



Ghana Wildlife Society Position Statement

on

Wind Energy Development and Power Transmission in view of Bird and Biodiversity Conservation in Ghana

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The Ghana Wildlife Society is a non-governmental, non-political and non-profit making conservation organization. We have been at the forefront of nature conservation for the past three decades. Our mission is to conserve wildlife in all its forms to ensure a better environment and for improved quality of life for all people. We belong to BirdLife International partnership, the world's largest nature conservation network of 121 autonomous NGOs around the world. We operate based on the model that stipulates that conservation actions must hinge on credible scientific evidence.

Our work over the past three decades has transformed corporate industrial practices and national policy, including the ban on trade in Grey Parrots and provision of models for community ecotourism initiatives in Ghana (e.g. Nzulezu and Afadjato). Our past and present nature conservation campaigns have contributed to the reduction of indiscriminate killing of bats in the Accra Metropolis and other parts of the Country. Through several research activities, we have contributed scientific data to various national policy processes. We promote conservation education in schools and the general public through Wildlife Clubs of Ghana and other means.

Introduction

In the past fifteen years, wind energy development has caught up very fast, especially on-shore. This stems from Ghana's commitment to move away from the traditional energy sources, increase her energy security and contribute to the climate change agenda¹. Renewable energy offers an important contribution to combat the harmful environmental changes due to climate change by reducing dependence on fossil fuel and hence reducing the harmful emission of greenhouse gases². Of the most advanced renewable energy technologies, wind energy is increasing its contribution to energy generation worldwide including Ghana.

Energy generated, irrespective of source, is transferred to a sub-station and subsequently distributed to users in Ghana through above-ground powerlines. The construction of these

¹ Ghana National Renewable Energy Action Plans 2015-2020.

² https://www.birdlife.org/sites/default/files/attachments/birdlife_climate_change_position_lores-november-2015.pdf

power distribution and supply infrastructure is vital for any country, including Ghana, for its socio-economic development. This network of infrastructure, despite its importance, poses significant risks for biodiversity including birds not only in Ghana but also in the entire African-Eurasian Region³. Countries within African-Eurasian Region are interconnected by migratory birds, as more than two billion birds move between the two continents twice every year during migration seasons. Wind energy, considered one of the greenest types of energy, poses a conservation conundrum⁴.

Problem Statement: Power infrastructure and Impact on Birds & other Biodiversity

Wind energy and powerline infrastructure are evidenced to harm particularly birds and bats, if not appropriately designed and deployed. Negative impacts include:

Disturbance and displacement - Disturbance may potentially arise from increased human activity (e.g. during construction, operational phase and maintenance, or where access roads are being constructed). The presence, noise or movement associated with wind turbines and related infrastructure may deter birds from using their habitats that are close to turbines⁵. Ghana's wind energy infrastructures are currently being installed in areas close to the coastline and wetlands, which are habitats for resident and migratory birds. Such disturbance can lead to the displacement of bird populations and could amount to a reduction in quality or loss of habitat for birds, hence compromising the survival of the affected species. Sites such as the Songor Lagoon is globally recognised as a wetland of international importance (Ramsar Site) and an Important Bird & Biodiversity Area (IBA). Wind turbines and powerlines may act as barriers to the movement of some migratory birds or birds commuting between different sites (breeding, feeding and resting areas).

Collision & Electrocuting injury/mortality – Inappropriately sited wind turbines, powerlines and associated infrastructure in other jurisdictions have led to a significant mortality rate or injury for vulnerable birds some of which are migratory. Direct mortality or lethal injury of birds can result not only from collisions with rotors (turbine blade) but also with towers, nacelles and associated structures such as guy cables and powerlines. Lighting installation as part of the windfarm infrastructure can increase bird fatality if necessary precautions are not taken. Lit turbines can attract birds, thereby potentially increasing the risk of collision, and risks for collisions are heightened especially in conditions of poor visibility. Solid or blinking red lights attract birds more than white strobes. For bats, in addition to direct collision with turbines barotrauma⁶ is also a concern.

A collision occurs when a flying bird physically collides with an overhead cable. The bird is typically killed by the impact with the cable, the subsequent impact with the ground, or dies from the resulting injuries. They affect especially large birds such as storks and raptors. Migrating birds flying at heights of 20m to 50m are at considerable risk of collision, especially at night, when flying in flocks, and for large and heavy birds of limited manoeuvrability.

³ Convention on the Conservation of Migratory Species of Wild Animals (2011) Guidelines for mitigating conflicts between migratory birds and electricity power grids.

⁴ <https://www.bbc.com/future/article/20200302-how-do-wind-farms-affect-bats-birds-and-other-wildlife>

⁵ https://tethys.pnnl.gov/sites/default/files/publications/Guidelines_for_Assessing_the_Impact_of_Wind_Farms_on_Birds_and_Bats.pdf

⁶ Injury caused by a change in air pressure, affecting typically the ear or the lung

Another risk to birds is electrocution when perching occurs on uninsulated cables or badly designed infrastructure⁷. Electrocution of birds may also result in bird injury or mortality. Electrocution risk is high with “badly engineered” medium voltage power poles. For numerous medium-sized and large birds, such as storks and raptors, that perch, roost or nest on such power poles, such electrocutions can cause population declines. Even smaller birds down to the size of a starling can be affected depending on detailed construction features⁸. Negative interactions between birds (& other animals) and power infrastructure is not just a conservation issue; it also has serious economic and financial consequences due to the disruption to power supplies and infrastructural maintenance thereby presenting a cause for concern among electricity distribution companies⁹.

Habitat loss and alteration – Windfarm and power distribution infrastructure development has the potential of damaging or altering the bird’s habitat. The scale of damage or loss of a bird’s habitat depends on the scale or size of the project. While some construction may lead to the loss or damage habitats, others may lead to habitat fragmentation¹⁰. Tall trees cannot be allowed to grow under overhead transmission powerlines and normal practice is to clear and then cut back all vegetation every few years. This usually occurs when such facilities are situated in forested areas or other conservation designated areas. This can result in loss of valuable wildlife habitat if these areas are not avoided in planning and routing decisions¹¹.

GWS Position

Ghana Wildlife Society (GWS) supports the Government of Ghana’s transition to more renewable sources of energy. We recognise the need to generate power that is clean and that does not contribute to greenhouse gas emissions. While the potential benefits of renewable energy are huge, like any other development, they can have negative impacts on biodiversity if they are not planned and implemented appropriately.

GWS position is aligned to Resolutions and Guidelines adopted in Multilateral Environmental Agreements which recognises the need to ensure that renewable energy development and powerline infrastructure networks are developed in harmony with nature. It is of utmost urgency to address and minimize the threat to birds from electrocution, collision and loss of important habitats due to electricity generation, transmission and distribution. The renewable energy and biodiversity impacts topic has been raised and considered under several international conventions, notably the Convention on the Conservation of Migratory Species of Wild Animals, the African-Eurasian Migratory Landbird Action Plan and the African-Eurasian Migratory Waterbird Agreement all to which Ghana subscribes.

Avoiding and Mitigating Risks to Birds and other Wildlife and their Habitats

Environmental Assessment - GWS encourages the use of environmental assessment tools, such as Strategic Environmental Assessment (SEA) and Environmental Impact Assessment

⁷ http://ww2.rspb.org.uk/Images/Renewable_energy_report_tcm9-297887.pdf

⁸ http://www.birdlife.org/eu/pdfs/Nature_Directives_material/BHDTF__Position_Power_Lines_and_birds_2007_05_10_.pdf

⁹ Convention on the Conservation of Migratory Species of Wild Animals (2011) Guidelines for mitigating conflicts between migratory birds and electricity power grids.

¹⁰ http://ww2.rspb.org.uk/Images/Renewable_energy_report_tcm9-297887.pdf

¹¹ https://www.birdlife.org/sites/default/files/bhdtf_position_2016_power_lines_and_grid_development.pdf

(EIA), to map out potential impact areas to biodiversity at the strategic and site-specific levels respectively. SEA should assess opportunities and broad cumulative risks associated with wind energy and powerline infrastructure at the national level against an overarching relevant policy and or a programme. Ghana is at the early stage in the development of wind energy resources, and this presents the country with the best opportunity to develop strategic decision support tools such as SEA and progress renewable energy development while integrating best practices all through right from the beginning. Other strategic tools that are important to support sustainable renewable energy development include:

- Sensitivity maps for vulnerable species & sites including and other valued ecological components;
- Publications of national lists of vulnerable species, sites and habitats concerning energy infrastructure;
- Standardised frameworks for EIA - that responds to the biodiversity sensitive to energy infrastructure;
- National standards on pre- and post-construction monitoring;
- Codes of practice for data collection and planning;
- Guidelines for mitigation and operating energy infrastructure;
- National standards on design of wildlife-friendly infrastructure.

Ghana's EIA guideline for the energy sector should be reviewed to reflect current trends & realities and findings from SEA on the renewable energy sector in the country. There is existing guidance which can be adapted to Ghana. For instance, guidelines developed by the Convention on Migratory Species (CMS) and BirdLife International while other conservation organisations have developed useful reference material.

Mitigation hierarchy – GWS strongly recommends that the mitigation hierarchy be fully applied in renewable energy programmes and projects if such development is to achieve an adequate level of sustainability in the country. High-risk sites or routes should be avoided while biodiversity offset measures should only be considered if it has been demonstrated that there are no feasible alternatives available¹².

Site selection and Routing – GWS strongly believes that careful selection of location and route that not only considers high energy resources sites and project costs but which also integrates biodiversity considerations can significantly reduce potential conflicts between renewable sector development and biodiversity conservation and bring high value for such projects in the long term. Windfarms and powerlines must be located and routed so that there are no significant adverse impacts on birds and other wildlife. The deployment should be informed by national zoning and sensitivity maps and avoid, wherever possible, construction along migration flyways and in habitats of conservation importance. Hence, due consideration must incorporate avoidance of locating energy projects in the following areas among others:

- a. Important Bird & Biodiversity Areas (IBAs) or Key Biodiversity Areas (KBAs) in Ghana;
- b. Wetlands of international importance (Ramsar sites);
- c. Statutorily designated areas for conservation in Ghana;

¹² <https://www.birdlife.org.za/wp-content/uploads/2019/10/BirdLife-South-Africa-Wind-Energy-and-Birds-Position-Statement.pdf>

- d. Critical Sites and routes important for migratory species of birds;
- e. Important sites (breeding, roosting, foraging) for globally threatened species.

Routing of powerlines should as much as possible avoid areas where large numbers of birds congregate and/or regularly fly through at a low altitude (coastlines, topographical bottlenecks, wetlands, breeding colonies), and also from areas, as listed above, that contain species highly vulnerable to the impact of overhead cables.

Pre- and Post-construction monitoring – A complete avifaunal study for windfarms and other energy infrastructure must consider surveys done for at least one year so that migratory seasons for birds are also taken into account. Such studies not only form baselines for post-construction studies but also inform the developers and windfarm operators on the best mitigation measures to put in place for high-risk species including designing comprehensive biodiversity management plans for the energy projects. Pre-construction survey should inform the EIA process. It should be understood that integrating mitigation measures whether on windfarms or powerlines is cheaper before the constructions are completed.

Operational Phase Mitigation - Once a power infrastructure has been constructed, the potential effects on birds and other biodiversity should be monitored, so that potential long-term impacts can be identified and addressed¹³. With regards to existing powerlines and windfarms, monitoring scheme should be put in place to identify situations that are causing relatively high levels of bird's injury and/or mortality due to electrocution and/or collision and modify these as a matter of priority¹⁴. Monitoring of windfarms and powerlines should be regularly done and its impact on birds and biodiversity evaluated at the national scale as well as the effectiveness of mitigation measures put in place to minimise impacts on bird's populations.

Infrastructure design - All new power poles, pylons and other technical structures on medium voltage power poles should have a safe design for birds to protect birds from electrocution.

Call for action

Ghana Wildlife Society (GWS) believes that renewable sources are important and in producing sustainable power in Ghana, but if biodiversity considerations are adequately integrated into the Planning, Generation, Transmission and Distribution of power. We, therefore, call for the following considerations going forward:

- 1) That the economic concerns of power projects must not override biodiversity but must be an integral component at the project conception through to implementation;
- 2) Application of strategic planning tools (such as SEA, sensitivity maps) are important in averting conflicts between the renewable sector and biodiversity conservation: we *urgently* call upon the relevant government agencies, energy developers, financiers and other stakeholders to employ such tools so that early-stage planning decisions are taken with the best available information;

¹³<http://migratorysoaringbirds.undp.birdlife.org/sites/default/files/factsheet%20Wind%20Farm%20Government%20new%20logo%20PR.pdf>

¹⁴ Convention on the Conservation of Migratory Species of Wild Animals (2011) ENEP/CMS Resolution 10.11 – powerlines and migratory birds.

- 3) National legislation and policies, such as the Renewable Energy Act, 2011 (Act 832); the Environmental Assessment Regulations, 1999 (L.I. 1652); the EIA Guideline for the Energy Sector; the National Energy Policy; and the Strategic National Energy Plan (2006-2020), should be updated and enforced ensuring transparency while taking into account other regional and international obligations that Ghana has committed to supporting a truly green and renewable energy sector development for the country;
- 4) GWS calls upon stakeholders {including the Environmental Protection Agency, the Ministry of Energy, the Energy Commission of Ghana, Ghana Grid Company Limited (GRIDCo)} in the energy and conservation sectors to initiate a national dialogue to develop national standards to guide renewable energy sector development and infrastructure that is in line with biodiversity conservation requirements;
- 5) We call upon the lead government agencies from both energy and environment ministries to initiate the development of a comprehensive national wind energy and power transmission & distribution guidelines to guide the planning, construction, operation, maintenance and decommissioning of such facilities in Ghana.
- 6) The need for more research and monitoring, in consultation with relevant experts, to improve our understanding of the impacts of energy infrastructure on birds and biodiversity.

Given the above, GWS will continue to offer herself and engage constructively with relevant stakeholders to mainstream biodiversity objectives into development planning, policy/legislation making and implementation and deployment of energy programmes and projects.