



Final Statement
of the Bulgarian Society for the Protection of Birds
on implementation of Saint Nikola Kavarna Windfarm
29 August 2008

This statement sets out the position of BSPB based on the project information disclosed in relation to the application by AES Geo Energy (AGE) for IFC and EBRD funding to support the project and updates the comments provided by BSPB in the preliminary position dated 17 July 2008.

Having in mind that:

- the development of renewable energy, including wind-energy, is a key element in the fight against climate change; at the same time that biodiversity rich ecosystems are equally important for reducing greenhouse gases (mitigation), and for buffering the impacts of already unavoidable climate change (adaptation); the development of renewable energy must therefore avoid any significant negative impact on biodiversity, including birds.
- birds can be very vulnerable to windfarms (depending on location, species and other circumstances), especially in areas where they concentrate during migration or winter, as well as during the breeding season. Most vulnerable are raptors and other soaring birds, geese and other waterfowl, but also smaller birds – like passerines.
- endangered and migratory birds need proper protection, thus Bulgaria has particular responsibility to ensure such protection, according to national legislation, EU Directives and international conventions including the CBD, Bonn and Bern Conventions.
- Kaliakra IBA¹ is of global importance for migratory birds along the Via Pontica migration route and of particular EU importance for migratory birds, wintering geese and number of breeding bird species (e.g. Long-legged Buzzard, Levant Sparrowhawk, Red-footed Falcon, Eagle Owl, Stone Curlew, Greater Short-toed Lark, Calandra Lark), that are threatened at EU level.
- The value of Kaliakra IBA for conservation of birds at an international level is recognized by the Bern Convention and European Commission which is currently taking action against Bulgaria to ensure proper protection of the whole IBA (see below).

Following:

¹ Important Bird Areas (IBAs) are identified by BirdLife International based on standard criteria and have been accepted by the ECJ as the scientific basis for the designation of SPAs.

- that Bulgarian Nature conservation legislation (in particular Environmental Law and Biodiversity Act) requires amongst other things compulsory Strategic Environmental Assessment (SEA) of National plans and programmes and for project level EIA to include equal assessment of all the alternatives and assessment of the cumulative environmental impacts of projects;
- the Recommendation No.130 (30 November 2007) of the Bern Convention concerning windfarm development in Kaliakra IBA²;
- the fact that on 5 June 2008 the European Commission opened an infringement procedure against Bulgaria because of insufficient designation of 6 sites as SPAs under the Bird Directive, and Kaliakra IBA is one of these 6 sites.

Summary of BSPB/BirdLife International position

BSPB and BirdLife International strongly support renewable energy development, including wind energy, as a key measure to address climate change. At the same time, the conservation of biodiversity and resilient ecosystems is not only a stand-alone priority of global and European policy, but also an essential element for mitigating and adapting to climate change. Therefore any significant damage from renewable energy development on biodiversity needs to be avoided. In this context BSPB and BirdLife International appreciate the additional due diligence work on birds which AGE has undertaken for this project to date. However, to avoid impacts on birds and other biodiversity the selection of locations for wind farms is key and **the additional information currently available does not change our opinion that the proposed project site is not suitable for a wind farm and therefore that EBRD and IFC should not provide funding and AGE should not go ahead with the project.** The project site is within Kaliakra IBA, which we believe should be entirely designated as an SPA under the EU Birds Directive and there is information available to suggest that the project is likely to have a significant negative impact on certain bird species (e.g. raptors, geese and storks). We do not believe that the original EIA or Supplementary Information Report addresses these issues adequately and hence, in our view the available information is still not sufficient to enable a sound decision to be taken with confidence that there will not be significant impacts on birds and the Natura 2000 network. Hence, we believe a precautionary approach must be taken to ensure compliance with the requirements of the EU Nature Directives (in particular, Article 4(4) of the Birds Directive and Articles 6(2) and 6(3) of the Habitats Directive). Key aspects in which we believe the current information is inadequate include – the lack of consideration of all relevant bird species (such as the globally threatened Red-Breasted Goose) and potential impact types (e.g. potential barrier and disturbance effects) and the approach taken to the collision risk monitoring. These and other issues are discussed in detail below. Further we believe that the project as now proposed will breach national legislation, as its parameters are different from the project which was subject to the EIA procedure and approved by RIEW Varna.

² Available from the Report (T-PVS (2007) 24) from the 27th meeting of the Bern Convention Standing Committee available from http://www.coe.int/t/dg4/cultureheritage/conventions/Bern/T-PVS/Meeting27_en.pdf

Therefore, before a decision is made on whether to fund and proceed with the project we strongly believe that further assessment work should be undertaken on potential impacts on birds, including cumulative impacts, and, subject to contract, we would be happy to provide our data on migrating birds and on wintering red-breasted geese to inform this further assessment.

Despite BSPB's strong belief that the project may have significant impacts and therefore our strong opposition to the project going ahead based on the current information, we are aware that AGE is of the opinion that it has all the necessary consents (and believes that these are valid) and wishes to implement the project at the earliest opportunity. Therefore in this context, we have also included in this position some issues which we would like to see implemented if AGE decides to go ahead with the project at this stage. However, we stress that we make these suggestions without prejudice to our position that the project should not go ahead until certain aspects have been investigated further and all relevant information is available, and that known areas of significant risk for birds must be avoided; and our suggestions should be seen within this context.

Looking at the documentation disclosed by AGE on the Saint Nikola Kavarna windfarm in relation to the application for IFC/EBRD funding, we are deeply concerned about the following aspects of the project:

- I. Legal aspects
- II. Quality and reliability of the ecological assessment and considerations
- III. Publicity and transparency of the consultation procedures

Our detailed comments on each of these issues are set out below.

I. Legal aspects

1. Although in 2004 the Minister of Environment decided that an SEA of the National Programme for wind energy had to be undertaken, this has not happened. The absence of such an SEA makes the consideration of suitable alternative locations for individual projects even more crucial e.g. to satisfy the requirements of the EU nature legislation on site protection. And we do not believe that this issue has been given sufficient weight in planning for the current project.
2. The parameters of the project as now proposed are **significantly different** from those on which the original EIA was elaborated and the consent given by RIEW Varna (see the table below and the attached consent in **Appendix 1**). All the main parameters of the project, except the number of turbines, have been changed, including the parameters that are crucial for assessing the impact on birds, e.g. height of the wind turbines. **According to the Bulgarian Environmental law, following the obligations set in art.19, par. 3 and art. 20 of the**

Regulation of EIA elaboration³, if the parameters of a project are changed (as is the case here) then the revised project is treated as new project and must be subject to a new EIA procedure.

Following this legal obligation, the project as now submitted by AGE to EBRD/IFC for funding which is subject to the current disclosure and consultation procedure, has not been subject to full EIA and consultation procedures at the national level. Hence, if the project is implemented as now proposed this will breach Bulgarian law and could be halted by the Bulgarian authorities.

Project parameters comparison:

Parameter	Consent given by RIEW Varna (as assessed in the EIA)	Investment project as proposed for financing to EBRD/IFC (not assessed in the original EIA)
Number of turbines	52	52
Type of the turbines	MM82	Vestas V90
Power (MW)	2 MW	3 MW
Hub height	50-100	105
Diameter of rotor blade	42	45
Total height of the turbine	max 141	150
Foundation (m2)	200	289
Excavation depth for foundation (m)	2.00	2.8

- On the basis of the description of the project in the Supplementary Information Document it appears that **there is also a violation of art. 82, par.3 of the Environmental Law**. According to this provision all the supplementary facilities, infrastructures and activities that are needed for project implementation also have to be considered during the EIA. However there are elements of the AGE project as now proposed which were not considered in the original EIA. The most significant of these are the overhead electricity power line⁴, widening of the local dirt roads to 5 m, and construction of buildings (see the table below).

³ This legislation sets out the rules about the content of consents on EIA. Under these it is obligatory to include a descriptions of the parameters of the project ie the consent is given for particular parameters and particular project. Thus the consent is only legally valid for a project with the specific parameters described in the consent.

⁴ It is mentioned in the consent given by RIEW Varna that the consent does not include the power line, which also should be (but was not) a subject of EIA

Project elements comparison:

Project elements	Consent given by RIEW Varna	Assessed in original EIA	Investment project as now proposed for financing to EBRD/IFC
Wind turbines	52	yes	52
Overhead electricity power line	110 kV	Not assessed in the original EIA or included in the consent, which specifies that the powerline should be subject to a separate EIA/consent procedure, but this has not happened	110 kV
Underground electricity power line	20 kV	yes	-
Substation and grid connections	Mentioned without parameters	?	6120 m2 build area, parking, metering building, power transformers
Temporary construction compounds	-	Not assessed.	16 separate construction compound, each: with 1000m2 build area and planned removal of top soil 1m depth. Operational for 12 months
Upgrade and widening of the agriculture dirt roads for the purposes of access of heavy machinery	-	Not assessed.	Widening by 5 meters (currently these are 3 meters wide and are soil tracks); it is not mentioned in the project but probably for the "upgrade" it will be necessary to put asphalt or other stable material; Just for comparison – the standard roads between the settlements are 8 meters

4. **There is a violation of art.14, par. 1.3 of the Bulgarian Regulation of EIA elaboration, which requires equal assessment of all the alternatives.** The approach to choosing the location for the project from possible alternatives as now described in the Supplementary Information Report was not previously mentioned during the EIA procedure. We have serious doubts about whether the process described in the relevant section of the Supplementary Information Report has really taken place according to rules set in the art.14, par. 1.3 of the Regulation of EIA elaboration. The original EIA report did not include any assessment of such alternatives nor were they ever discussed publicly. If Geopower (now AGE) had evaluated alternatives, these had to be studied and presented in EIA report equally, but this was not the case.

5. **Some of the parameters of the project as now proposed for funding are in contradiction with the consent given to Geopower Ltd. by RIEW Varna, in particular with points 5, 20 and 22 of the consent.** Under point 5 the consent states that the total height of the wind turbines must be **less than 150 m**, whereas the wind turbines now proposed are 150 m. Under the same point there is a requirement for the turbines to be set in lines if possible, which is not the case in the project as now proposed. By implementing the activities described in the project during construction, and taking into account the plans for widening significantly existing dirt roads it is not possible to comply with the requirement set under point 20 of the consent, which requires no trampling, pollution, disturbance of soils in neighbouring terrains.

Widening the roads and covering these will breach the obligation set out in point 22 to restore the disturbed areas after construction.

BSPB is still discussing these legal issues with its legal advisors.

II. Quality and reliability of the ecological assessment and considerations

We do not believe the ecological information/assessment provided in the original EIA and Supplementary Information Report are sufficient to support a conclusion that the project will not have a significant effect. Therefore we consider that further information/assessment is needed for an informed decision to be made. In the absence of such information/assessment it is our view that a precautionary approach must be taken. Our specific concerns on the ecological assessment are set out in detail below.

1. Provision of incorrect information on Kaliakra IBA and its classification as an SPA.

- i. We have evidence that there are scientific grounds to set the boundaries of Kaliakra IBA as currently described:
 - Kaliakra cape was designated as IBA for the first time in 1989⁵.
 - In general the value of the area was recognized by the National Biological Diversity Strategy (1994). (Map is attached in **Appendix 2**).
 - Special study on wintering geese in Coastal Dobrudzha was carried out in the period 1995-1999, and the results were published in 2000. The area of the investment project was identified as one of the key feeding areas for the Red-breasted Goose in close vicinity to their most important wintering grounds worldwide (Shabla and Durankulak Lakes). (See map in **Appendix 24**).
 - The area was recognized as one of the globally important sites for raptor migration, in 2000. (See article in **Appendix 3**).
 - Special surveys on autumn migration conducted by BSPB along the Black Sea coast – 2003-2006 (including the area of Kaliakra IBA 2004 – 2006) in the framework of work supporting establishment of the Bulgarian Natura 2000 network (one of the reports has been published and was already used by AGE in the assessment⁶, and one mid-term report provided to MoEW).
 - The breeding bird atlas in Bulgaria (2007) provides data on breeding birds in the area based on a national mapping survey for the period 1995-2005⁷ (**Appendix 4**)
 - Mid-winter counts have been carried out from 1988 to date. Results for the period 1997 – 2001 are published⁸ (**Appendix 5**). Recently (since 2004) there is regular monitoring of the Red-breasted Goose in coastal Dobrudzha.
 - On the basis of the information above, the habitats used by the different threatened and migratory species were mapped and used for IBA boundary setting. (maps are attached in **Appendices 8,9, 10, 11, 12, 13**)
- ii. We have evidence that the current IBA boundaries have been in the public domain since January 2005:

⁵ Described in "Important Bird Areas in Europe", Grimmet and Jones, 1989

⁶ Data in this from this BSPB report were used in the assessment in the Supplementary Information Document

⁷ Atlas of Breeding Birds in Bulgaria. BSPB Conservation series 10. P.Iankov, Published in 2007.

⁸ Results from the Mid-winter Count of waterfowl in Bulgaria for the Period 1997 – 2001. 2001, Kostadinova I. and S. Dereliev.

- The current IBA boundaries were **officially published for the first time in January 2005** – in the IBA newsletter⁹ (the publication is attached in **Appendix 6**);
 - In the beginning of February 2005 the map of the new proposed IBA network and potential SPAs was sent to all the governmental institutions (including their regional structures), municipalities and district administrations.
 - The boundaries of the proposed Kaliakra SPA were subject to a discussion procedure organized for all the ornithologists in Bulgaria in March 2005. No objections or arguments for different boundaries were provided during these discussions.
 - In the beginning of December 2005, BSPB provided to the Ministry of Environment a full report on the proposed SPAs (including Kaliakra IBA), including description, ornithological arguments, detailed map and overall analysis on the process of identification (methodology, field work, expert discussion) of the potential SPAs and the representativeness and coherency of the proposed SPA network. The report was approved by MoEW without any remarks and then the procedure for completion of the documentation took place.
 - The **first official announcement by Geopower about their investment project was received in BSPB in mid-January 2006** (the letter is attached in Appendix 7) and BSPB provided its statement during the public consultation process.
 - The documentation on the proposed SPAs was officially submitted to the Ministry of Environment by BSPB in mid-July 2006.
- iii. The original EIA and Supplementary Information Report do not properly reflect the importance of Kaliakra for breeding, migrating and wintering birds:

Overview of bird interest

- Kaliakra IBA is located in north-eastern Bulgaria and bears the name of the cape within its limits. It covers the easternmost part of the Dobrudzha plateau. Kaliakra IBA is the only site in Bulgaria, which retains the remaining Eastern Dobrudzha steppe, as well as the biggest cliffs along the Bulgarian Black Sea Coast. The coast is fringed with vertical cliffs up to 100 m high, with characteristic caves and niches. The vegetation is characterized mainly by the prevailing steppe associations and sparse trees and shrubs. It develops on shallow soils and almost exposed limestone rock. The area also includes neighbouring arable land as key habitat for migratory, wintering and breeding species within the IBA.
- Kaliakra IBA supports 310 bird species, 71 of which are listed in the Red Data Book for Bulgaria (in press). Of the birds occurring at Kaliakra 106 species are of European conservation concern (SPEC) (BirdLife International, 2004¹⁰), 17 of them being listed in category SPEC 1¹¹ as globally threatened, 21 in SPEC 2 and 68 in SPEC 3 as species threatened in Europe. The IBA provides key habitats for 100 bird species included in

⁹ The newsletter is distributed to all decision-makers on central and regional level (MoEW, Ministry of Agriculture and Forestry, Municipalities, etc.)

¹⁰ "Birds in Europe. Population estimates, trends and conservation status", 2004

¹¹ **SPEC** - Species of European Conservation Concern, defined on a base of criteria according "Birds in Europe: Their Conservation Status" (BirdLife International, 2004). SPEC are divided into 4 categories: **SPEC1**: European species of global conservation concern, i.e. classified as Critically Endangered, Endangered, Vulnerable, Near Threatened or Data Deficient under the IUCN Red List Criteria at global level (BirdLife International, 2004; IUCN 2004); **SPEC2**: Species whose global populations are concentrated in Europe, and which have unfavourable conservation status in Europe; **SPEC3**: Species whose global populations are not concentrated in Europe, but which have unfavourable conservation status in Europe; **E**: Species whose global populations are concentrated in Europe, but which have favourable conservation status in Europe. Species are treated as concentrated in Europe when more than 50% of their breeding or wintering population or range is in Europe, according to range maps in Cramp (1977-1994) or del Hoyo *et al.* (1992 – 2003), or to global population estimates where available (mostly for waterbirds, in Wetlands International, 2002).

Annex 2 of the Biodiversity Act, which need special conservation measures, of which 95 are also listed in Annex I of the Birds Directive.

Breeding birds

- Kaliakra IBA holds the last big and comparatively well preserved steppe habitat in Dobrudzha. It is inhabited by typical steppe species, which are quite numerous – Stone Curlew *Burhinus oedicephalus*, Greater Short-toed Lark *Calandrella brachydactyla* and Calandra Lark *Miliaria calandra*, 4 Wheatear species (including Pied Wheatear *Oenanthe pleschanka*), Rose-colored Starling *Sturnus roseus* (**Appendix 8**). **These species also breed in smaller numbers and feed in the agriculture land within the IBA.** Almost the whole national population of the Pied Wheatear *Oenanthe pleschanka* is concentrated in the IBA. The Calandra Lark, the Greater Short-toed Lark and the Stone Curlew are present in the IBA with the biggest populations in the country.
- The open biotope (both steppe and arable agriculture land) supports a number of threatened birds of prey, like the Long-legged Buzzard *Buteo rufinus*, the Levant Sparrowhawk *Accipiter brevipes*, the Red Footed Falcon *Falco vespertinus*, the Peregrine Falcon *Falco peregrinus*, and the Eagle Owl *Bubo bubo* (see **Appendix 9 and 10**).
- In the marine area of Kaliakra are the biggest flocks of the Mediterranean Shearwater *Puffinus yelkouan* in the country.

Migrating birds

- Kaliakra IBA is of exceptional importance during migration and is a typical bottleneck site, as it is located on the *Via Pontica* – the second biggest migration flyway in Europe (**Appendix 11**). Every autumn considerable numbers of soaring birds – up to 199,000 storks, pelicans and cranes and more than 10,000 birds of prey, including globally threatened species like the Pallid Harrier *Circus macrourus*, the Red-footed Falcon *Falco vespertinus*, the Saker Falcon *Falco cherrug* and the Imperial Eagle *Aquila heliaca* – pass over Kaliakra.
- Cape Kaliakra is the point where Bulgaria's land territory reaches farthest into the sea. The migratory corridor in this part of Dobrudzha is about 80 km wide, with certain places within this corridor having a greater intensity of migration. In this particular area – Kaliakra IBA (because of the geography) the intensive corridor is about 15 km wide from the coast east of St Nikola village inland in direction of Rakovsli village.
- Due to the specific geography of the coastline (direction east – west) and the predominant NW wind migratory soaring birds stay in the area of Kaliakra IBA longer than usual migrants, trying to avoid the sea and to go back again above the mainland, and soaring to get higher. More than 60% of the migratory birds fly through the area at a height of less than 150 m. When the wind is very strong storks

and raptors (mainly harriers) land on the fields between Kavarna and Cape Kaliakra. Only 9% of the birds pass the Kaliakra area flying higher than 500 m.

- The whole territory of Kaliakra IBA between Kavarna and Tyulenovo, including the AGE project site is used as a stopover site for migratory storks. Regularly flocks of up to 5,000 overnight in this area south of Hadzhi Dimitar Village (**Appendix 12**).
- As they confront the sea on their way south, the numerous flocks of songbirds, Quail *Coturnix coturnix* and the globally threatened Corncrake *Crex crex* stop here to roost and feed. They migrate mainly during the night. More than 50,000 are registered only in the light part of the days during the autumn migration. Bearing in mind that song birds are night migrants it is expected that hundreds of thousands of birds fly through the IBA during migration.

Wintering birds

Significant numbers of waterbirds overwinter in the area of Kaliakra, mainly geese, which stay there between December and March. They overnight in the sea and every day they fly over Kaliakra in order to feed in the inland arable lands. Often they land to feed in the arable land in the limits of the proposed SPA, mainly in the field between the Hadzhi Dimitar village and Balgarevo village (where the AGE project is situated), as well as between Saint Nikola village and Kamen Bryag village (**Appendix 13**). Up to 50 000 individuals of the globally threatened Red-breasted goose also regularly overwinter in the region.

In the view of BSPB the arable land within Kaliakra IBA is very significant for birds and its exclusion from the SPA amounts to a breach of the Birds Directive by Bulgaria. **Appendix 14** provides detailed information about the effect of exclusion of the arable land from the SPA.

As the entire IBA qualifies for designation as an SPA, but has not been so designated, the provisions of Article 4(4) of the Birds Directive apply to the parts of the IBA not designated as SPA (see the ECJ judgements on SPA designation including C-374/98, Commission v. France – ‘Basses Corbieres’ and C-96/98, Commission v. France – ‘Poitevin Marsh’). In our view, the construction of the project as planned will amount to a breach of Bulgaria’s obligations to avoid pollution or deterioration of habitats or any disturbances affecting the birds.

2. **Significant weaknesses in assessment of impacts on birds:** the assessment is incomplete (significant issues have not been addressed), there are problems with how the bird data references have been used and interpreted, concerns about the bird survey methodologies, concerns about assumptions made in the collision risk modelling, gaps in the cumulative effects assessment and an explicit appropriate assessment under Article 6(3) Habitats Directive is missing. Each of these weaknesses is discussed in more detail below.

- i. *Incompleteness of the assessment* – lack of assessment of bird impacts other than collision (e.g. potential disturbance, barrier effect, etc); lack of consideration of impacts on roosting storks and Red-Breasted Goose in the assessment.

In order for the necessary information to be available to enable a proper understanding of the potential impacts of the project on birds, BSPB think that further assessment is needed on the following :

- impacts on wintering geese;
- impacts on roosting storks
- impacts on breeding raptors, e.g. Red-footed Falcon, Long-legged Buzzard and Eagle Owl (active during the night)
- impacts on night migrants, e.g. Corncrake (BSPB has not made special surveys on night migrants, but from the information already available it is clear that these could be an issue and therefore that such surveys are necessary before an informed decision can be taken)
- assessment of the potential disturbance and barrier effect to all the species mentioned above
- assessment of habitat loss (both direct and indirect) for all the species mentioned above
- assessment of impacts on breeding, migrating and wintering birds from disturbance by noise and movement of the turbines, etc.
- refinement of the collision risk modelling to take account of weather conditions, geographical topography and the behaviour of birds. AGE will have the wind data, but to date this has not been used in the collision risk analysis.

The quality of the EIA report, and the reports elaborated by BAS, which are used as the basis for all the assessment of impacts on birds in the original EIA and Supplementary Information Report, have been strongly criticized by Prof. Kuijken¹² - an independent expert of the Bern Convention. In summary he stated “Our impression is that these reports are scientifically quite poorly worked out. The conclusions based upon the presented information (often rather anecdotic data!) do not always look justified, but rather biased in favour of the investors, by ignoring or minimising risks towards biodiversity”. Extracts of the appraisal carried out for Bern by Prof. Kuijken are given in **Appendix 15**.

¹² Full assessment could be found in the T-PVS(2007)27 “On-the-spot appraisal Wind farms in Balchik and Kaliakra – Via Pontica (Bulgaria). Report of the on-the-spot appraisal (20-22 June 2007)”, Mr Eckhart Kuijken, Research Institute for Nature and Forest, Brussels (Belgium). Please note that all the texts relevant to steppe habitats in this report attack another investment project of Geopower Ltd, which is not connected with the current project.

- ii. *using and interpreting the available information*; there are data available that are not taken into account, and BSPB data has not been correctly interpreted.
- **In table 4.4 in the Supplementary Information Report** the interpretation of the BSPB data is not correct. The observation points in Balchik and Rogachevo are not in the area of the investment project. The Balchik observation point is situated about 17 km WSW from the Balgarevo observation point and we can not confirm that the birds passing there also pass Kaliakra IBA. Probably some of them pass the most western part of the IBA, but certainly the data about flight heights at Balchik are not at all representative for Kavarna. Rogachevo is further South-West and only the birds that shortcut the sea from the cape Kaliakra to the land south west pass east from Rogachevo, so again the data for the flight heights here can not be used as representative for Kaliakra, also because the one and the same birds had different flight heights in Rogachevo and Kaliakra and in the analysis of the published data from the observation point in Balgarevo their height of flight was already taken as it is in Kaliakra. Thus there is no logic or any scientific sense to use a mean of the data between the three observation points standing very far one from another. As this initial assumption is flawed the analysis carried out on the basis of this mean figure is also flawed and does not accurately reflect the real situation. The correct use of the data from the survey from 2004 on flight height is to use the data only at the Balgarevo observation point because this is the only representative data for Kaliakra IBA (and the area of AGE project) from the migration study in 2004. In principle the data are comparable only in one and the same area through the years (e.g 2004, 2005, 2006...) where also the weather conditions have to be taken into account.
- **In chapter 4.2.6** of the Supplementary Information Report there is a conclusion that for the endangered species (as categorized by IUCN) the risk is very low because they are very rare and the prediction is that these birds will collide with wind turbines only once in 10 years. Therefore it is concluded that damage to these species will be low. Logically the endangered species are less numerous, however they migrate through the area every year and so we have severe doubts about how the collision risk for these species is estimated as being so low. For example Hen Harrier and the Imperial Eagle are recorded in much smaller numbers and less than 50 migrate through the area per migration season (and no elsewhere along the migration corridor are they more numerous). If a single bird of one of these endangered species is killed by a wind turbine the damage to the species in general could be significant. Further the radar system will not work for endangered raptors (they never concentrate in groups of 1000 at one place!). Their “flocks” are instead a “flow of individually flying birds at a distance each to other” and never reach a figure of 1000 birds in a single “flock”. For instance up to 734 Red-footed Falcons (globally threatened species) have been recorded as passing over the Kaliakra IBA per migration season (and definitely not in one flock), which is 21% of the known flyway population of this species along the Bulgarian Black Sea coast.

BSPB have detailed data which could be used for analysis and modelling.

- The data on **migratory birds** collected during the BSPB surveys 2003-2006 contain data on each bird flying over the studied area as follows: date, hour, bird species, number of birds of the species detected flying at once (in a flock), specifications on the age (if possible to determine), distance from the observation point, height of the flight, direction of the flight, behaviour (is it fly directly, or soar, or lund (time of landing and taking off, and the place), or hunt), the weather conditions (wind direction and relative velocity, clouds, rains, storms, temperature, visibility). Roosting areas are mapped on GIS.
- Data on **wintering birds** includes the date and time of observation, bird species, number of individuals counted, exact place where birds are observed, behaviour (flying, feeding, roosting), weather conditions. For the geese counted at roosting places the data also contains the direction of flight to the feeding areas.
- Data on **breeding birds** included in the Atlas of Breeding Birds (see **Appendix 4**) which contains the same information as for wintering birds (species, time, behaviour, place of observation).

The BSPB unpublished data on migrating and wintering birds are available and can be provided for the needs of assessments under certain conditions, including financial aspects and also the right of use and citation of the data.

iii. methodology used for the surveys

- **The data provided in table 4.3 of the Supplementary Information Report are not comparable, because they were collected using substantially different methodologies.** In general we do not accept the data provided by BAS, because they did not use the standard methodology on observation of migratory birds, but a significantly modified one. It is proven that the whole light part of the day is important for migration equally and therefore it is vital that the counts went on all day. For the bird survey in 2004 BAS did not count migratory birds at the predefined observation point during all the light part of the day – therefore they did not count periods of the day known to be key for migration. Specifically, they did not count migratory birds in the morning part of the day (before 11 o'clock) when migrants usually take off and fly low above the land (in reality this happens between 8 and 10'clock in the morning, depending on weather conditions). Also they did not count migratory birds after 16 o'clock, but it is confirmed that birds fly lower and land for roosting after 17 o'clock. The daily dynamic of migration also shows that in the middle of the day the intensity is lower, especially if there is no wind (the period when the wind changes its direction). Also they recorded only the birds which fly above the observation point itself. If the birds fly for example 100 meters to one side

they were observed but not recorded. Use of data limited to birds passing only over the observation point may possibly be justified if a developer has collected extensive data at a location e.g. under all weather conditions, but cannot be justified where surveys have been relatively restricted (as is the case here) as it may lead to a serious underestimate of potential impacts. Indeed as is visible from the data in the table, use of this methodology by BAS leads to a significant underestimation of the number of passing birds. Only 555 white storks were recorded as passing the area studied by BAS (at two observation points – one at the coastline east from the AGE project and one – in the arable land within the AGE project area according to BAS's data). Whereas for the same year BSPB recorded about 23000 white storks passing through this particular area (Balgarevo)¹³. The project area of AGE is situated just 3km north/northeast from the BSPB Balgarevo observation point. This means that the BSPB observers detect all the birds which just passed the AGE project area in the direction falling within the effective¹⁴ visibility of our observation point (7 km to the west and 7 km to the east). Therefore, the BSPB data from 2004 gives the most representative data for most of the area of Kaliakra IBA. The BSPB study in 2006 confirmed that there is also an intensive migration corridor in the north-west part of the IBA, where the AGE project area is. This corridor lies 15 km inland from the geographical coastline in this particular section of the Black Sea coast and almost directly east from the line of the predominant coastline direction of the Bulgarian Black Sea Coast (**Appendix 16**).

- Overall we believe that the approach taken to data collection (and subsequent analysis) is particularly problematic. Observations must be representative to be valid and should reflect diurnal variation of levels of activity, behaviour and flight height. Observations need to cover the wind farm area and a buffer to allow for the fact that the migration route will not be a static entity but placement will vary with weather conditions and year. As the observations did not satisfy these key requirements, we believe there are fundamental problems with the data and subsequent analysis, and therefore serious concerns about the predicted impacts on migrating birds.

iv. *the collision modelling is flawed (concerns about the avoidance factor, incorrect assumptions for input data, etc.)*

- **In chapter 4.2.3 of the Supplementary Information Report:**

The assumption is made that migrants are only flying over the area rather than using its ecological resources. According to BSPB's surveys **this assumption is wrong**

¹³ The range of visibility (possibility to detect migratory birds) of the Balgarevo observation point is from Kavarna town (to the west) to Kaliakra cape (to the east).

¹⁴ Effective visibility means the distance BSPB observers were able to detect /identify migratory birds and flocks. For the particular area of Balgarevo point the effective visibility was 7 km for white stork flocks and 3.5 km for single birds (raptors).

because especially **raptors** stay in the area for hunting. Observations during our migration studies showed that some raptors stay in the area up to 30 – 60 minutes or more hunting, and harriers even land on the ground for long periods of time – up to 2-3 hours if severe weather conditions (strong wind) occur¹⁵. This behaviour is not common practice for all the migrants but it appears regularly with a small number of birds during migration. Also **white storks** use the region as a roosting site (Appendix 16). Their behaviour during taking off and landing is very specific – they fly over the roosting area and around going further and back. In these circumstances the birds are moving slowly and their manoeuvrability will be reduced before they encounter rising winds to gain lift, and so may be at high risk of collision if departure from roost brings them close to turbines (see eg Barrios & Rodriguez, 2004 – **Appendix 25**). These factors need to be taken into account in the modelling and will probably have a significant effect on the results. The behaviour of migrants in Kaliakra IBA was recorded in detail during BSPB's survey and the data are available (see above) for use in revised modelling. Storks landing in the area, as well as hunting raptors are documented in a short film. Assessment of stopover is an essential component to determine the risk posed by the proposed development. There needs to be a distinction made between regular stopover and stopover in adverse weather conditions. In the latter case prediction of the frequency of such weather coinciding with peak migration is important.

The Red-breasted Goose is not mentioned as one of the endangered species occurring in the area and potential impacts on wintering geese are not mentioned at all in the original EIA or Supplementary Information Report. This failure to consider wintering geese in general and Red-breasted Goose in particular in the assessments, including the collision risk analysis is a **major failure** as these species have their regular feeding areas in Kaliakra IBA and specifically in the AGE project site.

A detailed study on feeding areas of geese in Coastal Dobrudzha took place during the period 1995-1999. The results of the survey were published in 2000 and are available in the Sofia University – Faculty in Biology. The publication includes detailed mapping of feeding areas of geese with data on geese species and the number of individuals feeding in each of the identified plots. The survey clearly shows that there are regular feeding areas for geese, including numerous flocks of Red-breasted Goose, **within** the AGE project area. Since the beginning of 2004 to date all the area of Coastal Dobrudzha between Durankulak to the north and Balchik to the south (including Kaliakra IBA) is part of the regular monitoring of the Red-Breasted Goose under the supervision of WWT (Wildfowl & Wetlands Trust). The data are not published but are available from BSPB. According to this monitoring the western part of the AGE's windfarm project area is a permanent feeding ground of geese, including Red-breasted Goose (**Appendix 18**).

¹⁵ The frequency of the days with strong wind within the IBA detected during BSPB's survey (2004-2006) differs and depends greatly on the exact locality – between 20 (more inland) to 30 (closer to the coast) days out of 80 days of survey period (ie between 20-38% of all the days observed)

Concerning the statement of BSPB during the meeting with the representatives of EBRD/IFC in Sofia that the wind turbines close to Shabla town are not dangerous for feeding geese we would like to clarify some issues. There are 14 turbines in total in 2 different locations: 4 turbines situated 10 km west from Shabla lake and about 3 km west of the closest feeding area for geese and 10 wind turbines 2 km south-west of the town of Shabla (5 km of the lake and at least 1 km of the closest feeding area). At neither location are there geese foraging. The geese feeding west of Shabla lake do not reach the wind turbines in question. The geese flying over to inland feeding areas fly far above the turbines. Further we should mention that during the design of this projects the investor followed all the recommendations of BSPB given during the consultation period thus all the risky places were avoided. Having in mind that Coastal Dobrudzha is of **global scale importance** for this globally threatened species (IUCN category “endangered”) – the lakes as roosting places and the **arable land** – as feeding grounds, IFC and EBRD are urged to consider the issue of impacts on geese very seriously and avoid supporting any activities which will disturb the geese and their habitats. Indeed because of potential impacts on this globally threatened bird species we would question whether the project as proposed fulfils the requirements set out in IFC Performance Standard 6 – Biodiversity Conservation and Sustainable Natural Resource Management or the more general requirements on biodiversity in the currently applicable 2003 version of the EBRD Environmental Policy (e.g. paragraph 6).

While the collision of geese with windfarms has not been well studied so far (hence the necessity to apply the precautionary principle), there are numerous studies and clear evidence that there is a strong impact of displacement of ducks and geese from their feeding areas due to windfarms. Displacement studied on wind turbines shorter than those proposed by AGE is about 600 m around each turbine for geese and 800 m –for ducks. Hence displacement causes indirect habitat loss for these species.

Bearing in mind that the planned turbines of the AGE project are much bigger and that the displacement effect while species specific also depends on the height of turbines, according to the worst scenario the potential displacement in the case of the AGE windfarm should be calculated on the basis of a 800 m displacement effect. Applying this approach to the proposed project the potential effect of the wind turbines on the feeding areas of geese in Kaliakra IBA is very clear and indicates that almost all the feeding areas for Red-breasted geese within the IBA will be lost due to displacement (**Appendix 19**).

In addition the proposed AGE windfarm is situated just 3.8 km north-west from the main roosting place of geese within Kaliakra IBA. Birds usually fly in the NW direction to their feeding areas, which here will involve a flight path through the INOS1 windfarm and then through AGE windfarm. As a result in this particular case the birds may already be impacted from passing through INOS1 windfarm. Hence, there is a clear cumulative impact on birds related to both the barrier effect and also collision risk, because the level of avoidance could be changed.

Given the species involved, the behaviour of the birds at the particular location and potential for cumulative effects from other wind farm projects in the close vicinity (as discussed above) we have serious doubts about whether the 95% avoidance figure used for calculation of the collision risk is the correct one in this particular case. Scottish Natural Heritage (SNH) themselves state that the model does not provide absolute values but a broad brush indication of possible collision figures. There is considerable debate about the 95% figure and we do not believe that it is justified to use this for all species – there is insufficient information about the avoidance rates for different species. Most importantly, even a small variation in avoidance rate can make a sizeable difference in the predicted collision rate. And, of course, even a small increase in mortality may be significant for species that are slow to mature and have low productivity; often larger species. In this particular case it is clear that the modelling has not taken into account differences in the ecology and behaviour of relevant bird species and hence we believe the modelling is flawed.

- v. *the cumulative impact assessment is inadequate as it only takes into account some of the existing relevant information.*

The cumulative and in-combination impact assessment is particularly relevant to raptors (notably red-footed falcon), storks & red-breasted geese, and needs to be considered for all other development types, not just wind farms.

For example, there are 186 turbines in the Kaliakra IBA according to official procedures, not 142 as presented in the report (Appendix 20). 10 of these 186 turbines were already operational before the INOS 1 windfarm was constructed in early 2008. Some of the approved (but not yet constructed) wind turbines are already situated in the project area of the proposed AGE windfarm. In addition outside the IBA further inland there are already operational wind turbines and consents have been given for at least 200 turbines (small scale projects). In the region of Coastal Dobrudzha generally more than 617 wind turbines are planned (Appendix 26).

In addition to windfarm development there are about 330 investment projects related to house/hotel building, infrastructure, etc. in the area of Kaliakra IBA. Most of them are concentrated in the area of the approved SPA and are likely to cause significant impacts on birds, including on white stork roosting areas.

At present the part of Kaliakra IBA in the location of the AGE project (the part between Kavarna and Balgarevo) is the only part of coastal Dobrudzha which does not provide a windfarm barrier for migrants, and this is only because the planned projects are not yet realized (EIA procedure not completed or construction work not yet started). Hence, we believe that there could be **significant cumulative impacts** on all the migratory, wintering and breeding birds due the vast windfarm development in the area, including the AGE windfarm, which if constructed is will be the largest wind farm in North-east Bulgaria. The reasoning behind our concerns about potential cumulative impacts on Red-breasted Goose

are set out above and we believe that the potential impacts on storks and raptors is similar. At present, the report provides rather little evidence in support of its conclusion of no significant impact. Given the high risk of significant cumulative impacts on birds we think it is essential that this issue is assessed in more depth before a funding decision is made on the AGE project.

- vi. *Lack of explicit appropriate assessment under art.6 (3) of the Habitat Directive.* The windfarm project area borders Kaliakra SPA as already designated and is largely situated in the area of the IBA which in our view should but has not been included in the SPA. Hence the provisions of both art 6(3) of the Habitat Directive and art. 4(4) of the Birds Directive are relevant. In the absence of an explicit assessment under art.6 (3) of the Habitat Directive, there are uncertainties about whether the project will have impacts on both the SPA (as already designated) and the SPA (as we believe it should be designated i.e. with the larger boundaries). At the same time there is clear evidence that significant impacts on the SPA/proposed SPA are likely from the implementation of AGE's windfarm project, especially to wintering geese, migratory storks (both roosting and flying over) and breeding and migratory raptors. There are at least two globally threatened species which we believe are likely to suffer significantly from the implementation of the project – the Red-breasted Goose and the Red-footed Falcon, and the impact on the other globally threatened species needs to be considered in more detail. Therefore we believe that as currently planned there are breaches of both Art 4(4) of the Birds Directive and 6(3) Habitat Directive.

3. ***The proposed monitoring plan is weak and not relevant to give data on the actual extent of impacts.***

- i. The proposed monitoring methodology does not include studying the behaviour of birds in the area, eg measuring parameters such as height of flight (including landing/taking off behaviour), time spent in the area, frequency of visits during the day, frequency of visiting the area by breeding birds during the breeding season, mapping of hunting territories of raptors, feeding areas of geese, their movements, the breeding success. The 'snapshots' which will be provided by the monitoring as proposed will answer only the question of presence/absence of species. The planned visits to the area would not allow collection of representative data on above mentioned parameters even if they were included in the monitoring methodology. Therefore in practice the data generated by the monitoring as proposed will not provide relevant data for analysis of the actual levels of impact and therefore to inform any necessary adaptive management.
- ii. The methodology proposed for monitoring the collision rate has already been criticized in many scientific publications as one which does not provide representative data. Some of the arguments are that the area investigated is too small given that birds killed from collision with wind turbines can be found at a distance of 2 km from the windfarms. Also the removal of carcasses by predators or by workers at the windfarms is a very important issue which is very difficult to mitigate.

- iii. The methodology proposed includes big intervals of time without monitoring both within a single year and within the whole period of operation of the wind turbines, which will cause significant bias and low quality of the results. Given the importance of the location the monitoring should be carried out every year during the 20-year period of operation of the wind turbines. Within a year the monitoring period should be representative and specific to birds – breeding, wintering and migratory. Especially for migratory birds it can not be scattered (all the migration period should be subject of monitoring). Carcasses should be collected every day, to ensure the results reflect the real level of impact.

III. Publicity and transparency of the consultation procedures

Since 2003, BSPB has widely publicized its position that the area of Kaliakra is not suitable for windfarm construction, because of number of ornithological arguments, also expressed in this statement (examples are given in **Appendix 21**). In 2005 we received the written support of BAS (Central Laboratory on General Ecology and the Natural History Museum) and the Sofia University that **the region is inappropriate for windfarm development due to the intensive bird migration**, amongst the other arguments (**Appendix 22**). The given statements are independent because they are given to confirm the known nature value of the area, but not under the request of any of the investors within the area of Kaliakra IBA. The citizens of Balgarevo village organized petition against windfarm development in the region around the settlement, where 2/3 of the citizens supported the petition.

All these arguments were neglected by the investors and the competent authority on the basis that an EIA process was undertaken. This was despite the fact that this EIA did not even fully comply with the recommendations of RIEW Varna for the EIA). BSPB's recommendations were not taken into account at any stage of the consultation process.

Under the current consultation process taken to inform the potential EBRD/IFC investment decisions we note that the investment project is changed, and so in fact the consultations procedures undertaken so far, and presented by the investor are not relevant for the current investment project. As the project has been amended (in our view significantly) the consent process and associated consultation should be repeated for the project as now proposed to be constructed legally.

People in local settlements are particularly concerned about the potential noise impacts. However the data on the noise generated by the wind turbines and the analysis does not provide a complete and clear picture about the level of impact of this factor on people

The following data are not provided in the report: frequency of the wind with certain speed and certain direction, which is needed in order to make predictions in the modelling about how often the surrounding villages will be subject to noise pollution; the optimal speed of the wind turbines, depending on a predominant wind velocity in the area, and relation between this optimal speed and the noise impact on surrounding areas. In fact the modelling does not provide the relation between the wind characteristics, that are specific to the area, and the noise impact. Although there are three scenarios, it is difficult for non specialists (such as general public and local people) to understand the

expected level of impact in this particular area. We believe that this section of the assessment has to be given more attention – the missing data have to be completed, the analysis – improved and presented clearly.

Conclusions and recommendations

Before taking a decision to fund the Windfarm “Saint Nikola Kavarna” project BSPB and BirdLife International urge IFC/EBRD to ensure that:

- The investment project fully complies with relevant national law and international agreements;
- Recommendation 130 (30 November 2007) of the Bern Convention is properly implemented. Relevant to the current project are particularly the paragraphs 1, 2, 3 and 4 (**Appendix 23**).
- A sound EIA is elaborated and consent given by the responsible authorities to the investment project as now presented to IFC/EBRD for financing (in terms of the parameters, scope and elements of the project);
- Appropriate assessment under Article 6 (3) is elaborated for the project, because it affects both the approved SPA and the part of the IBA originally proposed as but not approved SPA, to which art 4(4) of the Birds Directive applies.
- In order to address the current inadequacies in the environmental information, the above assessments include:
 - equal evaluation of all the potential alternatives
 - analysis of all potential impacts to birds caused by windfarms, including detailed assessment of cumulative impacts, based on good quality baseline data for all relevant species collected using standard methodologies
 - ensure that wind turbines are not placed on feeding areas of geese, roosting areas of storks, hunting areas of breeding raptors, thermals along the migration corridor or areas of landing, taking off of birds (areas where birds usually fly lower)
 - A more rigorous monitoring strategy (including targeted methodology) proposed for all relevant bird species
- Strategic approach for windfarm development, taking into consideration broader region, is on place to help in making informed decision

Based on the currently available information, BSPB and BirdLife International strongly believe that the construction of the windfarm “Saint Nikola – Kavarna” will have significant impacts on biodiversity and breaches legislation and therefore that further assessment is needed before a sound decision on whether to invest in the project can be taken by IFC and EBRD.

However, if, despite of these concerns, IFC and/or EBRD decide to financially support the AGE project on the basis of the information currently available, we would like to see that the parameters of project approved for financing are identical to those described in the relevant EIA decision and requirements of the decision and the project have to comply with the recommendation 130 (2007) of the Bern Convention. In addition we would like to see more detailed monitoring measures and the measures (for prevention and assessment of damage) implemented. Our preliminary ideas about these measures are outlined below and we would be happy to explore these with you in more detail. Although, as above we would stress that we make these suggestions without prejudice to our position that the project should not proceed under certain aspects have been investigated further and all relevant information is available.

Preliminary recommendations:

Monitoring

The proposed monitoring plan should be strengthened to include:

- Establishment of an expert group including all relevant stakeholders (MoEW, BAS, Sofia University and NGOs) to advise on and oversee the monitoring including remedial measures to be taken on the basis of the monitoring results.
- Use of standard species specific methodologies for carrying out the survey and the monitoring that is applied strictly for both the baseline survey and the monitoring. The methodologies to be used should be agreed in advance by consensus of the expert group
- A minimum 3-years baseline survey on migratory, breeding and wintering birds before the construction is started.
- The monitoring must be carried out every year during the 20-years operation period of the wind farm.
- Within the year the monitoring period should be representative and specific to birds – breeding, wintering and migratory. Especially for migratory birds it cannot be scattered (all the migration period should be subject of monitoring).
- Carcasses should be collected every day to avoid significant underestimation of the real situation.
- External experts appointed by MoEW and NGOs must be involved in the monitoring and the data analysis.
- The methodologies used and full data from the monitoring as well as all the reports and actions taken to mitigate impacts on birds and bats should be publicly available and free to access.

Mitigation

- Wind turbines located in the feeding areas of geese and roosting areas of storks to be placed out of these sensitive areas
- Wind turbines to be situated in a line parallel to the main direction of the migration route, where the lines of wind turbines have to be placed at distance of a minimum 1000 m each from another, (where already constructed wind turbines are taken into account)
- Wind turbines must not have lighting attributes

- Wind turbines must not operate during the night (from the sunset to the sunrise) as well during the foggy weather. In addition during the winter turbines must not operate until 10 o'clock in the morning and after 4 o'clock in the afternoon. During autumn migration the wind turbines must not operate since 5 August to 5 September.
- Those turbines that cause bird collisions have to be removed.
- The supporting electricity powerlines, that need additionally to be constructed, have to be put entirely underground.

Compensation

- We are aware that the possibility for application of compensatory measures is very limited in this particular case. In principle it is possible to apply measures to attract geese to alternative locations away from the wind turbines eg purchase/leasing of new land parcels and long-term management of the land for geese. These possibilities have to be explored very carefully taking into account the present feeding grounds and roosting places of the Red-breasted goose and the ongoing windfarm development in the region. Application of such compensation measure should be carefully studied beforehand. The assessment has to follow the provisions of art. 6.4 of the Habitat Directive, and thus require application of art. 6.3 of that Directive as well. In case it is accepted as opportunity, it has to be implemented before the start of the project.

As a charity registered to work in the public benefit, the Bulgarian Society for the Protection of Birds, will submit a copy of the current statement to the following bodies for their information and appropriate reaction under their responsibility: Bulgarian Ministry of Environment and Water, European Commission, Bern Convention, Bonn Convention, Ramsar Convention, UNFCCC and Convention on Biological Diversity. This document will be available to the public on the BSPB web site, which is also part of the Clearing House Mechanism under the Convention on Biological Diversity.

List of Appendices to the BSPB Statement on implementation of Saint Nikola Kavarna Windfarm

Appendix 1. Consent given by RIEW Varna to a windfarm of 52 turbines with investor GeoPower Ltd.

Appendix 2. National Biological Diversity Strategy, 1994 – maps of the most important areas in Bulgaria in terms of biodiversity

Appendix 3. Article in “Raptor Watch” about Kaliakra as internationally significant area for raptor migration.

Appendix 4. Atlas of Breeding Birds in Bulgaria. Relevant extracts

Appendix 5. Results from the Mid-winter Count of waterfowl in Bulgaria for the Period. Relevant extracts

Appendix 6. The newsletter “Important Bird Areas in Bulgaria and Natura 2000” issued in January 2005

Appendix 7. Letter of GeoPower Ltd to BSPB with first announcement about the windfarm project – January 1006

Appendix 8. Distribution of the Calandra Lark *Melanocorypha calandra* and the Short-toed Lark *Calandrella brachydactyla* and key habitats at Kaliakra IBA

Appendix 9. Distribution of Long-legged Buzzard *Buteo rufinus*, Levant Sparrowhawk *Accipiter brevipes* and the Eagle Owl *Bubo bubo* at Kaliakra IBA

Appendix 10. Distribution of the Red-footed Falcon *Falco vespertinus* at Kaliakra IBA - key breeding and foraging habitats

Appendix 11. Migration route Via Pontica along the Black Sea Coast – general situation

Appendix 12. Roosting and staging areas of migrating birds during autumn migration

Appendix 13. Foraging areas for wintering geese in Kaliakra IBA, including Red-breasted Goose *Branta ruficollis*

Appendix 14. Impact of exclusion of arable land from the Kaliakra SPA

Appendix 15. T-PVS(2007)27 “On-the-spot appraisal Wind farms in Balchik and Kaliakra – Via Pontica (Bulgaria). Report of the on-the-spot appraisal (20-22 June 2007)”. *Extracts from the report*

Appendix 16. Field map of paths of migratory flocks of white stork identified during parallel survey of the autumn migration in Kavarna region in 2006

Appendix 17. Pictures of the area of the windfarm investment project of “Geopower” Ltd. –2006 – 2007

Appendix 18. Pictures of wintering geese at the AGE’s windfarm project area, including Red-breasted Goose *Branta ruficollis*

Appendix 19. Modeling of displacement effect of the wind turbines of AGE windfarm on the feeding areas of Red-breasted Goose *Branta ruficollis*

Appendix 20. Windfarm projects realized or planned within the Kaliakra IBA and its surroundings

Appendix 21. Examples of BSPB’s promotion of its position that the area of Kaliakra and Black Sea Coast is not suitable for windfarm construction

Appendix 22. Statements of the Bulgarian scientific institutions on windfarm development along the Via Pontica migration route (and Kaliakra region in particular)

Appendix 23. Recommendation 130 (30 November 2007) of the Bern Convention (T-PVS_2007_24)

Appendix 24. Red breasted goose map

Appendix 25. Barrios, L and Rodriguez, A (2004) Behavioural and environmental correlates of soaring bird mortality at on-shore wind turbines. *Journal of Applied Ecology*, 41, 72-81

Appendix 26. Table detailing the wind turbines planned in coastal Dobrudzha