

NON-TECHNICAL SUMMARY



19NJDA/TI/107/04

Bogoslovec 36 MW Wind Farm
Thor Impex d.o.o.e.l

VERSION AND REVISION HISTORY

Revision	Description of changes	Authored	Approved	Date of issue
1.0	Final Draft	N. Davies	B. Lazarevskvi	27 February 2019
2.0	Updated to include Lender comments	N. Davies	B. Lazarevskvi	17 May 2019
3.0	Updated to reflect revised WTG technology, number and layout	N. Davies	B. Lazarevskvi	24 June 2019
4.0	Updated to reflect final WTG technology and study updates and for public disclosure pre-NTP	N. Davies	B. Lazarevskvi	27/07/2021

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties. This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

TABLE OF CONTENTS

1 INTRODUCTION 6

1.1 Overview of project..... 6

1.2 Project need..... 7

1.3 Analysis of alternatives 8

1.4 Project description..... 8

1.5 Assessment approach..... 11

1.5.1 Stakeholder participation and consultation..... 12

1.6 Summary of environmental and social effects 13

1.6.1 Noise 13

1.6.2 Shadow Flicker..... 14

1.6.3 Traffic and transportation 14

1.6.4 Biodiversity 15

1.6.5 Visual impacts..... 16

1.6.6 Land acquisition 16

1.6.7 Community health and safety..... 16

1.6.8 Procurement, labour management and worker health and safety 18

1.6.9 Decommissioning 18

1.6.10 Other impacts..... 18

2 MITIGATION AND MANAGEMENT OF IMPACTS 19

2.1 Good International Industry Practice (GIIP)..... 19

2.2 Measure to protect local community and workforce..... 19

3 CONCLUSION 20

Table 1: WTG coordinates (July 2021)..... 9

Table 2: Project schedule..... 10

Table 3: Opportunities for local content / procurement..... 11

Figure 1: Components of the Bogoslovec Wind Farm 6

Figure 2: Project layout..... 7

Figure 3: Example of existing site roads to be upgraded 9

Figure 4: General project area 9

Figure 5: Area of coniferous plantation in the project area..... 9

Figure 6: Agricultural land on the lower terrain slopes..... 9

Figure 7: Sound levels at 10 m/s wind speeds for BWF Siemens Gamesa turbines(5MW) 13

Figure 8: Depiction of how shadow flicker may occur during periods when the sun is behind the WTG 14

Figure 9: Example of WTG blade being transported to site via abnormal load transporter 14

GLOSSARY

Acronym	Description
AOI	Area of Influence
BWF	Bogoslovec Wind Farm
CCTV	Closed Circuit Television
CESMP	Construction Environmental and Social Management Plan
CHSSP	Community Health, Safety and Security Plan
CLO	Community liaison officer
EIA	Environmental Impact Assessment
EHS	Environment Health and Safety
ESMS	Environmental and Social Management System
GIIP	Good International Industry Practice
IBA	International Bird Area
IFC	International Finance Corporation
MoEPP	Ministry of Environmental Planning and Protection
NM	North Macedonia
NTS	Non-technical Summary
OHL	Overhead line
OHS	Occupational Health and Safety
PS	Performance Standard
SGRE	Siemens – Gamesa Renewable Energy
SMP	Security Management Plan
SMS	Security Management System
SRA	Security Risk Assessment
TMP	Traffic Management Plan
WTG	Wind Turbine Generator

PREFACE

This document provides a Non-Technical Summary (NTS) of the environmental and social impact assessment for the Bogoslovec Wind Farm Project (the “Project”). This NTS aims to present clearly and simply the main findings and conclusions of the impact assessment process. Copies of this NTS, the final version of the Project Environmental Impact Assessment (EIA), and future monitoring reports can be viewed at the following locations:

- Sveti Nikole – municipality office (hard copy);
- Project site office (hard copy);
- Bogoslovec wind farm web page (electronic copy).

Pre-construction community notifications are planned before construction works start via notices in communities, via radio, on the Project webpage and Facebook page.

The Project has a nominated Community Liaison Officer (CLO) to ensure smooth communications between the community and the Project. The CLO is Blaskho Lazarevskvi, Project Owner. The Project will maintain regular communication via social media

If you have any concerns or grievances as the Project moves to the construction phase, you may comment in the following ways. A form for submitting grievances is available at key locations in the project area and via the project website.

- Comment form at the Municipality office in Sveti Nikole;
- Comment via Grievance form on the Project web page www.wpbogoslovec.com;
- Directly to the CLO via phone or text;
- Face to face with CLO; and
- Verbally to site manager or Contractor staff in the field.

You can also contact the Project directly via the following means:

Name of Company	DRUSTVO ZA TRGOVIJA I USLUGI THOR IMPEX EKSPORT-IMPORT DOOEL SKOPJE a limited liability company		
Address	P.fah 907 1000 Skopje Macedonia		
Telephone	02/2720600 / 02/2720602	Fax:	blashko@wpbogoslovec.com / www.wpbogoslovec.com

1 INTRODUCTION

1.1 Overview of project

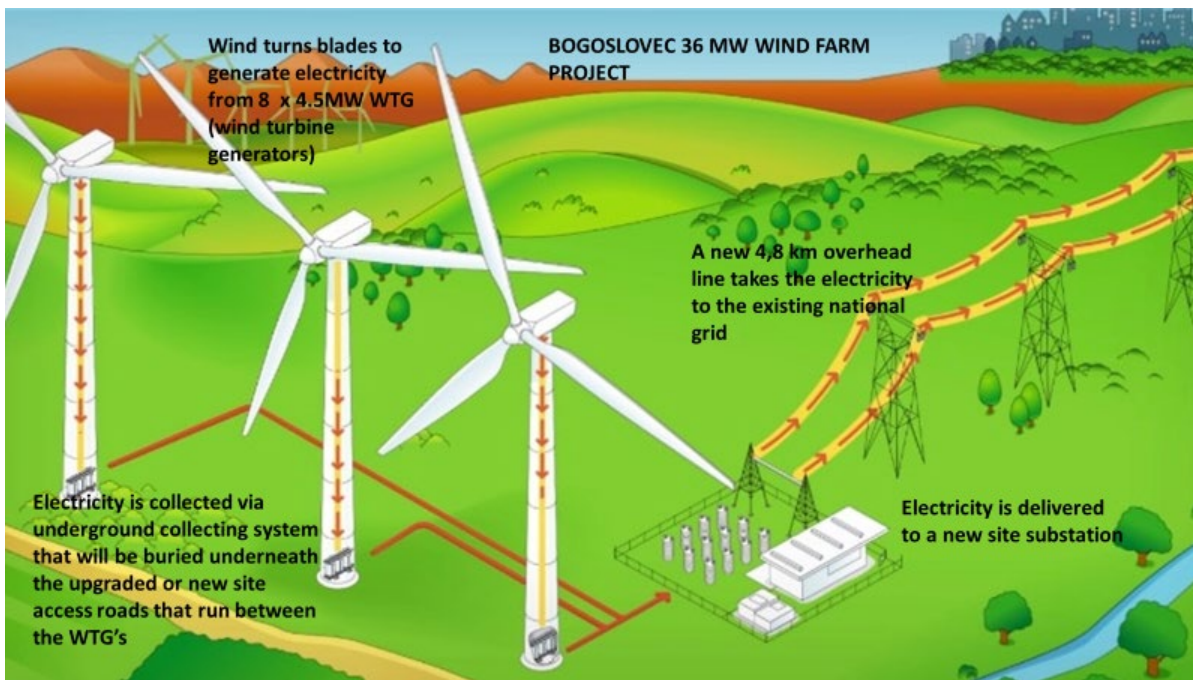
THOR Impex d.o.o.e.l (THOR or the “Project Developer”) has identified the need to expand the renewable energy generation portfolio in North Macedonia¹. THOR plans to develop a 36-megawatt (MW) wind farm near the village of Bogoslovec, Municipality of Sveti Nikole (the “Bogoslovec wind farm project “ or the Project”).

The Project will consist of eight 5.0MW wind turbine generators (WTG) rated at 4.5 MW with a height of 102.5 m. In addition to the WTG, the project will include the following related facilities as listed below and illustrated in Figure 1.

- Electric collection system (buried below the upgraded and new internal access roads);
- New 20(30) kV / 100 kV site substation;
- 4.5 km of new double-circuit 110 kV overhead line (OHL) from the site substation to a point on the existing 110 kV overhead line (TS Ovche Pole-TS Shtip) (estimated 20 towers); and
- Upgrade existing dirt access roads from A3 to each WTG and the site substation (total length up to 11,000 m).

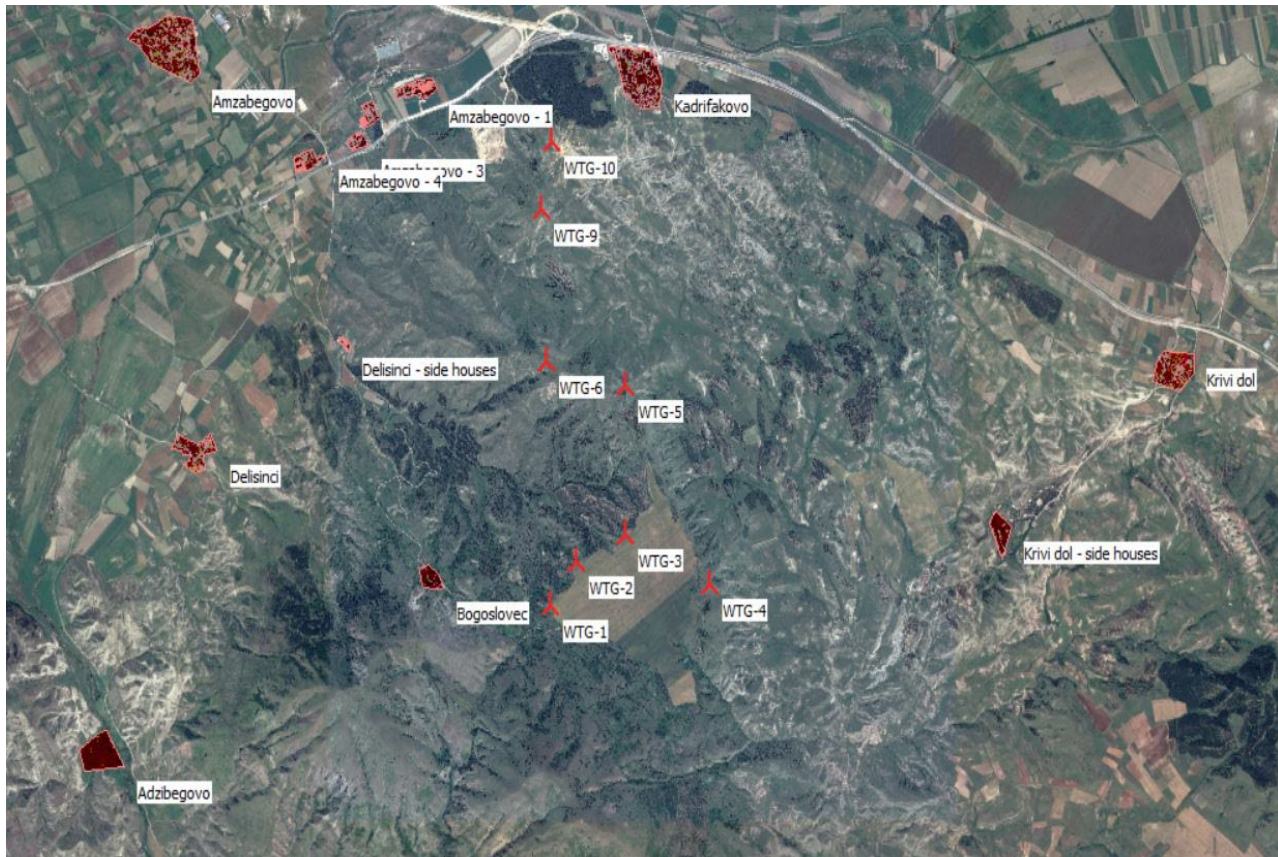
Figure 1 illustrates the key components of a typical wind farm. The final proposed layout is illustrated in Figure 2. There will be internal access roads between each WTG.

Figure 1: Components of the Bogoslovec Wind Farm



¹ Previously referred to as the Former Yugoslav Republic (FYR) of Macedonia; Republic of Macedonia and since November 2018 North Macedonia. For the purpose of consistency, we have used the term North Macedonia however Laws and reference documentation may refer to the previous nomenclature as stated.

Figure 2: Project layout



The Project has received the following key approvals up to June 2019:

- Decision for construction of wind energy facility (Ministry of Economy);
- Environmental consent (Ministry of Environment and Physical Planning) (variation opinion 2017);
- Grid connection agreement (Electricity Transmission System operator of Macedonia (AD MEPSO));
- Aviation consent (Department of civil aviation) considering the proximity to the possible future planned cargo airport Philip II-Stip;
- Zoning permit (Ministry of Transport and Communication); and
- Opinion from Ministry of Culture (no significant cultural features).

1.2 Project need

The Energy Development Strategy of North Macedonia² defines the most favourable long-term development of the energy sector in the country to ensure a safe and high-quality supply of energy to consumers. To provide the necessary energy in North Macedonia for 2008-2020, the strategy foresees the need to construct small hydropower plants, wind power plants, solar power plants and biomass power plants totalling 90 MW and a

²

http://www.ea.gov.mk/projects/unece/docs/legislation/Macedonian_Energy_Strategy_until_2030_adopted.pdf

production of 180 GWh per year by 2020. The proposed project will play a key role in helping North Macedonia meet its energy needs and do so to align with national renewable energy targets.

1.3 Analysis of alternatives

As part of the impact assessment process, the Project has considered alternative options in terms of siting, number and arrangement of the WTG, different technology options for the WTG (between 2.5, 3.6 MW, and 4.5 MW), as well as the do-nothing scenario. Several studies have been undertaken in Macedonia to determine the most suitable locations for the construction of wind farms culminating in a map showing the wind energy potential in North Macedonia³. According to this study, 15 of the most favourable sites for the construction of wind power plants have been selected in Macedonia. Most of these sites are located around Povardarie, Ovche Pole in the vicinity of Sveti Nikole, and the higher mountain parts with high wind speeds. The proposed site is within a recognised wind area. During the optimisation process, the number of WTG has reduced from 10 to 8 WTG. The current proposed option of 8 WTG, each producing 4.5 MW, has determined the most optimum solution for this location by the preferred WTG supplier.

1.4 Project description

The Project is in the eastern part of North Macedonia, approximately 1 km northeast of Bogoslovec village and 11km southeast of the city of Sveti Nikole within the Municipality of Sveti Nikole. Nearby villages include Bogoslovec, Delisinci, Kadrifakovo, Amzabegovo and Krivi Dol, the location of these villages relative to the WTG are illustrated in Figure 2. The land cover consists of low vegetation with some stands of forest located along the terrain slopes and areas of agriculture on the lower slopes (see Figure 3 to Figure 6. The WTG's are located at elevations between 340 m and 490 m above sea level. The site is located adjacent to the Ovche Pole – Bogoslovec Important Plant Area⁴, the Bogoslovec candidate Emerald site⁵, and River Topolka-river Babuna-river Bregalnica IBA and within the Ovche Pol Important Bird Area (IBA). The total project area of influence (direct and indirect) is approximately 480 km² and requires agreements for a total of 271 land parcels as follows:

- Acquired directly from private landowners through a process of negotiated settlement;
- Servitude agreement (with private landowners or Government) for the access roads and OHL right of way;
- Long term lease with the Government for permanent land requirements for the substation, WTG and OHL tower locations.

³ Wind Atlas of Macedonia <http://windmacedonia.feit.ukim.edu.mk/index.php/project/phase1/21>

⁴ Melovski et al. (2011). Important Plant Areas in the Republic of Macedonia. Macedonian Ecological Society, vol. 19, p. 128, Skopje

⁵ Emerald sites are sites designated under the Bern Convention. Candidate Emerald sites in Macedonia are not officially protected under national law. The Bogoslovec candidate Emerald site was nominated in 2008.

Table 1: WTG coordinates (July 2021)

Wind turbine name	X (m)	Y (m)	Wind turbine type
WTG-1	586047	4624844	Siemens Gamesa 5.0-145 (hub height: 102.5 m)
WTG-2	586276	4625190	Siemens Gamesa 5.0-145 (hub height: 102.5 m)
WTG-3	586735	4625406	Siemens Gamesa 5.0-145 (hub height: 102.5 m)
WTG-4	587515	4625017	Siemens Gamesa 5.0-145 (hub height: 102.5 m)
WTG-5	586738	4626593	Siemens Gamesa 5.0-145 (hub height: 102.5 m)
WTG-6	586005	4626794	Siemens Gamesa 5.0-145 (hub height: 102.5 m)
WTG-9	585960	4628003	Siemens Gamesa 5.0-145 (hub height: 102.5 m)
WTG-10	586052	4628536	Siemens Gamesa 5.0-145 (hub height: 102.5 m)

Figure 3: Example of existing site roads to be upgraded



Figure 4: General project area



Figure 5: Area of coniferous plantation in the project area



Figure 6: Agricultural land on the lower terrain slopes



Non-technical summary- EN

The internal roads access roads will follow existing dirt roads/tracks that will be upgraded or new tracks extended to provide permanent access to the WTG and substation and temporary access to the OHL right of way (see Figure 3. The internal access road will be routed to enable project traffic to avoid the village of Bogoslovec. The OHL will route north to the existing TS Ovche Pole - TS Shtip⁶ OHL. Construction of the OHL requires two road crossing points over regional road A3 (Veles-Kadrifakovo) and A4 (Miladinovci-Sveti Nikole), which pass close to the site. Major components, including the blades, nacelle, tower sections, will be delivered from the Port of Thessaloniki (Greece) approximately 216 km to the project site along route A1 / E75 and Route A3 from Veles to the site entrance (approximately 22 km) from the A1/ A3 intersection. Potable water and other water for the construction process will be trucked to the site. All sewage will be collected on-site and transported to a municipal wastewater treatment plant. All general and hazardous waste generated at the site will be segregated and transported off-site for disposal in a regulated manner.

It is expected that construction works will be performed between July 2021 and November 2020 as set out in Table 2. Major components are planned to be delivered between September and November 2020 (total period of 3 months). The out of region workforce and wider regional workforce will be housed in existing accommodation within the local vicinity of the project site (i.e. within 30 km of the project site).

Table 2: Project schedule

Activity	Actual Date
Building Permit	15 April 2019
Financial approval	June 2021
Contractor notice to proceed	June 2021
Mobilisation on site	July 2021
Site set up	July 2021
Construction upgrade of access roads (WTG and substation)	July 2021 to February 2022
Start of groundworks	February 2022 to 30 September 2022
Construction of foundations for the wind turbine towers	February 2022 to September 2022
Construction of the foundation for the towers of the transmission line	January 2022 to May 2022
Construction of the substation foundations	September 2021 to February 2022
Excavation of trenches for underground cables from the windmills to the substation and after laying them down, backfilling	October 2021 to May 2022
Delivery of abnormal loads (total of 72 movements, 9 per WTG)	
Substation installation	September 2022 to June 2022
T-line installation	May 2022 to October 2022
Finish WTG installation	30 November 2022
Commissioning	June 2022 to November 2022
Start of operation	November 2022

⁶ The route of newly envisaged transmission line will cross the Skopje (Miladinovci) – Shtip highway, as well as with the Veles – Kadrifakovo expressway

The construction workforce is not anticipated to exceed 250 persons in total and will vary at any one time depending on the works. Limited opportunities for local employment are summarised Table 3. A system for enabling local and national companies and personnel to express an interest or submit a curriculum vitae for the purpose of obtaining work will be communicated prior to works commencing. It is not expected that local hiring of unskilled labourers will exceed 20 personnel.

Table 3: Opportunities for local content / procurement

Companies	Personnel
Civil works sub-contractor	Skilled workers (in connection with civil works)
Road works contractor	Unskilled labourers
Concrete batching company	Drivers
Security services	Security personnel
Crane supplier	Cleaners (rented accommodation)
Other	Administrators
Other	Community liaison officer (CLO)

The regular operation of the wind farm will be continuous (24 hours a day, 7 days a week). Staffing needs during the operation phase will be minimal and consist of a maximum of 3 full-time employees for day to day operation, rising to an estimated ten personnel during maintenance periods.

The expected lifetime of the wind farm is 25 years. At this time, options will be considered to replace the WTG with new equipment or to decommission the wind farm and remove all infrastructure from the site.

1.5 Assessment approach



The Project will be developed, constructed and operated following national laws and regulations, the Environmental and Social (E&S) requirements of International Lending Institutions, specifically the International

Finance Corporation (IFC) Performance Standards (PSs) 2012, and Good International Industry Practice (GIIP) as defined in World Bank Group Environmental, Health and Safety (EHS) Guidelines, specifically EHS Guidelines for wind energy (2015)⁷. In accordance with the Law on Environment (Official Gazette of RM No. 53/05 as amended) and the Rulebook on the content for requirements that should be observed in an Environmental Impact Assessment (EIA) Study (Official Gazette No. 33/06), the Project has submitted an EIA (covering both the wind farm and the transmission line) in 2016 for which approval has been granted



- 1) Contribute to the renewable energy goals set out in the Macedonia Energy Development Strategy (2030)
- 2) Increased use of non-renewable sources to improve energy diversity
- 3) Reduce reliance on imported energy and improve energy security
- 4) Contribute to goals for limiting greenhouse gas emissions
- 5) Provide socio-economic benefits to local community

⁷ https://www.ifc.org/wps/wcm/connect/2c410700497a7933b04cf1ef20a40540/FINAL_Aug%2B2015_Wind%2BEnergy_EHS%2BGuideline.pdf?MOD=AJPERES

Non-technical summary- EN

by the Ministry of Environmental Planning and Protection (MoEPP). The Study was drafted by a multidisciplinary team of experts and professionals led by EVOLVING DOO, Skopje.

For each topic, the significance of the potential impacts has been assessed considering:

- Type and nature of impact (positive / negative);
- Scope (e.g. local, regional, global);
- Duration (continuous / temporary);
- Time period (immediate / delayed);
- Reversibility (reversible / irreversible); and
- Likelihood to occur (none, small, average, high).

The resultant impact significance has been categorised as:

- 1 (minor): unimportant impact, with no damage to the environment⁸;
- 2 (minor): measurable impact, but with proper planning it is not likely to cause damage to the environment;
- 3 (moderate): significant impact but can be controlled if relevant mitigation measures are implemented;
- 4 (major): impact that will be harmful to the environment; and
- 5 (major): irreversible impact, i.e. after which the environment cannot be returned to the previous state; and may need significant re-design or alteration of the design to mitigate impacts to acceptable levels.

Positive impacts were also considered, and these are summarised in Box 2.

The Project collected baseline information on birds and bats, ecology and livelihoods, including:

- One-year bird and bat baseline study (October 2016 and September 2017) and collision risk assessment⁹;
- Six-month large bird survey (March through August of 2018) and collision risk assessment¹⁰;
- Flora and fauna baseline Study (August to September 2016); and
- Abnormal load transportation assessment (November 2018).

1.5.1 Stakeholder participation and consultation

An important part of the impact assessment process has been consultation with local communities and other interested groups (collectively known as stakeholders). The Project has held two public hearings, a community meeting, and one-on-one meetings with landowners and government officials. Key concerns and comments raised during the meetings related to how traffic would be routed to minimise impacts to the village of Bogoslovec and potential opportunities for local people (business or employment) during the construction phase. The Project has established a communication plan (referred to as a Stakeholder Engagement Plan) that includes

⁸ For all categories the term “environment” encompasses physical, biological and socio-economic impacts including those that may affect livelihoods

⁹ Skorić, S., and M. Raković, 2017. Wind Park “Bogoslovec” Bird and Bat Survey – Final Report. Produced for THOR IMPEX D. O. O. E. L., Skopje

¹⁰ Skorić, S., and M. Raković, 2018. Wind Park “Bogoslovec” Additional Report – Large Raptors Survey. Produced for THOR IMPEX D. O. O. E. L., Skopje

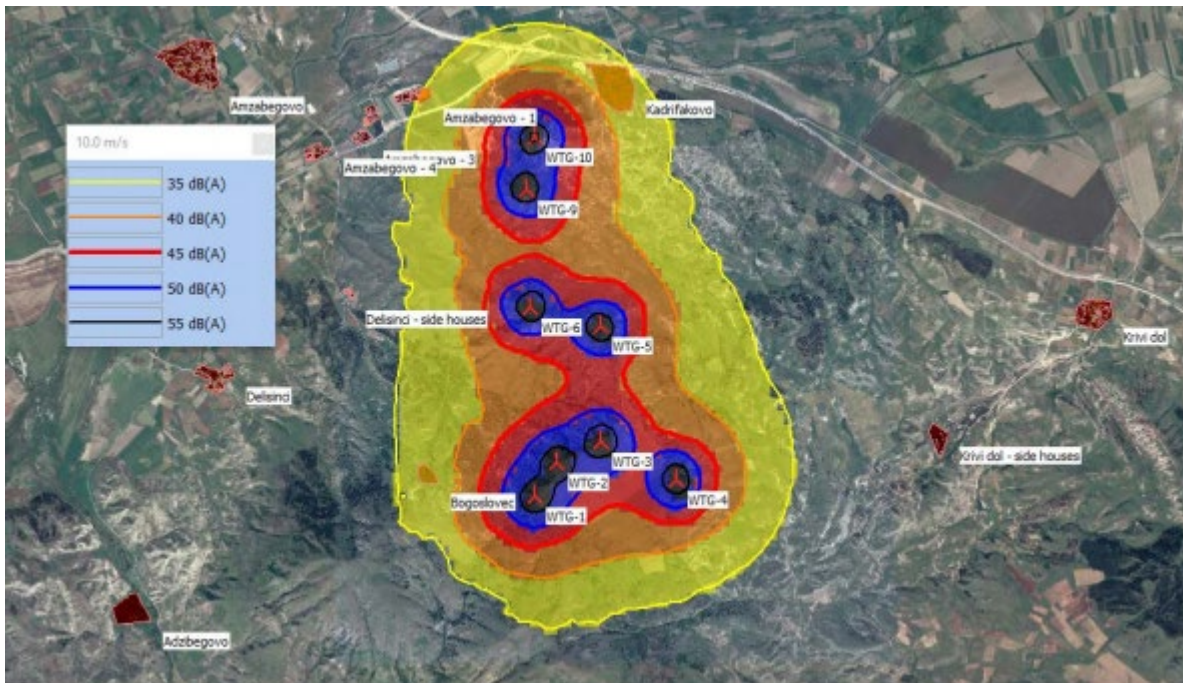
a detailed communication program to manage community contact and relations going forward. Any concerns or questions the community may have can be raised to the Project via the “community grievance mechanism” which sets out how the Project will receive, investigate and respond to all concerns. The community grievance mechanism is described in Box 3 below.

1.6 Summary of environmental and social effects

1.6.1 Noise

The noise assessment, performed by Megajoule¹¹, used wind turbine manufacturer data and wind modelling software to calculate the noise emissions at the nearest noise-sensitive receptors. Noise emissions were calculated for wind speeds between 8 m/s and 10 m/s considering 10 m/s as the level above which noise from a WTG is masked by the ambient wind noise. Noise levels above 40 decibels (dB) (A) were considered significant following European standards. As illustrated in Figure 7, only Kadrifakovo shows values above 40 dbA (40.2 dbA) using the Siemens Gamesa 5.0MW WTG. Considering the WTG’s will be de-rated to 4.5MW at all times, no noise-sensitive areas are predicted to receive noise impacts above the limit of 40 dB (A). Two noise-sensitive areas (Bogoslovec and Amzabegovo-1) are predicted to have maximum noise levels between 35 dB (A) and 40 dB (A). Considering the predicted values, it is unlikely the Project will cause significant noise issues at nearby residential receptors.

Figure 7: Sound levels at 10 m/s wind speeds for BWF Siemens Gamesa turbines(5MW¹²)



Source: BWF Noise assessment, Megajoule, on behalf of Thor Impex d.o.o.e.l (18MJHRR010/04)

¹¹ BWF Noise assessment, Megajoule, on behalf of Thor Impex d.o.o.e.l (18MJHRR010/05) July 2021

¹² The actual operating rating of the WTG will be 4.5MW.

1.6.2 Shadow Flicker

The shadow flicker assessment, performed by Megajoule¹³, used wind turbine manufacturer data and wind modelling software to calculate the shadow flicker impacts at the nearest houses. Macedonia itself has no standard for shadowing, so the project applied German guidelines¹⁴ to evaluate the potential worst-case impact; specifically, the project should limit flicker to:

- A maximum of 30 hours per year of astronomical maximum shadow (worst case)¹⁵;
- A maximum of 30 minutes per day of astronomical maximum shadow (worst case) as acceptable; and
- If automatic regulation is used, the real shadow impact must be limited to 8 hours per year.

Figure 8: Depiction of how shadow flicker may occur during periods when the sun is behind the WTG



The results conclude that no locations will receive more than 30 hours per year or 30 minutes per day as required by IFC EHS guidelines for wind. Furthermore, no locations are predicted to receive more than 8 hours of real-time flickering (as required by the more stringent German guidelines), with the villages of Krivi dol, Delisinci and Dobroshani being too far away from any WTG to have any shadowing effect.

Figure 9: Example of WTG blade being transported to site via abnormal load transporter



The results indicate that shadow flicker impacts will meet IFC EHS Wind Guidelines and are likely to meet the more stringent German guidelines under actual operational conditions¹⁶.

1.6.3 Traffic and transportation

Traffic and transportation risks are limited to the construction phase. These risks may include community health and safety risks from the transportation of large loads and increased vehicle movements during peak construction periods. The traffic impact assessment and consultation with local villagers has identified the need to avoid

¹³ BWF Shadow (flickering) assessment, Megajoule, on behalf of Thor Impex d.o.o.e.l (18MJHRR011/02, 21 June 2019

¹⁴ At present, only Germany has detailed guidelines on limits and conditions for calculating shadow impact. These are found in "Hinweise zur Ermittlung und Beurteilung der optischen Immissionen von Windenergieanlagen" (WEA-Shattenwurf-Hinweise).

¹⁵ IFC EHS Wind Energy Guidelines (2015) refer only to predicted duration of shadow flicker effects experienced at a sensitive receptor. These guidelines state that a shadow flicker impacts should not exceed 30 hours per year and 30 minutes per day on the worst affected day, based on a worst-case scenario.

¹⁶ "Worst case" modelling makes assumptions about the house size, shape and orientation of windows and average monthly sunshine probabilities (based on real data from the nearest measurement station located in Skopje which is 38 km away). Actual impacts are expected to be less in most cases given natural shading, the actual locations of windows and time of day when the impact is predicted.

routing traffic through the village of Bogoslovec, and this is set out in the project management plans. In addition, the project will employ GIIP to minimise traffic impacts, including restricting vehicle movements to periods when traffic is light, developing a site traffic management plan and requiring all drivers to adhere to a driver's code of conduct.

1.6.4 Biodiversity

During the construction phase, there are potential impacts associated with the disturbance and clearance of Natural and Modified Habitats during construction. The EIA has identified this as a minor to moderate impact, and a Biodiversity Management and Monitoring Plan (BMMP) has been prepared that sets out requirements for clearance of habitat; management of soil erosion and surface water run-off; replanting obligations, and management of the spread or introduction of invasive species. Specific requirements include the prohibition of habitat clearance works during the bird nesting season (01 March to 30 September), a requirement for the contractor to prepare a site clearance and rehabilitation plan before works commence, and a complete ban on hunting, poaching and illegal trade of any species. To address the impacts of permanent loss of Natural Habitats, the Project will develop a Natural Habitat Compensation Plan and undertake compensation planting, including replacing any trees removed at a ratio of 10:1 and an assessment to verify "no-net-loss".

During the operation phase, collision risk for birds and bats has been identified as one of the major impacts. Baseline data studies followed by statistical studies have been performed. The studies have highlighted two priority species for particular attention during the bird and bat monitoring program: the Egyptian Vulture (*Neophron percnopterus*, IUCN¹⁷ Endangered) and Eastern Imperial Eagle (*Aquila heliaca*, IUCN Vulnerable). Bird and bat monitoring will be undertaken for up to ten years of the project, including a detailed monitoring program for year one followed by a less intensive program focused on priority bird species from year 2 and 3 and up to year 10 (depending on the outputs of each annual review). In addition, bird diverters will be placed on certain sections of the OHL to minimise the risk of collisions.

The Project will implement a Biodiversity Adaptive Management Plan (BAMP) for all species of conservation concern and has set impact thresholds that, if exceeded, would warrant additional mitigation based on a combination of scientific, regulatory, and social significance criteria. These threshold criteria will be agreed upon with relevant external stakeholders before the commencement of operation. The individual species identified as BAMP receptors include all species listed as trigger species for the two IBA, as well as any species documented at the Project site during the baseline study that has a global IUCN status other than "Least Concern".

The Project does not trigger Critical Habitat as defined by IFC PS6¹⁸. Still, the Project is located with an area of special conservation interest defined by the River Topolka-river Babuna-river Bregalnica Important Bird Area (IBA) and Ovče Pole IBA. The Project will act in a manner consistent with the objectives of conservation

¹⁷ IUCN – International Union for Conservation of Nature maintains a list of threatened species known as the 'red list' which is a comprehensive information source on the global conservation status of animal, fungi and plant species. <https://www.iucnredlist.org/>

¹⁸ Critical habitats are defined as areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered and/or Endangered¹¹ species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes (IFC PS6)

management within an Emerald site¹⁹. The Project will define an appropriate conservation program in its corporate social responsibility (CSR) plan to contribute to effective management of the area aiming to align with Government recognised plans, be developed in consultation with external stakeholders and include support for programs to promote and enhance the conservation aims and effective management of the area to support the long-term survival of species and habitats requiring specific protection measures.

1.6.5 Visual impacts

Once operational, the wind farm and the OHL will have a moderate impact on the landscape being located in an elevated position with views in all directions. The WTG will be visible to the local population and road users. There is limited, if any, natural screening in the area. Replanting temporary work areas immediately following construction will assist in minimising scarring on the landscape.

1.6.6 Land acquisition

The Owners' policy on acquisition of land or servitudes (either through purchase or long-term lease agreements) is to strive for agreed arrangements, including financial compensation under the Expropriation Law, without requiring the Government to mandate a settlement agreement. The Owner has a strong commitment to avoid adverse impacts on communities and persons that use that land to improve the local livelihoods and standard of living. The Project has followed requirements of national law (as set out in the Law on Expropriation²⁰) and has also considered how this aligns with the requirements of *IFC PS5: Land acquisition and involuntary resettlement*²¹. All private land acquisition and servitude agreements (approximately 2.5% of the total land requirement) have been agreed through Government-led hearing as defined under the Law of Expropriation without resorting to mandated settlement arrangements defined by the Government of Macedonia under the Law of Expropriation. Landowners will be paid for the land before the title can be officially transferred to the Project and work can commence. Agreements with the Government (equating to 97.5% of the total land requirements) will be via a servitude agreement or long-term lease agreement. One land-user leases land from the Government. In this case, the existing land lease agreement will be re-negotiated minus the required land parcel. The Project will assist the lessee in obtaining land-based compensation within the national framework if required and implement supporting compensation measures. There are no identified owners with recognisable claims to the land, illegal users of public or private land. Large illegal settlements do not occupy the site, neither are there individuals with multiple or competing illegal claims to land in the project area. No vulnerable groups are identified as residing or using the land. No future land needs are anticipated. The project will implement an ongoing communication program with landowners, including pre-construction engagement and ongoing regular communications regarding upcoming project activities. The project will also communicate to all project-affected people, including landowners and land users the process for raising concerns or questions. Monitoring of adequate restoration of land or compensation for loss of livelihoods will be undertaken regularly.

1.6.7 Community health and safety

¹⁹ Emerald sites area a regional network of ecologically important areas, established in Europe and North Arica as a result of the Bern Convention, the Ovče Pole IBA and the Bogoslovec conservation area are noted as "officially nominated candidate Emerald sites".

²⁰ Law on Expropriation 1995 "Official Gazette of Republic of Macedonia" No. 95/12, 131/12, 24/13, 27/14, 104/15

²¹ IFC Performance Standard 4: : Land acquisition and involuntary resettlement (January 2012)

Several construction activities (wind farm / OHL) could potentially impact the local community, including infrastructure and equipment design and safety; potential exposure to hazardous materials and substances; traffic-related accidents; positive impacts on local income-generating opportunities; potential for increased exposure to communicable diseases; and potential risks to the local community arising from the Project security arrangements. Interactions with the local community must be managed sensitively. The Project has assessed that the security risk has a moderate impact potential during the construction phase, with other impacts being negligible risk. The project management plans have placed several requirements on the Owner, Contractor and their sub-contractors to address potential impacts to the community, including:

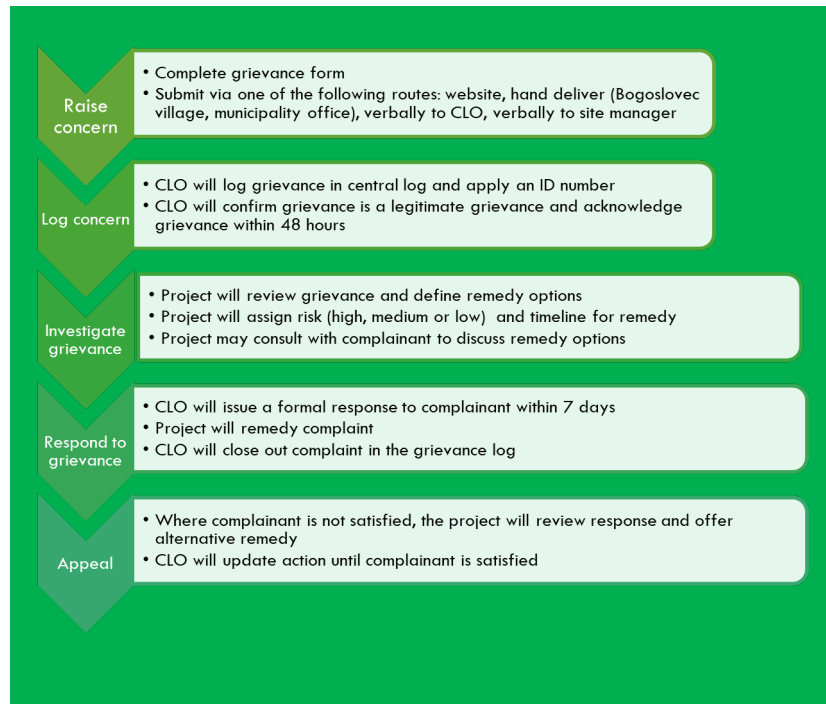
- The need for all workers and security personnel to adhere to a worker/security personnel code of conduct;
- To establish and implement a community grievance mechanism for transparently addressing the concerns of a community member or other stakeholders (see Box 3);
- Requirement for the Contractor to perform a security risk assessment and develop a project-specific security management plan before work commences; and
- The need to establish an Emergency Preparedness and Response Plan (EPRP).

Specific measures for managing security risks include i) requirements to vet security personnel before they are hired; ii) the need for clear instruction on how security personnel will respond to an incident, and iii) a protocol for interaction with the public security force. The use of force by private security is only sanctioned for preventive and defensive purposes in proportion to the nature and extent of the threat. Firearms will be prohibited at all times.

Overall the labour workforce requirements are unlikely to exceed a total of 250 workers during the construction phase. It is not anticipated that the volume of skilled workers from outside Macedonia will place an undue impact on the region's existing infrastructure (housing, schools, utilities), or natural resources, and all changes will be short-term and reversible.

There is potential for an increased risk in the spread of communicable diseases and increased rates of illicit behaviour and crime resulting from the worker influx; however, the volume and skilled nature of the incoming

BOX 3: COMMUNITY GRIEVANCE PROCEDURE



workforce reduces the risk. All workers will be required to sign a worker's code of conduct and be aware of the disciplinary actions taken if their conduct is not in keeping.

1.6.8 Procurement, labour management and worker health and safety

The Project has a clear commitment to promoting fair labour and working practices throughout the lifecycle of the Project. To manage this, the Project has developed a: labour commitment policy, workers' and security personnel' code of conduct, and a labour management plan (LMP). The Project will require its contractors and subcontractors to adhere to national labour regulations and the requirements of *IFC PS2: Labour and working conditions*; at all times. IFC PS2 recognises that the pursuit of economic growth through employment creation and income generation should be accompanied by protection of the fundamental rights of workers, including promoting diversity, fair pay, rest periods, non-discrimination, working time regulations and overtime restrictions.

Bogoslovec wind project: Local Content Policy

“Thor Impex is committed to developing renewable wind energy in a manner that maximises project benefits by integrating local content into the project supply chain”
(extract from the local content policy accessible at www.wpbogoslovec.com)

Our review of the primary supply chain has not identified any supply chain risks concerning child labour, forced labour, health and safety or habitat degradation in the supply chain.

Requirements for maintaining worker safety, e.g. while working at heights, are defined in an Occupational Health and Safety (OHS) plan. All workers will have access to a workers' grievance mechanism, which is an essential process by which workers can access remedies for poor worker practices.

1.6.9 Decommissioning

A decommissioning management plan will be prepared to manage environmental and social risks associated with the decommissioning phase. With prior consultation with the Ministry of Environment and Physical Planning (MoEPP), the Owner will prepare technical documentation that will plan the necessary activities for reducing the impact upon eventual decommissioning of the facility. In preparing the decommissioning program and plan, the following guiding principles will be applied at all times:

- Safety – all decommissioning works will be undertaken following a defined occupational health and safety plan;
- Stakeholder consultation - communication with local communities via the existing stakeholder engagement plan, will be undertaken from the outset; this will include application of the waste hierarchy at all times (avoid, re-use, recycle); and
- Good International Industry Practice (GIIP) – GIIP will be applied at all times for the management of environmental and social impacts considering reasonable costs.

1.6.10 Other impacts

No indigenous peoples as defined by IFC PS7 have been identified in the project area of influence. The Project acknowledges the presence of ethnic minorities in the project area of influence, including citizens of Macedonia with Albanian, Aromanian (Vlach), Turks, Serbs, Bosniak and Roma heritage and where these ethnic groups are

identified through the stakeholder engagement process, communication of key information in relevant languages can also be accommodated.

No significant cultural heritage is anticipated in the project area. A chance finds procedure has been developed if unexpected finds are uncovered during groundworks.

Electromagnetic effects (from OHL and the wind farm operation) have been assessed as negligible based on the proximity of nearby receptors.

2 MITIGATION AND MANAGEMENT OF IMPACTS

Thor Impex has developed an environmental and social management system (ESMS) to oversee the project's development, construction, and operational activities. The ESMS comprises Owner policies, project assessment documentation, project-specific management plans, supporting thematic sub-plans and reporting templates for monitoring progress. The Owner ESMS will be supported by contractor management plans outlining procedures for implementing the Owner's requirements. The ESMS framework is aligned with the requirements of ISO14001:2015 Environmental management, ISO 26000:2010 Social responsibility, and ISO 45001 Occupational Health and Safety managements. Underpinning the project plans are several project policies that set out the core values and principles of the Project:

- Environment and Social Policy;
- Health, Safety and Security Policy;
- Labour Commitment Policy;
- Code of conduct – workers;
- Code of conduct – security personnel; and
- Local content policy.

2.1 Good International Industry Practice (GIIP)

For both the wind farm and the OHL, the project management plans outline GIIP in the following areas:

- Discharges to surface water or ground;
- Fugitive dust emissions/emission from project vehicles;
- Construction noise (vehicles);
- Waste management (general and hazardous);
- Hazardous materials management;
- Spill prevention; and
- Emergency preparedness and control.

At all times, the Contractor will be required to implement GIIP for all construction activities. The Owner has developed an audit and monitoring program to oversee contractor performance at all times.

2.2 Measure to protect local community and workforce

The Project will implement the following measures to protect the community and workforce:

- Require all traffic to be routed around the village of Bogoslovec;
- Communicate casual or unskilled employment opportunities in advance of the start of works to set clear expectations on numbers and reduce the likelihood of opportunistic in-migration;
- Disclose local content policy – which sets out project preference for recruiting from the available local workforce where possible;
- Require all workers to sign “code of conduct – workers”;
- Require all security personnel to sign “code of conduct – security personnel”;
- Require all contractors and their subcontractors to adhere to the Thor Impex “Labour commitment code,” which aligns with national regulation and IFC performance standard 2 on labour;
- Require all contractors and their subcontractors to adhere to the “labour management plan” which sets out requirements for contractors, including disciplinary actions;
- Disclose a “community grievance mechanism” and stakeholder engagement program before works commencing that sets out how the community can seek remedy for any concerns or grievances they have concerning the Project; and
- House workers from outside the project area or municipality in accommodation away from the immediate community (village of Bogoslovec), thereby reducing potential social tensions.

3 CONCLUSION

Based on the assessment documentation prepared to date and the management plans proposed, it is concluded that the Bogoslovec wind farm and the associated overhead line can be developed in a manner that safeguards environmental and social receptors and aligns with national environmental law and international standards for environmental and social protection.