1 NON TECHNICAL SUMMARY

1.1 INTRODUCTION

This Non Technical Summary (NTS) provides an overview of the findings of the Environmental and Social Impact Assessment (ESIA) Reports relating to the Chirnogeni Wind Farm (80 MW), and the rehabilitation of existing 110 kV high-voltage transmission line (HV line) connecting the wind farm with the national power grid (hereinafter collectively referred to as "the Project").

The purpose of the ESIA Reports is to identify the environmental and social changes that are anticipated to occur as a result of the Project, to evaluate their importance and, where significant adverse changes are identified, to propose measures that can be taken to avoid, reduce or compensate for those changes. The ESIA Reports also describe the main alternatives considered by the developer in planning the Project and examine the cumulative impacts of the Project.

These ESIA Reports were carried out in accordance with international standards, as reflected in the policies and guidance of the European Bank for Reconstruction and Development (EBRD) Environmental and Social Policy 2008.

The project will be developed by EP Global Energy (EPGE), part of The Paraskevaides Group.

Paper copies of this NTS and the associated ESIA Reports are available for viewing at EPGE offices located at the following address:

8 Alba Iulia Square, Sect. 3; Bl.I-7; flat 26; Bucharest; Romania
Email: office@ep-energy.eu
Tel: + 40 21/ 322 66 67; Fax: +40 21/ 322 66 69

and also at the following addresses:

47 Mihai Viteazu Street, Constanta City, Constanta County, Romania

16 Albinelor Street, Chirnogeni Commune, Constanta County, Romania

1.2 SITE SELECTION AND DESIGN CRITERIA

The proposed site was considered a feasible location for the Project based on the following attributes that were identified at an early stage:

- *the site is located outside any protected areas for nature conservation or cultural heritage;*
- *there are no significant sensitive noise receptors nearby;*
- *the site has good wind resources;*
- *there are existing agreements for connection to the national power grid at this site;*
- *the site has good access via the existing public roads;*
- *no other significant environmental sensitivities were identified in close proximity.*

The wind farm location and design was influenced by consideration of environmental issues such as: avoidance of water courses and wet areas, distance of the site to the nearest Natura 2000 areas and residential houses, and interaction between turbines to minimise losses. The technical design will incorporate state of the art turbine technology.

1.3 PROJECT DESCRIPTION

The nearest wind turbine within the wind farm site is located approximately 2.5 km to the west of Chirnogeni Village. The wind farm will be located partly within Independența Commune and partly in Chirnogeni Commune, Constanța County, Romania.

Further to the wind farm itself, in order to allow connection of the wind farm to the national power distribution grid, an existing 110 kV high voltage overhead transmission line (HV line) between Chirnogeni-Cobadin-Basarabi (approximately 45 km) will be rehabilitated.

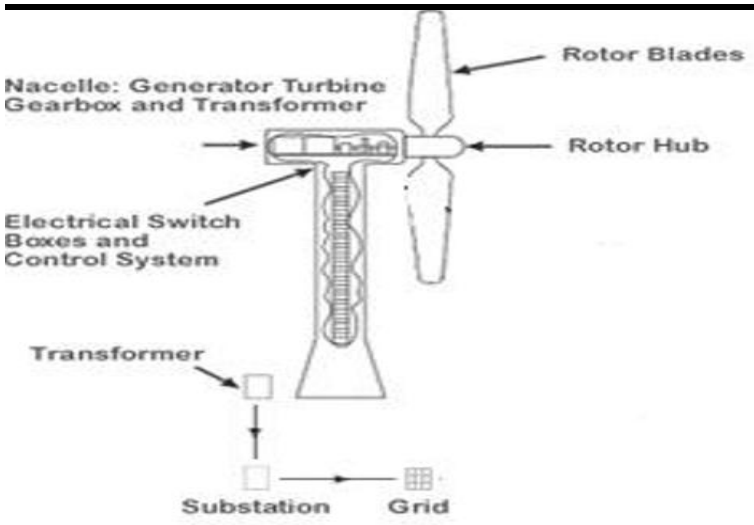
Annex 1 shows the components of the Project, neighboring villages and communes as well as key features of the area.

The main components of the Chirnogeni Wind Farm 80 MW are listed below;

- *Installation of 32 wind turbines and their foundations, each with a capacity of 2.5 MW (a diagram of a wind turbine is presented within figure 1.2).*
- *Construction of a Project Substation 20/110 kV with a capacity of 80 MW and a permanent pole to support a weather station within the wind farm site boundary.*
- *The organization of a temporary construction compound within the wind farm site boundary.*
- *The construction of permanent concrete foundations at the site of each turbine which will be required for the installation and maintenance of the turbines.*
- *The construction of permanent crane pads.*

- *The upgrade of approximately 13 km of existing exploitation roads to the site and the construction of a permanent network of approximately 12 km of access roads (between the turbines and exploitation roads).*
- *Installation of a network of underground medium voltage (20 kV) electrical connection cables (approximately 26 km) to link the turbines to the Project Substation 20/110 kV.*
- *Construction and operation of underground transmission lines (110 kV) of 4.47 km from the Project Substation to the (existing) Chirnogeni Substation 110/20 kV which connects to the Power Distribution Grid owned by SC Enel Distribuție Dobrogea SA ("ENEL").*
- *Installation of equipment in the existing Chirnogeni substation to enable connection of the wind farm.*

Figure 1.2 Diagram of a wind turbine



The main works to be performed as part of the rehabilitation of the existing HV line are:

- *Works required for the 110/20 kV transformer stations (installation of necessary additional electrical equipment):*
- *Works required for the 110 kV overhead lines:*
  - *Installation of cables between Basarabi - Cobadin;*

    - *Conversion of the existing 110 kV overhead electrical lines currently used as 20 kV lines back to the initial specifications for 110 kV use by replacing isolators along the 45 km corridor;*
- *Works required for the 20 kV overhead electrical lines:*
    - *Transfer of the existing 20 kV connections between Cobadin - Chirnogeni;*
    - *Installation of a new 20 kV underground transmission line in the Basarabi area, which will take over the role of the corresponding section of the 110 kV overhead electrical line between Cobadin - Basarabi currently operated at 20 kV.*

The rehabilitation works will be carried out by the owner of the facilities, S.C. ENEL Distributie Dobrogea S.A. ("ENEL") using an approved subcontractor. However, as the rehabilitation of the transmission line was considered part of Project's area of influence, the associated impacts have also been assessed as part of a Supplementary Information Report to the Chirnogeni Wind Farm 80 MW ESIA. This NTS covers these aspects as well.

The Chirnogeni Wind Farm 80 MW site is approximately 16.9 km^2 which includes the project footprint, the wind safety area and a development buffer area. The footprint comprises the total area that was rezoned to industrial use, namely 0.124 km^2 (this area will be occupied by the turbines, the project substation, access roads and permanent crane pads). The HV line which will be rehabilitated is approximately 45 km long. A new 20 kV underground transmission line will be constructed between Cobadin and Chirnogeni and will be 4.7 km long.

The construction of the wind farm will take approximately 18 months and will comprise the following key phases which may overlap: civil works, logistics, electrical works, turbine installation and commissioning and restoration of the area.

Construction of the wind farm will be associated with an assumed worst-case peak of approximately 772 one-way truck movements and 600 one-way car movements per month. Based on the construction schedule calculation a 6-day working week, it is estimated that there will be a worst-case peak of approximately 58 two-way truck movements per working day. Based on the same calculation methodology, it is assumed that there will be 44 two-way car movements per day, which is estimated to remain unchanged throughout the entire 18-month construction period. The trucks referred to above include:

- *Restricted Access Vehicles (RAV) longer than 19 m or heavier than 42.5 tons, which will be used to transport wind turbine components; and*
- *Semi-trailers used to transport pad mounted, foundation cages, reinforcing steel for foundations, transformer for the 80 MW Project substation, miscellaneous Project substation equipment; and*
- *cement trucks.*

At the end of the construction period the portions of the site not occupied by turbines and other infrastructure will be restored to agriculture land according to a restoration plan to be included as part of the construction permit documents.

The execution of the works to rehabilitate the existing HV line is anticipated to take approximately 12 months and to be completed prior to the commissioning of the wind farm.

For a worst case scenario, construction traffic volumes associated with the rehabilitation of the HV line are expected to be less than half of what was assumed for the wind farm. Trucks which will be used will include cement trucks and semi-trailers carrying miscellaneous equipment for the three existing substations, miscellaneous items such as cables, wires etc., construction equipment (trenching & smaller pieces).

The construction stage of the project will involve an average daily workforce of 75 workers (50 for the construction of the wind farm and 25 for the rehabilitation of the HV line), 30% of which will be employed from the local available manpower.

Construction permit documents (technical design and details of the execution) will be developed and will include detailed method statements for particular works. The construction works will be controlled by the State Inspection in Construction - Constanta County Local Inspectorate.

1.4 SCOPING AND CONSULTATION

The range of impacts addressed in the ESIA Reports was determined through a Scoping procedure. Scoping involves the consideration of Project activities, the features of its surrounding environment and identification of where impacts may occur. The results of the Scoping exercise were presented in the Technical Memorandum document for the wind farm as prepared in February 2009, according to the project details and legislation in force at that time. This Technical Memorandum is attached to the ESIA prepared for the Chirnogeni Wind Farm 80 MW.

Preliminary consultation meetings with the local authorities were undertaken in November 2008. Consultation meetings with local communities were undertaken in March 2009. The findings of these consultations were fed into the scope of the ESIA Reports.
The ESIA Report was disclosed to all the inhabitants of the affected communes (Chirnogeni, Independenta, Cobadin, Basarabi) in August 2011 and is planned to be disclosed also to others stakeholders (e.g. local authorities and non-government organisations) in September 2011. However, consultation is planned to continue throughout the project lifetime and the methods and stages at which this will occur are outlined in the Stakeholder Engagement Plan (SEP).

1.5 BASELINE OVERVIEW

The Chirnogeni Wind Farm site is located on arable farmland, in the Negru Voda plateau, approximately 35 km to the west of the Black Sea coast and 13 km north of the Bulgarian border. The Chirnogeni-Cobadin-Basarabi HV line is located on agricultural land approximately 2.4 km to the west of Chirnogeni Village (Chirnogeni Commune) and approximately 5 km to the southeast of Movila Verde Village (Independența Commune). The Project site and the local area is characterised as follows:

- *the Project site itself is flat, open, agricultural terrain, surrounded by very gently sloping hills;*
- *the soil at the Project site is Chernozem which is common in the region and is quite fertile. There is no history of soil contamination known within the Project site.*
- *the nearest residential area to the wind farm is Chirnogeni Village located approximately 2.5 km to the east of the site. The nearest residential area to the HV line is Ciocarlia de Sus Village which is adjacent to a section of the line;*
- *no protected sites are located within the wind farm site boundary; however, the existing HV line crosses SCI Dumbraveni-Valea Urluia-Lake Vederoasa and going along the existing national road DN3.*
- *small communes and settlements typically comprising single storey rural dwellings with basic amenities exist within the Project area;*
- *surrounding open farmland is cultivated with cereal crops and has a low biodiversity value with very few hedgerows or trees present along the existing HV line; the only other habitats are agricultural drains and field and road margins which support common species of flora and birds;*
- *no protected species of flora or mammals were recorded on site;*
- *field surveys indicated low levels of activity on the site from some important species of birds;*
- *the closest large surface water bodies to the wind farm are Plopeni Lake located at approximately 6.9 km to the north, and Negreşti Moor approximately 7.4 km also to the north;*
- *the existing HV line crosses Negresti Moor; the distance of the nearest pole to the moor is approximately 5 m. However, no works will be performed to the poles as part of the rehabilitation of the HV line;*
- *the groundwater table starts at depths between 35- 40 m below ground level. Wells drilled for drinking purposes by local communities are between 35 m and 300 m below ground level.*

1.6 SUMMARY OF IMPACTS

1.6.1 Introduction

The ESIA Reports assess (1) the impacts of the Chirnogeni Wind Farm 80 MW, during construction, operation and decommissioning and (2) the impacts of the rehabilitation of the 110 kV HV line. The HV line is in place and operated presently. Once the rehabilitation works have been completed and the HV line is back in operation, there will be no changes induced by the wind farm in terms of operating the HV line.

These impacts are summarised below. Where measures are proposed to mitigate adverse impacts or to provide environmental benefits, key points are noted.

1.6.2 Soils and Groundwater

Any compaction of the soil from the movement of heavy vehicles and machinery during construction will be mitigated through implementation of best practice soil handling techniques. Potential contamination to soil from refuelling activities will be mitigated by the restriction of these activities to the construction camp which will be located on impermeable hard standing.

By their nature, construction environmental impacts are temporary and all changes to the soil are reversible. An important mitigation measure which will be applied is to store topsoil and soil separately in designated areas of the construction compounds, in such a way that it is not mixed with subsoil or trafficked on by vehicles. These areas will be located as close to the sources of extractions (for example, along of roads and platforms) and topsoil will be managed according to the local standards and practices. Overall, no significant impacts to soils are predicted during the construction of the wind farm and rehabilitation of the HV line.

Leaks or spills of diesel or lubricants from equipments or machinery during construction period may cause potential impacts to the groundwater. Measures will be implemented in order to minimise any adverse impacts such as the use of cut off ditches in order to prevent water from entering excavations. No significant impacts to groundwater are predicted to occur as a result of the construction of the wind farm and rehabilitation of the HV line.

During operation of the Chirnogeni Wind Farm 80 MW potential impacts to groundwater may result if the contaminants reach the groundwater resources through a pathway which could be created by the installation of turbines with deep foundations. However, no existing contamination has been identified and the foundations will not be deeper than 2.5 m below ground level (well above the 35-40 m

depth where the shallow groundwater is estimated to be present(1)). Additionally, the use of potential contaminants during maintenance activities will be strictly controlled within standard turbine maintenance procedures. Therefore no significant impacts to groundwater are anticipated during operation.

1.6.3 Hydrology

The only surface water identified within close proximity of the wind farm site is an agricultural field drain, located close to the positioning of the underground transmission lines.

The construction method used for undercrossing the agricultural field drain will be horizontal directional drilling followed by complete restoration of the area to initial conditions. The construction works will minimally interfere with the agricultural field drain and any potential effects will be temporary.

During operation, the wind farm will have no water demands and no discharges will be made. The hardstanding areas (including new access roads, crane pads and turbines bases), although small in size as compared to the total wind farm site area, will minimally increase impermeable areas, resulting in a small increase in runoff rates and peak flood flows across the site. In order to attenuate the potential flood peaks, the runoff from the larger hard standing areas will be drained to the surrounding land, acting as a buffer zone to slow runoff. Roadside drains will be designated to avoid disturbance to the natural hydrology and reduce the potential impact on the drainage pattern. No significant impacts are anticipated to run-off rates or drainage patterns during the operation of the wind farm.

1.6.4 Air Quality

During the period of construction of the wind farm and the rehabilitation of the HV line, air emissions will consist of dust generated from construction/rehabilitation activities (e.g. land moving, dust from construction vehicles) and combustion related emissions from vehicles and construction equipment. Dust control measures will be employed during construction /rehabilitation and overall no significant adverse impacts are predicted from dust generation.

As combustion emissions from construction traffic will be distributed across the travel route, and are not large in nature, these impacts are not anticipated to impact regional air quality.

(1) Geotechnical study which the Romanian company SC Geotec Consulting SRL performed on the project area in April-May 2009

During operation, the wind farm itself will not have any source of emissions, so no pollutants will be released into atmosphere. Operational traffic emission impacts associated with the wind farm will be insignificant due to the low numbers of vehicles accessing the site for maintenance.

Every unit of electricity produced by wind power has the potential to replace a unit of electricity generated by other means. As such, wind farm development reduces greenhouse gas emissions and other emissions, which can cause regional and local air pollution (mainly sulphur and nitrogen oxides). In addition to benefits from the overall emissions reductions, acid deposition induced by sulphur dioxide and nitrogen oxides will also decrease. By reducing the regional emissions of these pollutants, impacts from acid precipitation will also be reduced.

1.6.5 Noise and Vibration

Construction/rehabilitation activities at the Project site and the associated change in road traffic noise level will be located at a sufficient distance from dwellings to avoid significant noise impacts on residents.

Noise levels are expected to be approximately 48 to 50 dB LA90, 10-minute, and at a distance of 100m and in the approximate range of 38 to 40 dB dB LA90, 10-minute at 500m. To place this into context, road traffic noise at approximately 20m from a busy highway would be expected to be approximately 70 dB(A); whilst conversation at around 1m might be approximately 50 dB(A).

The closest site neighbour to the wind farm is Chirnogeni, and this is approximately 2.4 km to the east of the site. Noise impacts from the operation of the wind farm are not predicted.

1.6.6 Traffic and Transport

Wind farm construction traffic will access the site via national road (DN 38), followed by either county road DJ391/DJ392 or Commune Road Dc16. The final route will be discussed and agreed in consultation with Constanta County Council and the National Highway and Roads Company prior to construction. The traffic related to the rehabilitation of the HV line will use the national road (DN 3), followed by county roads DJ391/DJ392.

Traffic data was gathered from Constanta Country Roads and Bridges Autonomous Administration for national and county roads DN 38, DJ 391 and DJ 392 (which are

representative of the local roads likely to be used during the construction of the wind farm).

With the implementation of a combination of mitigation measures which will be set out in a Traffic Management Plan, including the use of minibuses to transport construction workers to the Project site, the impact of the construction traffic flows to the peak hours will be reduced to a minor adverse impact to local or county roads.

Minor adverse impacts are likely to remain to local farmers with regard to access to land in particular during sowing and harvesting periods. However, the construction schedule and access will be coordinated with the local farmers.

Traffic during the construction of the wind farm/rehabilitation of the HV line is not anticipated to have significant impacts to the local road infrastructure (county and commune roads) and or traffic safety measures. No significant impacts are anticipated to occur to the local road network as a result of wind farm operational traffic flows.

1.6.7 Ecology and Nature Conservation

There are no national parks or RAMSAR sites located within 10 km of the site boundary. The nearest Natura 2000 site is SCI Dumbraveni- Valea Urluia- Lacul Vederoasa river region at a distance of approximately 5 km northwest of the wind farm site and crossed by the existing HV line. This Site of Community Interest (SCI) is designated for: 6 species of mammals, 6 species of batrachians and reptiles, 6 species of fish, 5 species of invertebrates and 4 species of plants. It also contains 8 Annex I habitats (natural habitat types of community interest whose conservation requires the designation of special areas of conservation), primarily steppe and woodland communities. However it also contains 38% agricultural land, and this comprises the main land use along the HV line route.

Chirnogeni Wind Farm 80 MW

Wind farm construction work will temporarily disturb or result in the loss of small parcels of agricultural habitat and marginal habitats (on access roads and in irrigation channels) on site. Site surveys have concluded that these habitats are of low biodiversity value, and that significant amounts of similar or better habitat exist around the site. Restoration of the temporary construction work areas and access roads not required for the operation of the wind farm will be undertaken to a high standard and the land given back to agricultural use.

During operation approximately 0.124 km^2 of land will be taken out of agricultural use for the lifetime of the Project (approximately 20 years) which will result in a loss of this amount of habitat which is not considered to be significant.

No significant impacts are therefore anticipated to habitats during the construction and operation of the wind farm

Flora species recorded at the wind farm site are typical of arable habitats and the species recorded are all common and widespread (none are of conservation interest). No significant impacts are therefore anticipated during the construction and operation of the wind farm.

Two protected species of reptiles (Podarcis tauricus and Lacerta viridis) were identified at the wind farm site. Both have large populations within Romania(2) and are listed as of least concern within the IUCN red list, although the global population of Lacerta viridis is noted as declining by the IUCN. The habitat however is not considered highly suitable for reptiles and therefore adverse impacts are unlikely to result from activities on the relatively limited footprint of construction activities. However, should construction take place in the winter months (during the hibernation period), an experienced ecologist will check the site prior to any clearance works to ensure that no significant hibernation sites are disturbed. If a site to be disturbed supports hibernation by one of the protected species, the construction activities will not be conducted until after this season.

Preconstruction checks for Habitat Directive Annex IV species will be undertaken by a competent ecologist at all laydown sites, compounds, tower bases and particularly along the underground transmission line route extending to 25 m either side of the cable trench.

If Annex IV species are found, an appropriate working method to minimise harm by creation of suitable habitat outside of the working width of the underground transmission line (or work area associated with other areas such as laydown sites, compounds and tower bases) will be undertaken prior to work beginning. A safe method of exclusion or possibly translocation of Annex IV species will also be required, and if this work requires consultation with the relevant authorities, it will be conducted prior to works initiation. With the implementation of these precautionary mitigation measures prior and during construction, no significant impacts are anticipated to occur to reptiles.

A wind farm site survey using bat detectors indicates that there is a low level of use of this site for flight paths or foraging by bats (also protected species). Furthermore, the wind farm site and the surrounding area are not considered of importance for foraging and no suitable roosts were identified nearby. Therefore, given this unsuitability of the

(2) Romanian Red Book of Vertebratess, 2005

site and the low level of activity of bats here, it is not anticipated that neither the construction nor operation of the wind farm will cause any adverse impacts on bats.

No significant impacts are anticipated to mammals (including bats) during the operation of the wind farm.

The wind farm habitat is considered to be of low importance to birds considering its low level of use during spring and summer surveys undertaken, its relatively small size, and as it is surrounded by significant amounts of similar or better habitat which birds can displace to. Overall no significant impacts are anticipated to birds during the construction of the wind farm.

Five bird species recorded at the wind farm site during the spring and summer surveys are protected under the EC Wild Birds Directive (79/409/EC) namely European roller, tawny pipit, lesser grey shrike, marsh harrier and red footed falcon. Of these species all are regarded by the IUCN as of least concern (3) accept for roller and red-footer falcon, both of which are listed as near threatened (4). These species are not included in the Romanian Red Book. European roller, tawny pipit and lesser grey shrike are species likely to forage over the wind farm site, and may be displaced from the site during operation of turbines. However, there is similar suitable foraging habitat nearby, which the species could use if it is displaced, and given the low number recorded, no significant impacts are anticipated.
During the breeding season only ground nesting species, such as tawny pipit are likely to breed within the site and there is some limited potential for displacement in response to the operation of the turbines. Research undertaken on large scale wind farms in upland Britain predicted declines in the related meadow pipit of 14.7% (5) within 500m of wind farms (although it should be noted this work was carried out on previously remote and isolated upland sites and other work has suggested farmland birds may be less susceptible to disturbance (6)). Overall the assessment is that if birds are displaced the actual numbers involved will be small and there is capacity within the surrounding area to accommodate small scale displacement given the low density of bird populations. A minor locally adverse but long term effect is therefore predicted for breeding birds through displacement.

(3) A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.

(4) A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

(1) [5] Pearce-Higgins, J.W., Stephen, L., Langston, R.H.W., Bainbridge, I.P. and Bulman, R. 2009. The distribution of breeding birds around upland wind farms. *Journal of Applied Ecology* 46, 1323-1331

(2) [6] Devereux, C.L., Denny, M.J.H. & Whittingham, M.J (2008). Minimal effects of wind turbines on the distribution of wintering farmland birds. *Journal of Applied Ecology 45, 1689–1694*

If for imperative reason construction works has to take place during the breading season, survey will be undertaken to identify and mark bird's nests and no work will be allowed in the vicinity of such sites until the young have fledged. Additionally, in order that construction does not cause adverse impacts to ground nesting birds, clearance activities will be undertaken outside of the bird breeding season (May – June).

There is some potential for collision risk as roller, tawny pipit, marsh harrier and red-footed falcon all engage in aerial displays at turbine rotor height, and there is evidence from some areas (e.g. Smola, Norway) that birds that normally show high levels of avoidance are more vulnerable when engaged in display flights. Marsh harrier and red footed falcon have been recorded in low numbers at the wind farm site during the summer survey (one pair of each). Nests of marsh harriers are usually associated with wetland vegetation whilst red-footed falcons use mainly old nests of corvids in trees. The absence of these features within the wind farm is likely to reduce the risk to nesting birds but due to the sensitivity of long lived species with slow reproductive rates a moderate adverse impact to the species at a local level could occur even at low levels of collision. European Rollers also nest in trees or other bird's nests and again the habitat within the wind farm does not encourage nesting by these species.

At present there is no specific baseline information on the use of the wind farm site by birds during the autumn migration (September- November). Due to the potential use of this site by migrating birds during this period, vantage point survey to map and record flights through the wind farm area will be undertaken to coincide with the main movements of birds during the autumn migrations.

Birds and bats will be monitored during migration and breeding/young-raising seasons, at the time of the construction, and for at least two years of operation in order to verify potential significance of impacts and to determine the need for operating parameters to reduce impacts. Additionally, regular searching will be undertaken for both bird and bat corpses using internationally described protocols to monitor mortality.

HV line

The ecological site survey conducted in May-June 2011 indicated that the habitats which may temporarily be disturbed by the rehabilitation of the HV line are already significantly modified and of low biodiversity value. These habitats consist of arable fields, grassland and some wetland areas (which comprise mainly pastures in the area of Negresti Moor and these are crossed by approximately 500 meters of HV line; access for rehabilitation works will be through existing tracks and over agricultural land that will be returned to cultivation). Similar habitats can be found on the terrains around the HV line.

The only protected area likely to be directly impacted by rehabilitation activities is SCI Dumbrăveni - Valea Urluia - Lacul Vederoasa. A section of approximately 1.5 km of the HV line crosses the SCI from the south to the north, between Movila Verde and Negresti villages. This crossing area is through the part of the SCI dominated by agriculture (pasture) and follows the existing HV line route. The qualifying features of the SCI are primarily located in other parts of the site or associated with waterbodies where no Project impacts are anticipated. Rehabilitation works in this crossing are likely to take approximately one month and access will be on existing tracks and over cultivated land. Any land disturbed during the rehabilitation works will be restored to its previous agricultural use. .

Also, the construction of a new underground transmission line in the Basarabi area, which requires a 4.7 km trench will potentially disrupt 2350 ha assuming a 50 m working width. Habitats along the route of the new transmission line are currently subject to cultivation and have low levels of conservation interest. However, not all habitats within the work way is likely to be damaged.

No significant impacts are therefore anticipated to habitats during the rehabilitation of the HV line.

During the operation of the HV line, 0.045 ha of agricultural habitat of low conservation value will be permanently lost due to the extension of the Chirnogeni substation. As a consequence, impacts are predicted to be long term, irreversible, but due to the low value of the habitats and small area, effects are considered imperceptible.

The route of the HV line does not support any plant species of conservation interest such as those listed in Romanian Red Lists or in Annexes of the Habitats Directive or the Bern Convention. No significant impacts are therefore anticipated during the rehabilitation of the HV line.

Two species of reptiles listed on Annex IV of the Habitats Directive (Podarcis tauricus and Lacerta viridis, also identified on the wind farm site) and therefore of community interest and requiring strict protection, were recorded within the HV line route alignment and working area. These species are common in Romania but restricted in distribution. They are described as of least concern by the IUCN.
It is possible that rehabilitation works may lead to death or disturbance of these protected species and temporary deterioration of the habitat available to them. Given the small footprint of the Project, such impacts are likely to be limited. However, the construction of the new 4.7 km underground transmission line could potentially have a more damaging impact particularly if it occurred at a time when the species were hibernating.

Preconstruction checks will be undertaken prior to any works occurring, particularly along the route of the new underground transmission route, to identify the location of any reptile populations. Such work will be undertaken by an experienced reptile specialist ecologist. If any animals are found it will be necessary to remove them from the affected area(s) and prevent their re-entry by using suitable reptile fencing. The requirement to maintain favourable conservation status means that mitigation in the form of enhanced habitat to which displaced animals may be temporarily removed will be provided. The most effective way of doing so is to provide receptor areas of brash (cut down scrub) along the periphery of the working corridor. These areas will be retained for a period of at least 6 months after works have ceased in order to allow habitats damaged during the laying of the underground transmission cable to re-establish. The implementation of these precautionary mitigation measures during rehabilitation works will reduce impacts to a negligible level and ensure compliance with the Habitats Directive.

If the new underground transmission line will be constructed in winter months, an experienced ecologist will check the site prior to any clearance works to ensure that no significant hibernation sites are disturbed. With the implementation of this precautionary mitigation measure during construction, no significant impacts are anticipated to occur to reptiles.

For ground dwelling mammals, given the already disturbed nature of the farmed landscape and the generally small footprint of the HV line, impacts are primarily associated with the new 4.7 km underground transmission line route. For burrowing mammals such as the Annex IV Spermophillus citellus, listed by the IUCN as vulnerable (which may be present along the HV line route) both the legal status and ecology of the animal indicates that impacts could be moderate to major depending on the numbers present on the route of the underground transmission line without mitigation. Mitigation, including detailed preconstruction surveys to establish if they are present will be needed. In case individual burrows or a colony of Spermophillus citellus is identified, mitigation measures will include minor alterations of the transmission line route in order to avoid colonies, or alternatively animals will have to be translocated from construction area and appropriate habitat management in place (e.g. manipulation of grazing levels) to accommodate displaced or translocated animals.

As the HV line route is primarily over open agricultural landscapes, no disruption to breeding or roosting sites of bats is anticipated, and even where it passes close to woodland or water bodies, bats are likely to be able to detect and avoid lines and poles due to the discriminatory powers of their echolocation(7).

(7)Altringham, J.D. 1996. Bats: Biology and Behaviour. Oxford University Press

Taking into account that the rehabilitation works have a low likelihood of disturbing bats and the low likelihood of collision with structures and wires no impacts are predicted.

Impacts on birds related to the rehabilitation of the HV line are primarily disturbance, if work takes place during the breeding season, particularly on the construction of the 4.7 km underground transmission line, to direct and indirect loss of nests and young. Without mitigation, such impacts are likely to be minor and short term as the majority of species present are common agricultural species, although where the Project impacts on Annex I species, the sensitivity of the receptor may increase this to a moderate short term impact. However, in order to avoid any disturbance to birds, construction works will not take place during the nesting season.

Cumulative impacts on ecology and nature conservation

For the purpose of this assessment, projects within a radius of 20 km of the Chirnogeni Wind Farm have been considered, as well as larger scale spatial and temporal references (e.g. migratory flyways), where appropriate. Within 20 km of the Chirnogeni Wind Farm 80 MW, there are four proposed wind farms: Movila Verde, Amzacea A, Amzacea B and Olteni, none of which has started the Romanian Environmental Impact Assessment (EIA) permitting procedure. These four wind farms will add a total of 50 additional turbines, which means that within the 64 km^2 of the cumulative impact search area there will be a combined total of 82 turbines.

Overall cumulative impacts are anticipated to be most likely where they relate to mobile populations, particularly migrant birds and possibly bats. In general the land use, topography, and limited size of the wind farms concerned, coupled with little evidence of key migratory routes would suggest that cumulative impacts are unlikely to be significant.

Caution regarding the robustness of this determination is required however as no information was available on the impacts of the other wind farms, and most of this had to be inferred from location and number of turbines. In addition, there appears to be little specific information on either bird or bat migration through the Chirnogeni Wind farm site or indeed within the 20 km cumulative impact assessment radius, and this is a further limitation to the assessment process. Such information could be obtained by undertaking the additional surveys and monitoring mentioned above and would be valuable in increasing the robustness of the assessment.

The main projects likely to have in-combination and cumulative impacts with the rehabilitation of the transmission line are the Chirnogeni Wind Farm and the proposed projects mentioned above.

The primary in combination effects likely to arise from this expansion of wind generation projects are impacts on protected species during construction and the likelihood that once operational, wind parks will lead to an increase in bird and bat mortality although it is uncertain if this will have population level effects.

Given the low level of impacts after mitigation, on protected species predicted during the construction phase of the HV line rehabilitation it is unlikely that cumulative effects will occur, particularly given the dispersed nature of the other projects over a wide area (94 km^2).

Overall the rehabilitation of the HV line is not thought to be likely to have negative in-combination or cumulative impacts in relation to the other projects.

1.6.8 Landscape and Visual Impacts

The landscape and visual impact assessment was informed by data gathered from field surveys, computer generated theoretical zones of visual influence (ZVIs), computer modeled photomontages and photowirelines as well as descriptions of landscape features in Dobrogea region included in literature papers.

The commitment to the following mitigation measures reduces potential significant landscape and visual impacts.

- *Access roads have been designed, as far as possible, to follow and fit with contours in the land. The removal of vegetation has been minimized and permanent tracks take the shortest route to the turbine where possible.*
- *Signs will be provided only for health and safety purposes and will be located on the turbine doors. Advertising and brand names will not be permitted on the turbines.*
- *There will be no external lighting except for the requirements of the Romanian Civil Aeronautic Authority (RCAA).*
- *The turbines and all other aboveground structures will be removed at the end of the operational lifetime of the wind farm.*

The Romanian Civil Aeronautic Authority (RCAA) requires the wind turbines including tower, nacelle and blades to be painted white and turbine towers to be provided with lights. In some weather conditions such as snow, the white turbines may be less visible than grey versions.
In order to define the area of influence of the Project, two ZVIs were produced showing the extent of theoretical visibility of the hubs and the tips of the turbines within an area covering 30 km radius from the centre of each turbine.

From inspection of the ZVI and taking into account settlements, main routes through the area, locations of known tourist/visitor importance and hills from which elevated views may be possible, 11 viewpoints were selected to represent the main areas from which the wind farm may be seen and the different types of viewing opportunity these offer (residents, passers-by, walkers etc).

Photographs of existing views towards the site and full photomontages of the wind farm were prepared for all of the viewpoints. These were all used as tools to assist with the assessment of landscape and visual impacts.

Landscape character and resources

There is a number of National Park and Nature Park landscape character types at distance away from the Project site, the nearest being 5 km to the north. The scale and containment of these landscapes is not likely to be affected and hence a low sensitivity to the proposed change is assessed to arise.

The proposed wind turbines are located within the wider large flat plateau or plains character type and views of the development from locations within this type will be available. These plains are mostly agricultural land with sparse vegetation. A large number of electricity poles are seen within the landscape as intrusive elements within the landscape. An overall medium – low sensitivity to the proposed change is therefore assessed to arise.

Two adjacent wider landscape character types are the Steppe vegetation and woodland type and the Valleys with lakes. Neither of these types is likely to be indirectly affected by the Project due to either screening or low elevation therefore their sensitivities are considered to be low.

On a more local level, three landscape character types were identified and their sensitivities to the proposals assessed. The surrounding settlements and communes type has been assessed as of medium to low sensitivity given their current quality and condition. Surrounding farmland type is also assessed as of low sensitivity due to the presence of a number of detracting features. The water body types are located at larger distances from the Project site and at lower elevations and are consequently assessed as being of low sensitivity.

The proposed Chirnogeni Wind Farm will be located in the settlements and communes landscape type and therefore it will be directly affected by the Project. Indirect effects will also arise as a result of the visibility of the proposals from within these areas as there is limited vegetation cover due to large scale agricultural practice within the

fields. The magnitude of change is assessed to be large and therefore the significance of impacts is assessed to be minor to moderate.

The Plopeni Lake and Negresti Lake which form the water bodies' character type are located approximately 5 to 7 km away to the north of the wind farm. Considering their distance as well as the fact that they are located at lower levels within the valley, the magnitude of change is assessed to be medium and therefore the significance of impacts is assessed to be minor.

At a wider level, the proposed wind farm is located within the flat plateau or plains character type. Views would be available from locations within this type which are mostly agricultural farmland, with sparse vegetation as well as pockets of open rough grazing land. The magnitude of change is assessed to be medium and therefore the significance of impacts is assessed to be minor.

Most of the steppe vegetation in the wider area of the Project location has now been replaced by intensive grazing or by agricultural crops. The magnitude of change is considered to be medium given that the scheme is large and will be visible from open agricultural farmland and steppe vegetation areas. The significance of the impact is assessed to be minor.

Table 1 below summarises the residual impacts on landscape from the Project.

Table 1 Summary of Residual Landscape Impacts on Local Landscape

Local Landscape Character Areas	*Sensitivity to the Proposed Change*	*Magnitude of Change*	*Impact Significance*
Settlements or Communes and surrounding Farmlands	*Low to Medium*	*Large*	*Minor to Moderate*
Water bodies	*Low*	*Medium*	*Minor*

Table 2 Summary of Residual Landscape Impacts on Wider Areas

Regional Landscape Character Areas	*Sensitivity to the Proposed Change*	*Magnitude of Change*	*Impact Significance*
Flat Plateau and Plains	*Low*	*Medium*	*Minor*
Steppe vegetation and Woodlands	*Low*	*Medium*	*Minor*
Valleys with Lakes	*Low*	*Small*	*Not Significant*

Visual receptors and visual amenity

The degree of impact of Chirnogeni Wind Farm on each of the 11 viewpoints was assessed as being either: not significant, minor, moderate or major significance, taking into account the sensitivity of the receptors represented by the viewpoint together with the quality of the existing view and the magnitude of change in the view, in order to evaluate the resulting significance of impact.

The assessment was assisted by the preparation of visualisations of the development for the 11 viewpoints. It must be appreciated that photomontages, by their nature give a restricted and artificial view, and the real effect can only be seen by experiencing the view in person. The illustrations do not therefore provide an exact replication of future views, but the turbines are shown to scale to give an idea of the size of the structures and their effect on the view. In assessing the visual impact in each case, consideration is also given to the effect of light and weather conditions on visibility, and the variation in the view around the exact position of the photograph.

The assessment indicates that there will be impacts of minor significance at four of the viewpoints (VP2, 3, 4, 6), not significant at four viewpoint locations (VP1, 5, 9, 10) and minor to moderate at three viewpoint locations (VP7,8, 11) – see Annex 2.

The minor to moderate significant visual impacts are associated with impacts on high sensitivity residential receptors in proximity to the proposed wind farm.

Cumulative landscape and visual impact assessment

Cumulative landscape and visual impacts usually arise when changes to the character of a landscape and changes to a view across a landscape occur as a result of the visible presence of the proposed Chirnogeni Wind Farm in combination with other wind farms visibly present in the landscape or the view. According to the applicable guidelines, the cumulative assessment considered the potential for cumulative impacts within a 30 km radius area from the centre of the Chirnogeni Wind Farm.

Following consultations with the relevant authorities, at the time of writing this assessment, there were 16 proposed wind farm projects located within 30 km of Chirnogeni Wind Farm 80 MW (including the four mentioned at the Ecology and nature conservation section, which are proposed to be located within 20 km of Chirnogeni). Out of these, two have been brought to the attention of the planning authorities and are at the scoping stage in the planning process and consequently considered for the cumulative assessment. There are no existing wind farms in the study area for the cumulative assessment. Annex 3 shows the location of the proposed wind farms in a radius of 30 km and the considered view points.

The cumulative assessment addressed cumulative impacts arising from the proposed Chirnogeni wind farm along with the planned Deleni wind farm and the planned Pecineaga A wind farm, which are the two in the planning stage, and for which certain design parameters could be assumed. Design data available for both of these wind farm projects was limited to the number of wind turbines and the position of each. The cumulative assessment therefore assumes that the wind turbines associated with these projects will be of the same height as Chirnogeni Wind Farm which is 145 m to the tips of the blades.

Table 3 Proposed wind farms considered for the scope of the cumulative landscape and visual impact assessment

Name	No. of Turbines	Status	Location and distance from Chirnogeni
Deleni	123	Scoping	14,9 km NNW
Pecineaga A	31	Scoping	17,8 km E

The cumulative assessment addressed cumulative impacts on the character of the landscape. The cumulative assessment also considered viewers located at three specific locations in the study area.

Summary of cumulative impacts on landscape character

Residual cumulative impacts on the character of the landscapes within the study area will arise when Chirnogeni Wind Farm can be seen within a given landscape character type along with other wind farms included in the cumulative assessment such as Deleni and Pecineaga A. The results of the cumulative assessment on landscape character are summarised as follows:

- *In the case of the Large Flat Plateau or Plains Landscape Character Type, the Chirnogeni Wind Farm will cause a small to medium magnitude of cumulative change to this landscape of low sensitivity resulting in a minor cumulative impact on landscape character.*
- *In the case of the Steppe Vegetation and Woodland Landscape Character Type, the Chirnogeni Wind Farm will cause a not significant magnitude of cumulative change in this landscape of low sensitivity resulting in a not significant cumulative impact on the character of this landscape.*
- *In the case of the Valleys with Lakes Landscape Character Type, a small magnitude of cumulative change is predicted to arise in this landscape of low sensitivity resulting in a not significant cumulative impact on landscape character.*

Summary cumulative impacts on viewers at selected viewpoint locations

Cumulative visual impacts were assessed for viewers at the following locations:

- *Viewpoint V09, West of Chirnogeni Commune (2.7 km to nearest Chirnogeni wind turbine);*
- *Viewpoint V20, Cobadin Commune (18 km to nearest Chirnogeni wind turbine); and*
- *Viewpoint V24, Negru Voda (6.05 km to nearest Chirnogeni wind turbine).*

Photowirelines were prepared for all three selected viewpoints and included as annexes to the ESIA prepared for Chirnogeni Wind Farm 80 MW. The interpretation of these photowirelines is briefly presented below.

Cumulative visual impacts will not arise at viewpoint V09 because only Chirnogeni will be visible from this location.

At viewpoint V20, the Chirnogeni Wind Farm will cause a small magnitude of cumulative change on this viewpoint of high sensitivity resulting in a minor cumulative impact.

At viewpoint V24, Chirnogeni Wind Farm will be clearly visible whilst the Deleni Wind Farm will be barely visible as it is located so far from the viewer. Pecineaga A wind farm will not be visible. From this viewpoint, Chirnogeni Wind Farm would have to be located nearer to the proposed Deleni Wind Farm in order to be seen to contribute to wind farm development in the landscape as seen from this viewpoint. For these reasons, cumulative visual impacts will not arise at this viewpoint.

1.6.9 Socioeconomics

Introduction

EPGE is committed to implement this Project in line with all the Romanian and international socioeconomic standards. In order to assure this, an ongoing stakeholder engagement will be promoted before and during the construction and operation phase of the Project. A SEP was developed and project stakeholders have been involved since earlier stages of Project development (scoping).

The socioeconomic assessment addresses social, economic and health impacts and effects anticipated to arise in the local communities as a consequence of the proposed Project. It focuses on impacts to the Chirnogeni and Independenta Communes, which are most likely to experience the Project impacts. The assessment also addresses the communities along the HV line (Independenta, Chirnogeni, Cobadin and Basarabi Communes) to be rehabilitated by ENEL with financial support from EPGE

Baseline data were collected from various factsheets, literature papers and via a questionnaire completed by Independenta and Chirnogeni Mayoralties aimed at gathering information on the socioeconomics of the communes. Consultation also took place with the local authorities and members of the public which was fed into the assessment. Statistical data have been collected for all the communities within the Project area including those along the existing HV line.

Impacts Management

As the construction works will be executed by contractors, EPGE will pay particular attention to contractors' management. In order to ensure that the socioeconomic national and international standards will be put into practice along entire contractors supply chain, the following measures are envisaged:

- *develop and enforce a clear and effective Environmental, Health and Safety (EHS) and social management procedure and operational procedures; create a monitoring procedure for EHS and social impacts of the Project*
- *develop and enforce a clear and effective organizational chart, including allocation of tasks and job description for each employee;*
- *develop and enforce a human resource policy at the level of the Romanian entity level and assure that it is implemented correctly by contractors and subcontractors.*
- *develop clear land acquisition procedures covering acquired land (based on open negotiation and market value), easements and right to use land;*

- *define and implement a Compensation Action Plan to address permanent or temporary land acquisition, land easements, loss or reduction of agricultural productivity, damages to crops etc.;*
- *ensure a permanent consultation with land owners and users by implementing the SEP.*

Wind Farm Construction Impacts

The wind farm will have minor adverse impacts on land use as only 0.73% of the 16.9 km² site will need to be rezoned to industrial in order to allow the construction of turbine foundations, project substation, permanent crane pads and access roads. Where possible, construction activities will avoid the crop growing seasons. However, should crops be damaged during this period, compensation will be provided and land will be fully reinstated according to the provisions of the Compensation Action Plan. Also, after the completion of the construction works agricultural activities will continue on the lands not affected by wind farm operation and maintenance.

Construction of the wind farm is scheduled to start in the first quarter of 2012 and will last a period of 18 months. This will result in direct employment opportunities. It is estimated that a total construction workforce of 50 workers will be employed of which 30% (15 workers) are estimated to be local. Employment for locals will have a noteworthy effect on those who are employed; however, this will be only a very small percent of the total population.

Impacts on the local housing situation in the local communities are expected to be negligible taking into account that approximately 15 construction workers are local and therefore will already have accommodation in the neighbouring villages and the remaining workers will be accommodated in bedroom containers on the wind farm construction compound. This compound and accommodation conditions will comply with the relevant national and international standards. Taking into account the relatively small scale of the project and construction staff (50 workers in total, out of whom 35 non-local), the probability of importing any diseases which could impact the local communities is considered to be very limited. However, the company should prepare a code of conduct for all non-local workers and assure that they are aware of and comply with it.

The procurement of local goods and services will benefit those supplying the Project. A potential increase in demand for certain supplies with associated impacts on local prices and availability cannot be excluded. However, given the small scale of the Project and the relative lack of enterprises in the local communes it is likely that the majority of goods and services will not be procured locally. Therefore, the impacts associated with the goods supply are unlikely and expected to be not significant.

At the time when this document was prepared, EPGE had already purchased the necessary land for the wind farm by direct negotiation with the land owners. The company will prepare a land acquisition procedure for future investments in land.

Construction/rehabilitation works will lead to the long-term improvement of local infrastructure by the upgrade of 13 km of existing exploitation roads. While the construction of a network of new roads to provide access to the turbines will imply land acquisition impacts, it will also have positive impacts by providing local farmers with improved access to the agricultural land.

Based on the findings of the baseline archaeological survey, the construction works for the installation of the underground electrical cables between turbines T5 and T13 will potentially affect one of the tumuli identified on site. However, according to the conclusion of the archaeological baseline survey conducted in April - May 2009, this tumulus is not considered to have particular archaeological importance. Additionally, it is not listed in the National Archaeological Record of Romania. It is anticipated that following consultation with the authorities and the implementation of appropriate mitigation measures, no significant impacts will occur to archaeological sites.

Wind Farm Operational Impacts

Of the total wind farm (16.9 km^2), 0.124 km^2 will be rezoned for industrial purposes and will no longer be used for agriculture. The presence of the turbines, their foundations and of the new roads/buried cables may restrict the access of agricultural machinery to land immediately beside/around them for farming purposes. However, EPGE will develop a Compensation Action Plan for people whom will suffer for economic losses during the construction and operation phases of the wind farm. This compensation plan will include, for example, compensations for loss of access to land immediately beside foundations/roads, compensations for losses of crops due to damages, or animals injured/killed, during construction or maintenance.

The Project developer will pay annual taxes to the local commune budgets for the lifetime of the Project, which is expected to be at least 20 years.

A small workforce will be required to maintain wind farm operations and ensure non-stop coverage. It is anticipated that these workers will be employed locally and trained accordingly by the Design Company.

The operation of the wind farm will have no negative impact on air quality. On the contrary, the wind farm will displace approximately 105,000 tonnes of CO_2 per year, which would otherwise be produced by non-sustainable sources such as the burning of fossil fuels.

Operational traffic emissions will be negligible and will have no adverse effects on human health as associated air quality impacts are expected to be insignificant.

To increase the positive effects and reduce the negative ones during the operation of the wind farm, the following mitigation measures can be applied:

- *all land not affected by wind farm operation and maintenance will be returned to agricultural use;*
- *the taxes to the local budgets will be paid in a timely and transparent manner;*
- *local farmers will be allowed to use the access roads to the turbines, and*
- *operational employees (technicians) will be trained in order to be able to take advantage of local employment.*

Wind turbines can potentially disrupt electromagnetic signals used in a range of telecommunication, navigation and radar services. Contact has been made with all relevant authorities and no concerns were identified with regard to the wind farm at this stage.

Shadow flicker is a flickering or strobing effect that moving shadows of rotating blades can cause when perceived by humans. The distance from the nearest property (pig farm) to the wind farm boundary is approximately 1.6 km, well above the minimum distance equal to ten times the rotor diameter (900 m), considered by the experts before shadow flicker can occur. Also, the nearest roads to the Project site (the Commune Road Dc 16, County Roads DJ 391 and 392, National Road DN 38 and National Road 3) lie outside the zone potentially affected by shadow flicker; therefore no impacts will occur.

Wind farms operating in cold climates may suffer from icing in certain weather conditions and a failure in the rotor blade or ice accretion can result in the 'throwing' of a rotor blade or ice from the wind turbines, which may affect public safety.
This is only deemed a problem where there is the possibility of people being near the turbines. There are no recorded rights of way on site that people use and the distance from the turbines to the nearest existing paths and tracks is approximately 100 m. In addition, no agricultural works are carried out on fields during winter time and therefore associated safety impacts are unlikely.

EPGE has taken steps to reduce any potential impact from ice throw in the design of the wind farm (automatic shutdown of the turbines in case of ice accumulation) and during operation (regular maintenance will be undertaken). Any potential impacts will therefore be negligible.

High-voltage Transmission Line Rehabilitation Impacts

Rehabilitation works to existing HV line and three substations connecting the Chirnogeni Wind Farm 80 MW with the national power grid (including the construction of 4.7 km of underground transmission line) will be performed in order to ensure technical parameters required to accommodate the power produced by the wind farm. The rehabilitation works will be carried out by the owner of the infrastructure (ENEL) but have been considered part of Project area of influence. The associated area of influence is stretching from Chirnogeni village all the way to Basarabi (currently Murfatlar city), more precisely near Siminoc village, on a total length of 45 km.

As the transmission infrastructure is presently under operation, the impacts are expected to be noticeable mainly during rehabilitation period. As limited or no changes to the infrastructure operation are expected, conditions will be identical to the present once the rehabilitation works are completed.

Minor interferences with the current land use practices can be expected during the rehabilitation of the existing HV line.

The rehabilitation of the HV line will not interfere with the local housing. Based on the observations made during the site visit in May 2011, there are no illegal or temporary/informal occupants of the land under the HV line whom might be impacted by the rehabilitation works.

Based on the data provided by ENEL, this company does not intend or need to purchase any land for the rehabilitation of the HV line.

Temporary traffic restrictions may be enforced during the rehabilitation works, especially in the areas where overhead transmission lines are crossing the local roads. The disturbance will be for a limited amount of time and will have no major impacts. A Traffic Management Plan will be developed and implemented by ENEL and its sub-contractors. This Plan will establish preferred routes that avoid sensitive areas (pedestrian areas, schools, clinics, etc.), air quality protection measures and will require driver training. EPGE will monitor the implementation of this Plan.

To increase the positive effects and reduce the negative ones during the stage of wind farm construction/HV line rehabilitation, the following mitigation measures can be applied:

- *after the completion of construction/rehabilitation works, all equipment and construction related facilities will be removed and the areas will be returned to their prior use;*
- *the Project will prioritise employment of local labour by setting criteria for prioritising, firstly labour from Independenta, Chirnogeni, Cobadin and Basarabi Communes and secondly from Constanta County;*

- *construction personnel will be trained with regard to the EHS risks associated to the Project and measures to avoid these;*
- *a Traffic Management Plan will set out general measures used to mitigate the environmental impact of construction traffic and considering transporting equipment and construction materials to the sites outside rush hours;*
- *construction works of the wind farm and the 4.7 km underground transmission line will include supervision by an archaeological expert to avoid or reduce any potential impacts to the tumulus.*

Background data:
e/ topographical maps 1:100,000

CIOCÂRLIA
Ciocarlia de Sus
Ciocarlia
Viisoara
Cobadin
Lanurile
COBADIN
Mereni
Ciobanita
Osmancea
Miristea
Negresti
Conacu
Credinta
Casicea
Movila Verde
General Scarisoreanu
Plopeni
INDEPENDENTA
CHIRNOGENI
Chirnogeni
Comana
Tataru

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	Name:	Date:
Prep.:	IL	08/2009
Drawn:	IL	08/2009
Checked:	FD	08/2009
Appr.:	FD	08/2009

Figure 9.5.12 – Viewpoint 15
Viroaga village

43,8759739 E 28,0867297 N
Distance to nearest turbine: 4.4 km
Direction to the project site: ENE
Photo taken: 17/03/2009
Images have been taken with a digital SRL camera with an and a focal length of 35 mm

Client:

EP WIND PROJECT (ROM) SIX SRL
Strada Albinelor, nr. 16, Constanta, Romania

Project-No.:	0093210
Scale:	Not to scale
	Figure 9.5.12
Size:	A3

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	Name:	Date:
Prep.:	IL	08/2009
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Checked:	FD	08/2009
Appr.:	FD	08/2009

Figure 9.5.13 – Viewpoint 18
View from the suthern part of Commune Independenta

43,9423363 E 28,0878855 N
Distance to nearest turbine: 5.7 km
Direction to the project site: SE
Photo taken: 17/03/2009
Images have been taken with a digital SRL camera with an and a focal length of 35 mm

Client:

EP WIND PROJECT (ROM) SIX SRL
Strada Albinelor, nr. 16, Constanta, Romania

Project-No.: 0093210
Scale: Not to scale
Figure 9.5.13
Size: A3

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	Name:	Date:
Prep.:	IL	08/2009
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Checked:	FD	08/2009
Appr.:	FD	08/2009

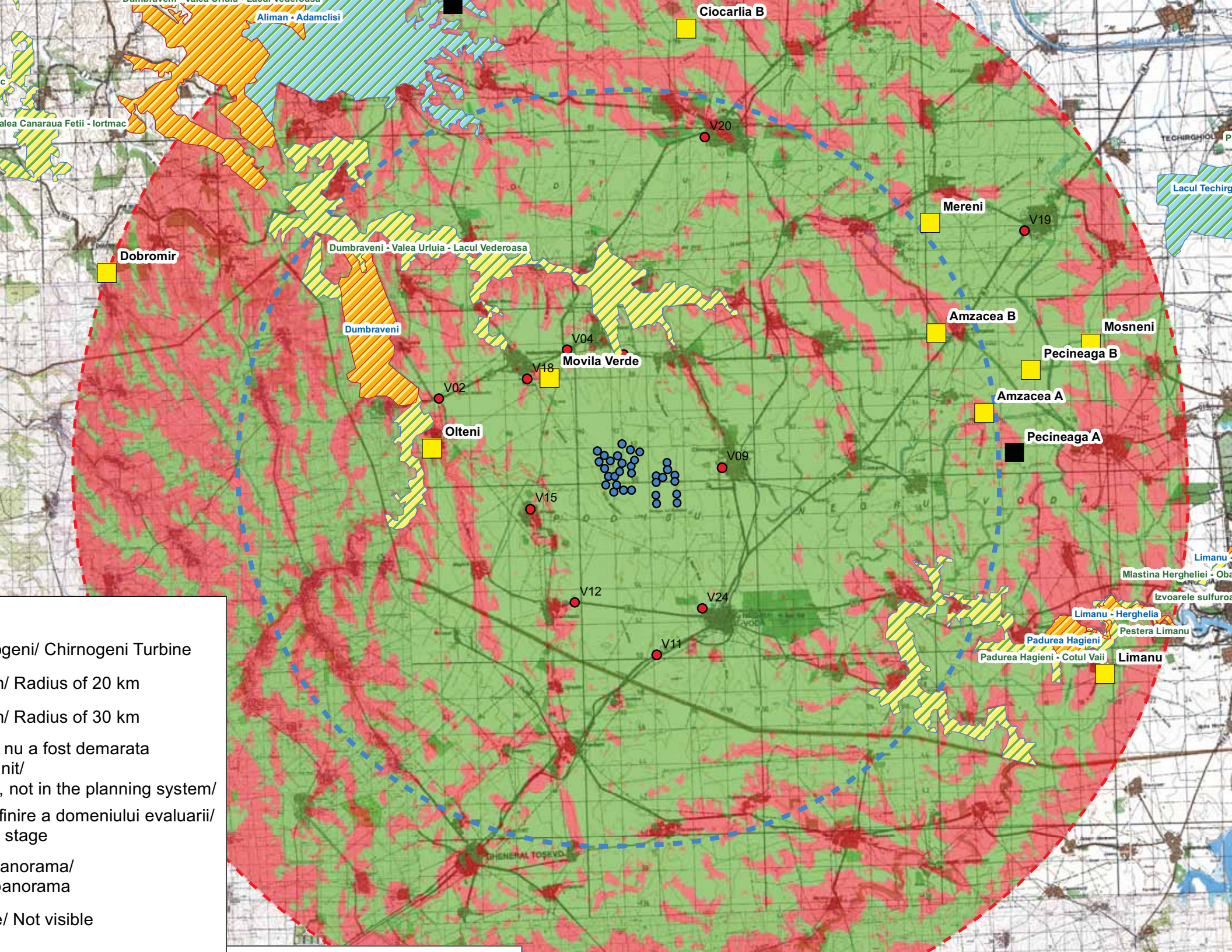
Figure 9.5.16 – Viewpoint 24
View from Negru Voda town

43,8840194 E 28,2086361 N
Distance to nearest turbine: 6.05 km
Direction to the project site: NNW
Photo taken: 17/03/2009
Images have been taken with a digital SRL camera with an and a focal length of 35 mm

Client:

EP WIND PROJECT (ROM) SIX SRL
Strada Albinelor, nr. 16, Constanta, Romania

Project-No.: 0093210
Scale: Not to scale
Figure 9.5.16
Size: A3


Ciocarlia B
Aliman - Adamclisi
alea Canaraua Fetii - Iortmac
V20
Mereni
V19
Lacul Techirg
Dobromir
Dumbraveni - Valea Urluia - Lacul Vederoasa
Dumbraveni
Amzacea B
Mosneni
V04
Movila Verde
Pecineaga B
V18
V02
Amzacea A
Olteni
Pecineaga A
V09
V15
Limanu -
Mlastina Herghelii - Oba
Izvoarele sulfuroa
V12
V24
Limanu - Herghelia
Pestera Limanu
Padurea Hagieni
V11
Padurea Hagieni - Cotul Vaii
Limanu
ogeni/ Chirnogeni Turbine
n/ Radius of 20 km
n/ Radius of 30 km
nu a fost demarata
nit/
, not in the planning system/
finire a domeniului evaluarii/
stage
anorama/
anorama
e/ Not visible