breeding bird in Atanasov pean Lake - Bourgas. Scientific Works of Plovdiv University "P. Hilendarski". 16.4. 199-203.
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DECLARATION

by independent expert Dobromir Iliev Ganev

I HEREBY DECLARE,

that in the development of the report for assess of the degree of impact on a **protected area "MARITZA PARVOMAY"**, determined by an identification code BC0002018 an investment proposal for **"Detailed plan to change the type of permanent use of Regulated Land Plot-1 to Regulated Land Plot XXM1, block.119 (Property number 000119, acc. Cadaster) Karadzhhalovo village, Parvomay Municipality, Plovdiv district, to build photovoltaic power plant for electricity production capacity to 50 MW"**

1. I am familiar with the Bulgarian and European environmental legislation and during my work on evaluations of art. 7, item 4 of the Ordinance on the terms and procedures for performing an assessment of the compatibility of plans, programs, projects and investment proposals with the object and purpose of protected areas, I refer and comply with these requirements and the available methodological documents;
2. I'm not personally interested in the implementation of the plan, project, program or investment proposal - subject to the procedure for compatibility assessment
3. I'm not a related party under the Commercial Act with the Investor;
4. I am not in a relationship with the Investor or the competent authority in ways that produce reasonable doubts about their impartiality.

I attach:

1. A copy of diploma number 7177 for completed higher education.
2. A copy of the official notice №3/10.7.2000
3. Brief resume of issued publications, experience in scientific, research and teaching in higher education.

SIGNATURE:



Д.Ганев/

/D. Ganev/

COPY OF DIPLOMA

Plovdiv University "Paisii Hilendarski"

Diploma for completed higher education number 7177

This is to certify that Dobromir Georgiev Ganev, born on 15 may, 1956 in Nova Zagora, Sliven district was admitted in 1976/77 and graduated in 1980, the complete curriculum at the Plovdiv University "Paisii Hilednarski" in the major BIOLOGY. His GPA during the course of study is 5.14/6.00. and average grades on his state examination 4.75/6.00.

With a decision of the State examination committee he is awarded the qualification biologist, instructor in biology with a minor in chemistry.

30 October 1980. Signed by the Dean of the Plovdiv University.



WORK NOTICE (EMPLOYMENT HISTORY)

Name of the administration and category	Organizational branch	Position Rank according to specs	Base salary	Start date	Signature of the employers	End date	Reasons for termination	Signature and seal of the administrator
1	2	3	4	5	6	7	8	9
Regional inspectorate of environment and waters (RIEW) – B2	Control of the Environment (CE)	Chief expert	225	01.05.2000	-	01.10.2000	Art. 17 from Ordinance of the employment status of government employees (RESGE)	-
(RIEW) – B2	(CE)	Chief expert	248	01.10.2000	-	01.04.2001	Art. 17 (RESGE)	-
(RIEW) – A4	(CE)	Chief expert	303	01.04.2001	-	01.02.2002	Art. 17 (RESGE)	-
(RIEW) – A4	(CE)	Head of department	363	01.02.2002	-	01.02.2002	Art. 17 (RESGE)	-
(RIEW) – A4	(CE)	Head of department	381	01.02.2002	-	01.07.2002	Art. 17 (RESGE)	-
(RIEW) – A4	(CE)	Head of department	400	01.07.2002	-	01.12.2003	Art. 17 (RESGE)	-
(RIEW) – A4	(CE)	Head of department	414	01.07.2003	-	01.07.2004	Art. 17 (RESGE)	-
(RIEW) – A4	(CE)	Head of department	428	01.07.2003	-	01.07.2004	Art. 17 (RESGE)	-
(RIEW) – A4	(CE)	Head of department	479	01.07.2004	-	01.06.2005	Art. 17 (RESGE)	-
(RIEW) – A4	(CE)	Head of department	479	01.06.2005	-	01.07.2005	Art. 17 (RESGE)	-
(RIEW) – A4	(CE)	Head of department	503	01.07.2005	-	01.07.2006	Art. 17 (RESGE)	-
(RIEW)	(CE)	Head of department	533	01.07.2005	-	01.07.2006	Art. 17 (RESGE)	-

ИМЕ Добримир Георгиев ЕГН 560515592
 собствено бащино

Наименование на административната и категорията	Организационно звено	Длъжност Ранг Цифров № по класификатора	Основна заплата
1	2	3	4
ДИОСВ-В2	КОС	главен експерт - 4Н	225 ⁰⁰
ДИОСВ-В2	КОС	главен експерт - 4Н	248 ⁰⁰
ДИОСВ-А4	КОС	главен експерт - 3Н	303 ⁰⁰
ДИОСВ-А4	КОС	началник отдела - 2Н	363 ⁰⁰
ДИОСВ-А4	КДР	началник отдела - 2М	381 ⁰⁰
ДИОСВ-А4	КДР	началник отдела - 2М	400 ⁰⁰
ДИОСВ-А4	КДР	началник отдела - 2М	414 ⁰⁰
ДИОСВ-А4	КДР	2Н-к старши	428 ⁰⁰
ДИОСВ-А4	КОС	2Н-к старши	449 ⁰⁰
ДИОСВ-А4	ПДБРЗТ	2Н-к старши	449 ⁰⁰
ДИОСВ-Д4	ПДБРЗТ	2Н-к старши	503 ⁰⁰
ДИОСВ	ПОДПРЗТ	старши 1М	533 ⁰⁰

Дата на назначаване	Подпис на назначаване	Дата на прекратяване на служебното прикритие	Основна заплата	Подпис на прекратяване на служебното прикритие
5	6	7	8	9
01.05.2000	[подпис]	06.06.2000	225 ⁰⁰	[подпис]
01.06.2000	[подпис]	01.01.2001	248 ⁰⁰	[подпис]
01.01.2001	[подпис]	01.01.2002	303 ⁰⁰	[подпис]
01.01.2002	[подпис]	01.01.2003	363 ⁰⁰	[подпис]
01.01.2003	[подпис]	01.01.2004	381 ⁰⁰	[подпис]
01.01.2004	[подпис]	01.01.2005	400 ⁰⁰	[подпис]
01.01.2005	[подпис]	01.01.2006	414 ⁰⁰	[подпис]
01.01.2006	[подпис]	01.01.2007	428 ⁰⁰	[подпис]
01.01.2007	[подпис]	01.01.2008	449 ⁰⁰	[подпис]
01.01.2008	[подпис]	01.01.2009	449 ⁰⁰	[подпис]
01.01.2009	[подпис]	01.01.2010	503 ⁰⁰	[подпис]
01.01.2010	[подпис]	01.01.2011	533 ⁰⁰	[подпис]

LIST OF PUBLICATIONS, EXPERIENCE IN SCIENTIFIC, RESEARCH AND TEACHING IN HIGHER EDUCATION

PUBLICATIONS:

1. Ganev, D., C. Marin, C. Petrov, I. Sivov, I. Ivanov, P. Petkov. 1997. Results of the census of the white stork (*Ciconia ciconia*) in the former district of Stara Zagora during 1994-1995 In: W. Petrov (editor editor): The White Stork (*Ciconia ciconia*) in Bulgaria. Conservation Series, Vol. 2 BSPB, Plovdiv, 1997, 101-104.
2. Ganeva D., Golden. Dimitrova, D. Ganev, B. Valtchev. 2008. Problems and perspectives in the development of national ecological network in Stara Zagora. Ecology and future years, VII, 3, 23-28.
3. Matev I., D. Ganeva, D. Ganev. 2004. Fundamentals of ecology with biogeography and environmental protection, Pensoft Publishing, Sofia-Moscow.
4. Nankinov D., D. Ganev, 1990: The little known zoological collection of naturalist Vladimir Vlaskov, *Historia naturalis bulgarica*, 2, 1990, Sofia
5. P. Petkov, G. Daskalov, K. Stoycheva, D. Ovcharov, T. Petrov, Dimitar Ganev. 1997. Results of the census of the white stork (*Ciconia ciconia*) in the former Sliven region in 1994-1995 In: W. Petrov (editor redakgor): White Stork (*Ciconia ciconia*) in Bulgaria. Conservation Series, Vol. 2 BSPB, Plovdiv, 1997, 125-128.

6. Ganev, D., D. Ganeva et S. Koleva. 2007. Regime forestier en Bulgarie: entre l'Etat et les municipalites, la societe civile inexistante, Dans J. L Boucher et G. Chiasson (dir.), Developpement local en milieu forestier, Universite du Quebec a Montreal et Universite du Quebec en Outaouais (in press).

PARTICIPATION AND INDIVIDUAL PROGRAMS:

1. Participation in international seminar "local development in forest areas," Velingrad, 18-19 May 2005, organized by the Institute of Sociology and Regional Development Agency, Velingrad with two presentations:
 - a. Ganev, Dobromir. Legislative regime of forests in Bulgaria, 32 pp.
 - b. Ganev, Dobromir. Herbs and other benefits in forests in Bulgaria, 14 pp.
2. Participation in the workshop between social researchers and specialists in the field of natural resources, organized by the Corporate Management Forest Eagles Maniuoki City, Quebec, Canada, June 20, 2006, Maniuoki. A major report entitled "Development of legislation to use forests and forest resources in Bulgaria" (Evolution des regies d'utilisation de la foret et de ses ressources en Bulgarie).
3. Participation in a project of the United Nations Development Program "Green Academy" Topolovgrad 1998-1999, with reports "Destruction and degradation of forests, "Conservation of flora in Bulgaria", "Protection of animals in Bulgaria", "Protection of herbs Bulgaria and Sakar."
4. Instructed lectures and seminars with students from regular curriculum course I and II at the Bulgarian-German Agricultural College in the Thracian University in Stara Zagora discipline "Security and Environmental Protection" in the academic year 1998-1999,
5. Participation in the inventory count of biodiversity of invertebrates, fish, amphibians and mammals in Bulgaria in the program "Natura 2000 "sites:
 - ▶ Slaveevo-Dolna Arda
 - ▶ Mezek
 - ▶ River Omurovska
 - ▶ Sokolitsa River
 - ▶ River Blatnitsa
 - ▶ Blyagornitsa River
 - ▶ The Blue Rocks

SCIENTIFIC DEVELOPMENTS /LAW ON ENVIRONMENTAL, BIOLOGICAL DIVERSITY FOR LAW/

1. ASSESSMENT REPORTS FOR ENVIRONMENTAL IMPACT:
 - Recreation Complex in the village of Little Sharkovo, obitsina Bolyarovo;
 - Building a wind farm in the villages of Pelin, iris and Hood Krumovgrad municipality, province Kardjali;
 - Construction of a recreational complex in the area "Upper hambarlak" in the village Tarnichene, Pavel banya municipality;
 - Construction of hotel complex, a property number 074026 in the village of Viden, Pavel banya municipality;

- Construction of administrative and commercial complex and agricultural machinery showroom in the village Skutare, Municipality Maritsa;
- Construction of shopping center, offices, residential areas and underground parking in the city district Trakia "Plovdiv"
- Development of steam-gas power plant with 130 MV on the site of TPP Haskovo;
- Holiday Village in the village Borislavtsi, Madjarovo Municipality;
- Quarry mine in the area "Stoyanchova cheshma" in the village Katunitsa, Sadovo municipality, Plovdiv district.

2. ECOLOGICAL ASSESSMENTS

- Warehousing and logistics, dirt road field extension, external routes for electrical and water supply in the village Tsalapitsa, Maritsa municipality;
- Warehousing and logistics, routes for external power supply, water and sanitation in the village Tsalapitsa, Municipality Maritsa
- Spatial development plan of the Mineral Baths Ovoshnik.

3. COMPATIBILITY ASSESSMENT REPORTS OF PLANS, PROGRAMS, PROJECTS, AND INVESTMENT PROPOSALS WITH THE OBJECT AND PURPOSE OF CONSERVATION OF PROTECTED AREAS

- DDP - urbanization plans of residential buildings in the area "Tepe kazal" in the village Dabovets, Lyubimets Municipality.
- DDP - urbanization plans of residential buildings in the area "Eshek tepe" in the village Dabovets, Lyubimets Municipality.
- Construction of residential buildings in the village Dabovets, Municipality Lyubimets, 5 pcs.
- Landfill disposal of municipal solid waste in the area of the town of Malko Tarnovo "- 2.
- Construction of hydro power plant "Kadievo" in the land of villages Kadievo and Tsapapitsa, Municipality Rodopi, District Plovdiv;
- Housing construction in the village Trilistnik, Municipality Maritsa, District Plovdiv;
- Sports and entertainment complex in the village Trilistnik, Municipality Maritsa, District Plovdiv;
- Building a steam-gas power plant with electric power of 130 MW on the site of TPP "Haskovo";
- Construction of a photovoltaic park with a total capacity of 100 MW in the Plot 000013 in the village Pashovo, Svilengrad municipality, Haskovo district.
- Construction of a photovoltaic plant plot 017004 in the village Dobroselets, Topolovgrad municipality, Haskovo district.
- Construction of a photovoltaic plant plot 012022 in the village Dobroselets, Topolovgrad municipality, Haskovo district.
- Building and HPP "Gyulatovo "the land of Stambolyski city, Plovdiv.
- Construction of HPP "Manole" in the village of Manole, Municipality Maritsa, District Plovdiv.
- Construction of HPP "Milev" in the village of Milev, Municipality Sadovo, Plovdiv
- Construction of a photovoltaic park in the village Pashova Municipality Svilengrad, District Haskovo.
- Construction of a photovoltaic installation in the village Alino, Municipality Samokov, District Sofia.
- Construction of a photovoltaic installation in the village Atolovo, Straldja Municipality,

Yambol District - 2.

- Building of the "Overgriyn Greenhouses" in the village Polikraishte, Municipality Gorna Oryahovitsa, Veliko Tarnovo.
- Construction of HPP "Taja G" and "Taja 2 "in the village of Taja, municipality Pavel banya, District Stara Zaogora .
- General development plan of the Municipality Maritsa, District Plovdiv

4. NOTICES AND INFORMATION ACCORDING TO ART. 10. (1) OF THE ORDINANCE FOR TERMS AND PROCEDURES FOR THE EVALUATION OF THE COMPATIBILITY OF PLANS, PROGRAMS, PROJECTS AND INVESTMENT PROPOSALS WITH THE OBJECT AND PURPOSE TO CONSERVE PROTECTED AREAS

- 45 completed ones

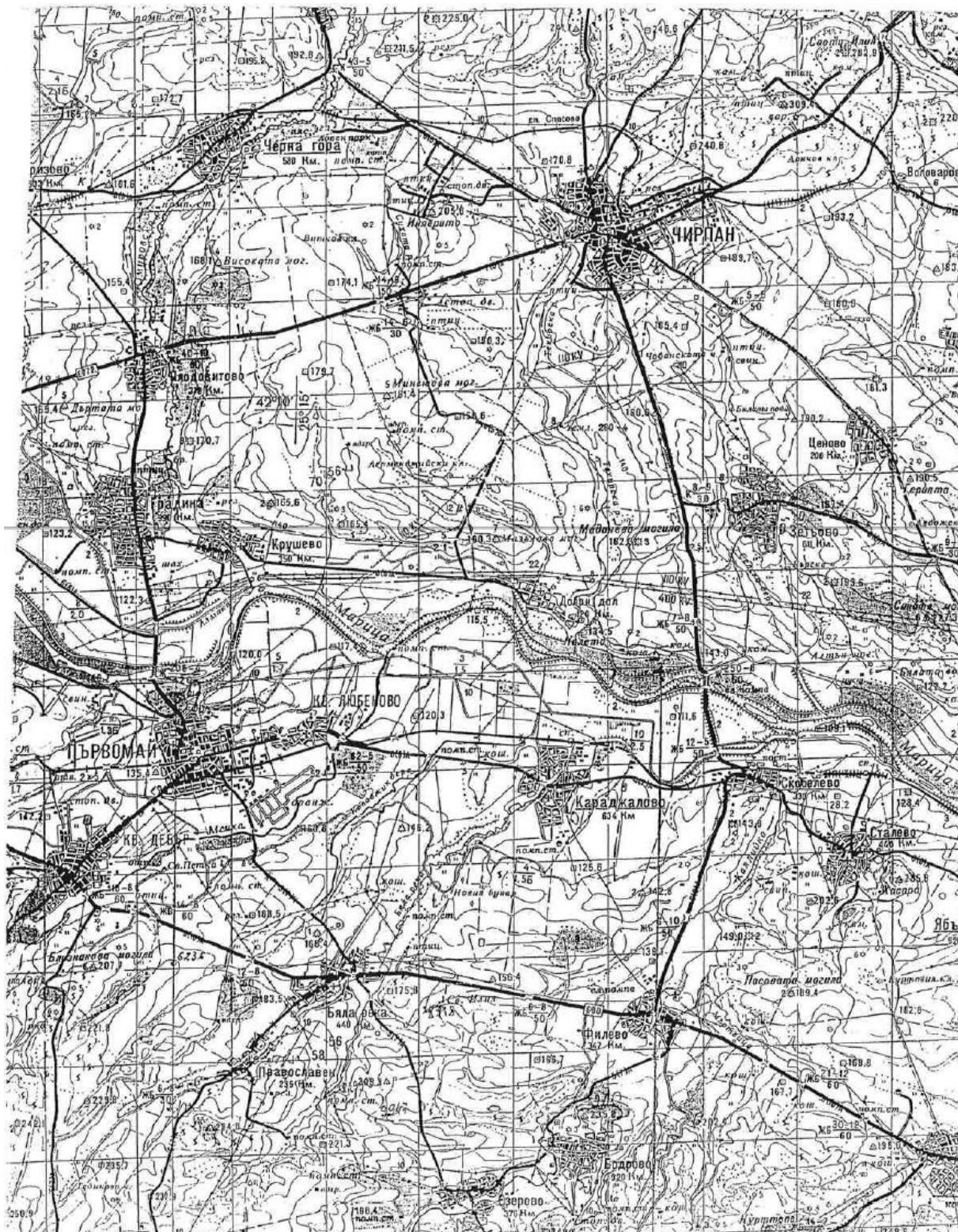
5. NOTICES AND INFORMATIONS FOR THE APPLICATION OF APPENDIX 2 FROM THE LAW OF ENVIRONMENTAL PROTECTION

- 165 completed ones

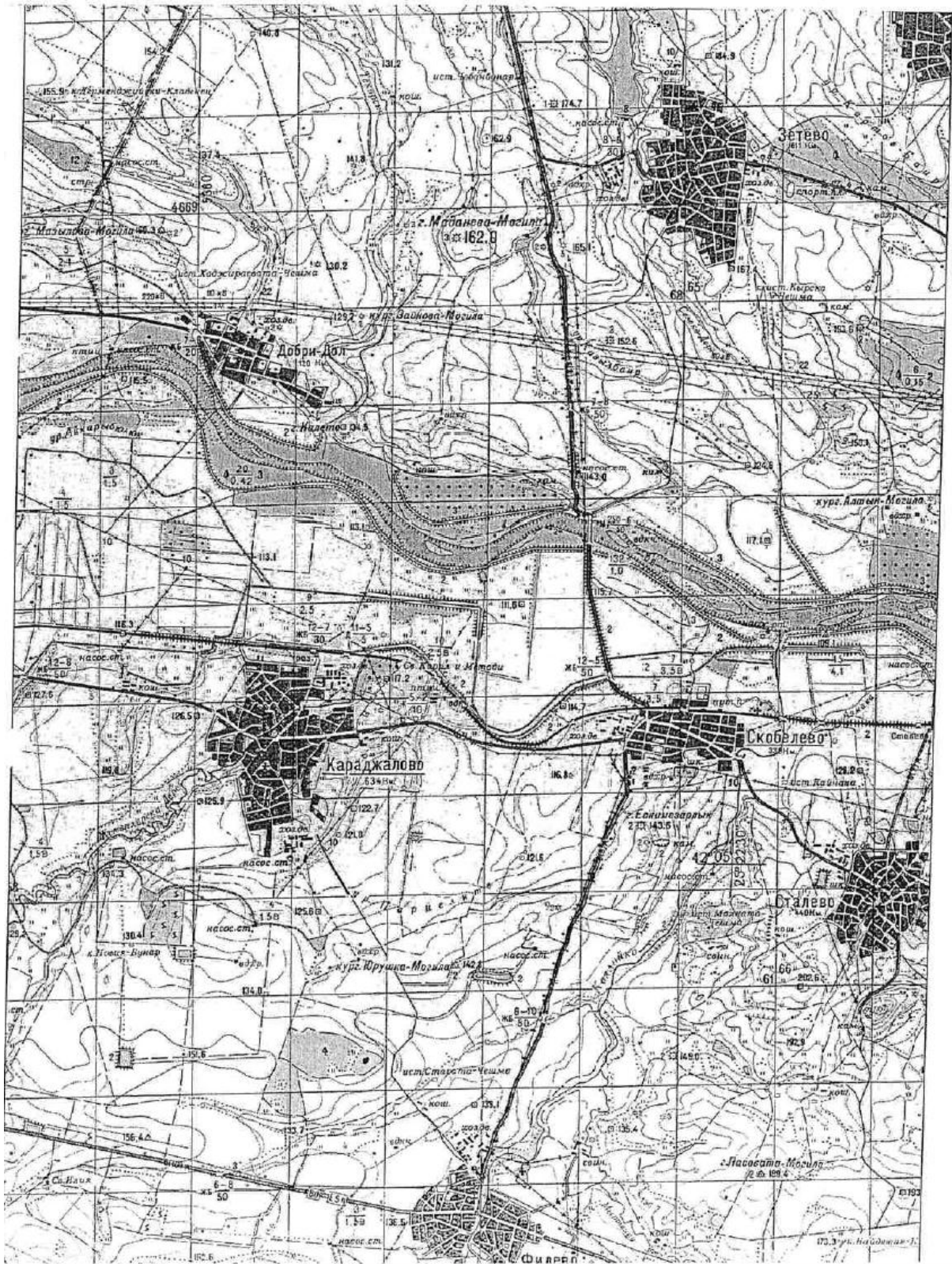
13. ATTACHMENTS

- ✓ Extract from topographic map in M 1: 100 000;
- ✓ Extract from topographic map in M 1: 50 000;
- ✓ Extract from topographic map in M 1: 25 000;
- ✓ Situational plan in scale 1:10 000;
- ✓ Plan for development of plot 000119;
- ✓ Situational placement of the modules in the "Photovoltaic park" s.Karadzhalovo;
- ✓ Picture material.

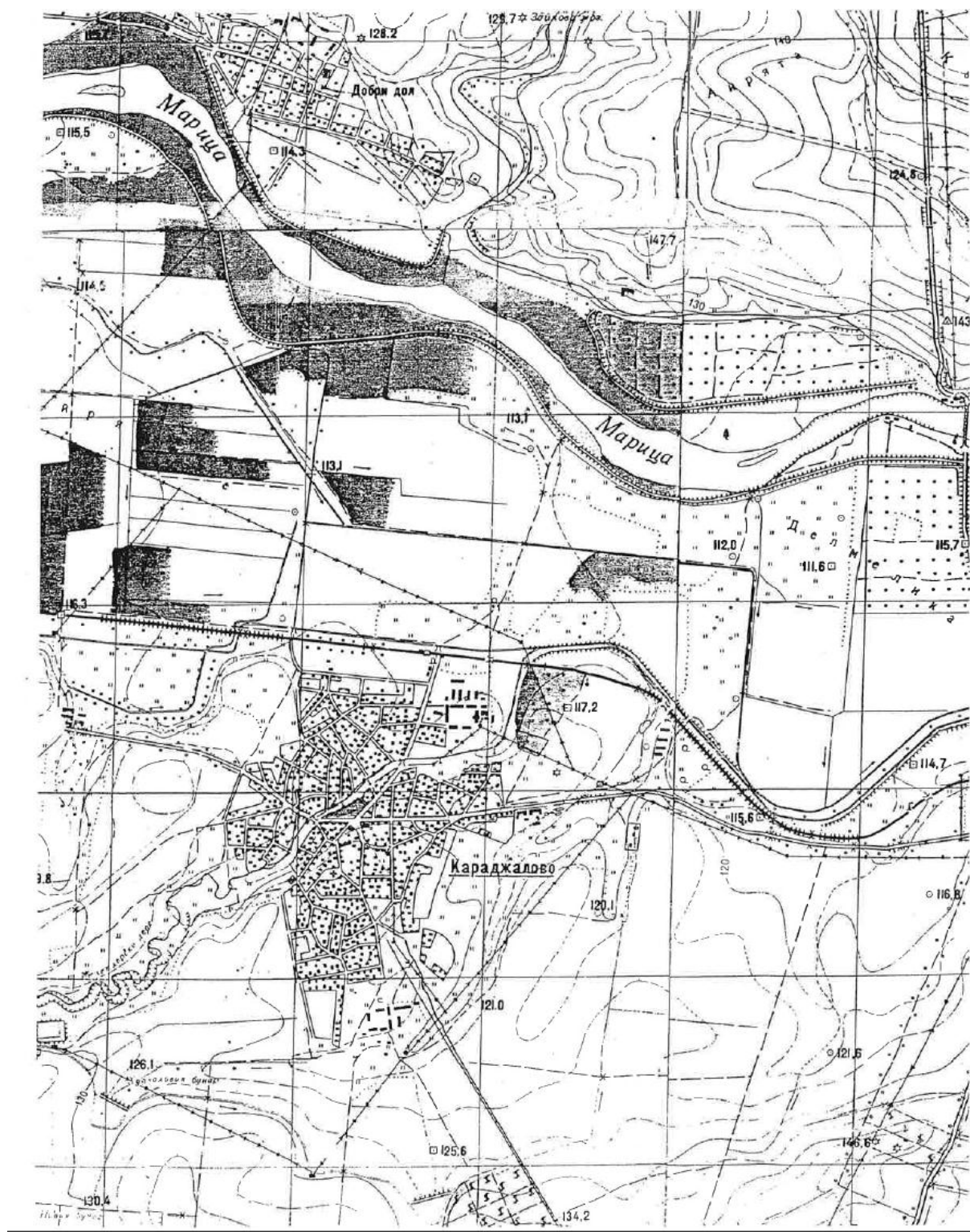
EXTRACT FROM TOPOGRAPHIC MAP IN SCALE 1: 100 000



EXTRACT FROM TOPOGRAPHIC MAP IN SCALE 1: 50 000



EXTRACT FROM TOPOGRAPHIC MAP IN SCALE 1: 25 000



SITUATIONAL PLAN IN SCALE 1:10 000;

СИТУАЦИОНЕН ПЛАН

situational plan

ОБЩИНА ПЛОВДИВ
УЛ. "СВ. СТЕФАН"
1000

Изготвил: 875
Дата: 18.12.2008 г.

тема 1970 г.

МЯРКА 1:10 000

землищна карта, ЕКАТЕ 36236, № 1
по плана на с. Зопора, Ж.О.Д.З.О.

област ПЛОВДИВ

имота е заложен на ИНТЕРСОНА 00 -

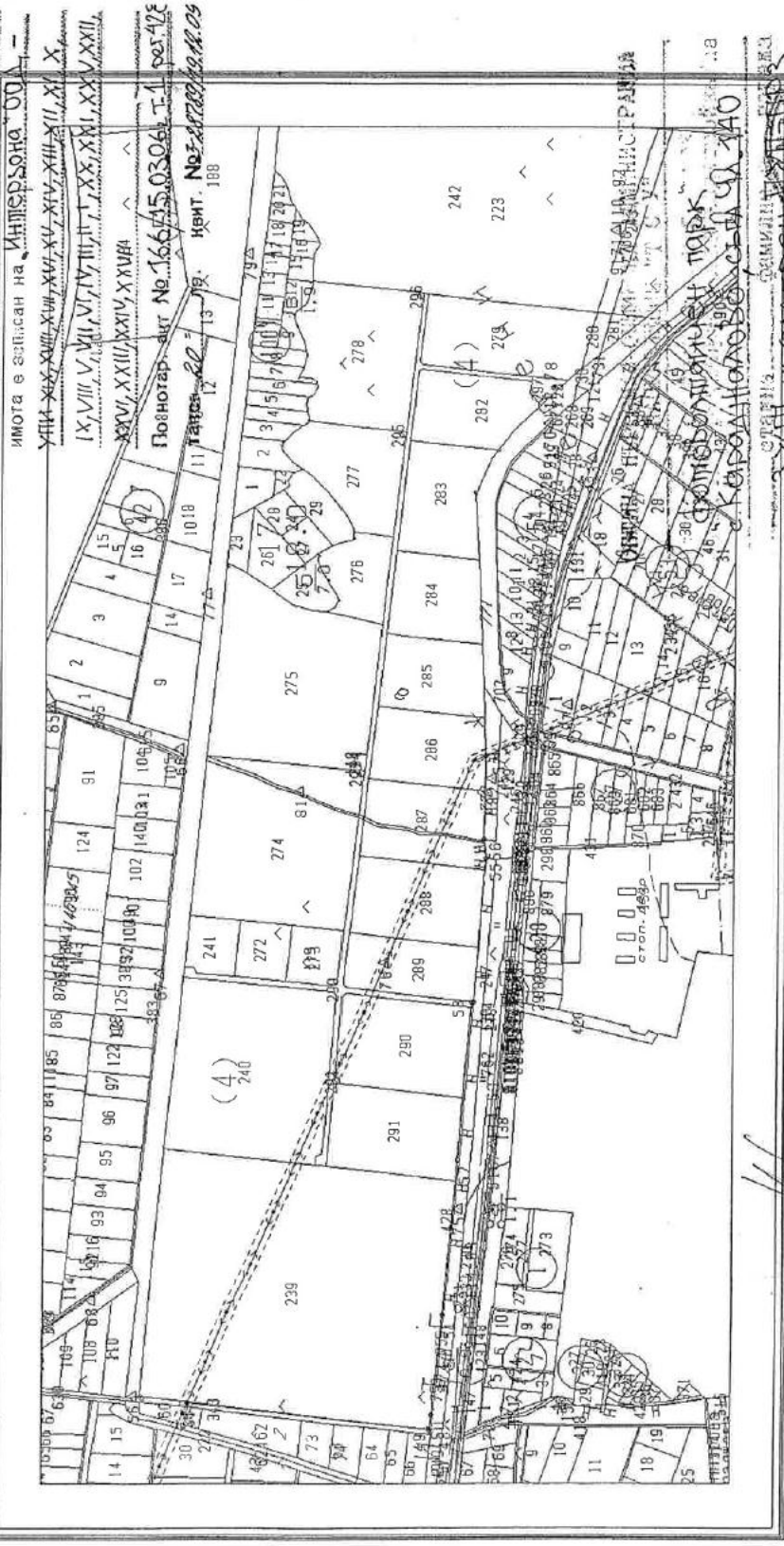
УЛ. "СВ. СТЕФАН" XII, XIV, XIII, XII, XI, X

IX, VIII, VII, VI, V, IV, III, II, I, XX, XXI, XXII, XXIII

XXIV, XXV, XXVI, XXVII, XXVIII

Повнотар акт № 166/15.03.06 г. 1 рел. 42

Кварт. № 20 = 13, 19, 188



Изготвил:

/инж. В. Иванов/

1:10 000

с. Зопора № 188

19.12.2008 г.

гр. ПЛОВДИВ



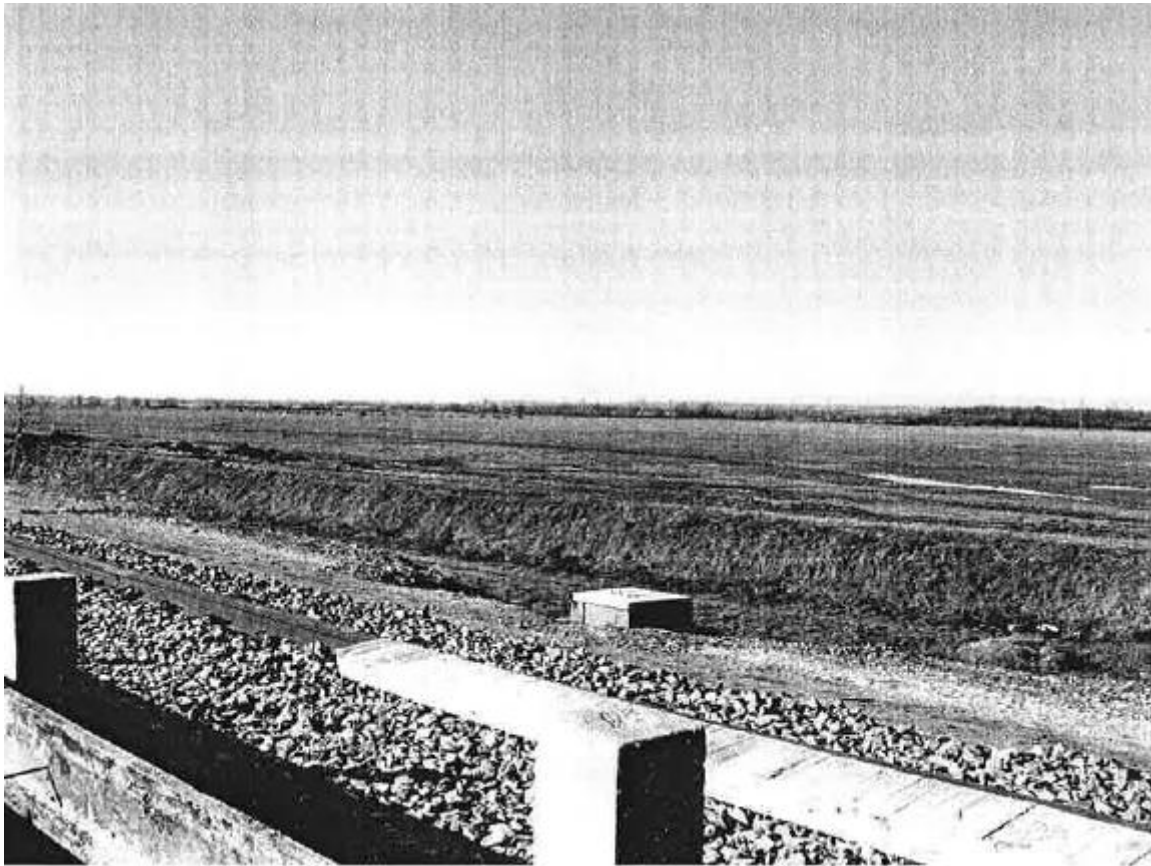
PICTURE MATERIAL



To the northwest the site border an oak forest, which is not influenced by the DDP



View to the site from south, from the rail track and the station under construction



View from south to northwest of the site



Drain channel along the southern border of the site