



Vutcani Extension Wind Farm, Romania  
Non-Technical Summary  
Date: February 2013

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# 1. INTRODUCTION

This Non-Technical Summary (NTS) provides a summary of the project description, the benefits of the project, the mitigation of potentially significant adverse environmental and social impacts and public consultation activities. Contact information for this project is provided below.

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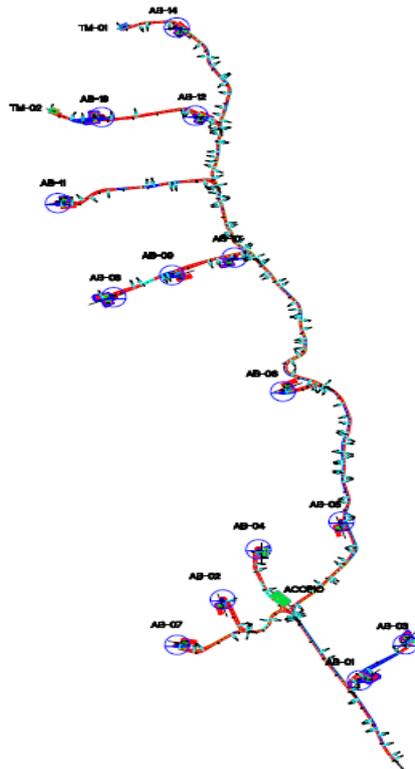
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The Vutcani Extension wind farm comprises 14 wind turbines (turbine model VESTAS V100 2.0 MW), providing a total power of 28 MW. Each wind turbine consists of a hollow steel tower with a generator nacelle which houses and protects the main components of the rotor blades, gear box, transformer and control systems. The turbines each have a total height of 145 m (comprising 95 m tower and 50 m rotor blade above the tower height). The turbines are connected, through 20kV underground cables and junction stations which are connected to a transformer station within the wind farm and this is then be connected to the nearest E.ON Romania transformers.

The total area occupied by the wind farm is ~ 83 ha from wich ~ 1,92 ha are affected by wind farm construction (internal roads, foundations, platforms of wind turbines, electrical substation 20/110 kV). The remaining land will be used for agricultural use. The land which was temporarily disturbed during the construction works has been restored. The proposed layout of the wind farm at Vutcani Extension is shown on Figure 1.

The Project has already obtained Construction Authorisations and the Environmental Agreement (in line with Romanian legal requirements). It is now in the construction phase and it's going to be operational in May 2013.



**Figure 1 – Layout of Vutcani Extension Wind Farm**



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## 3. DESCRIPTION OF THE WIND FARM

### 3.1 DESCRIPTION OF EQUIPMENT AND INFRASTRUCTURE

EDP Renewables are using and installing wind turbine model V100 supplied by Vestas of Denmark for the production of clean electricity by converting wind energy. These wind turbines have a capacity of 2.0MW and the maximum height of the turbine including the rotor blade is 145 m. The type of turbine installed is shown in Figure 3 below:



**Figure 3 – Vestas V100 Turbine**

There are underground cables connecting the turbines to the transmission station and overhead cables which follow a line south-west from the station and connect the site with the national grid.

Access roads have also been constructed as part of the wind farm and these are also available for use by local residents and those who lease the land within the area of the site for agricultural purposes.

## 4. ENVIRONMENTAL, HEALTH, SAFETY AND SOCIAL REVIEW OF PROJECT

### 4.1 SCOPE OF WORK

Analysis of the Environmental, Health and Safety and Social (EHSS) impacts and benefits of the project were assessed Non-Technical Summary (NTS) and Stakeholder Engagement Plan (SEP).

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## 4.2 SITE OBSERVATIONS

The Vutcani Extension Wind Farm is in the construction phase and it's going to be operational in May 2013.

The only building on the site is the operational sub-station 20/110kV. The connection to the E.ON Moldova grid is achieved via an electricity sub-station of 20/110kV.



**Figure 4 – Local topography**

The local topography around the Vutcani Extension wind farm is composed of a series of hills and valleys which are mostly orientated north-south, with vast tracts of land which is under agricultural production (typically arable farming). Belts of mature trees, where present, typically follow watercourses and lower slopes of the valleys helping to break up the vast, open landscape.

The nearest settlements to the site are Vutcani, Albesti, Oltenesti, Codreni and Costesti localities.

Land between the turbines is leased for agricultural use by local residents on a 1-3 year basis. Access to the turbines and the agricultural plots is via a network of internal site roads.



**Figure 5 – View from Vutcani village**

#### 4.3 EIA REVIEW AND GAP ANALYSIS

EDP Renewables consulted with the authorities to determine if an EIA was required for the development of Vutcani Extension Wind Farm. It was obtained the Environmental Agreement no 106/09.07.2012 following full procedure according with EIA legislation in force:

- Governmental Decision GD 445/2009 regarding the EIA framework procedure, projects can be classified as category A with significant environmental impact (Annex 1 of GD 445/2009) and B insignificant environmental impact (Annex 2 of GD 445/2009).

- For the projects listed in Annex 1 (full procedure), in order to obtain the Environmental Agreement it is mandatory to elaborate an EIA report and conduct public debates with local community and other relevant stakeholders (EPA, Environmental Guard, NGOs, etc). After this step, it is mandatory to assure a disclosure period of EIA report for public comments. If no complains are registered, the competent EPA will issue the Environmental Agreement.

- Vutcani Extension Wind Farm was considered as project listed in Annex 2 (short procedure) with non-significant environmental impact. It was confirmed that there were no significant environmental issues associated with the development and therefore, an EIA report was not required.

The company has also consulted with authorities in order to obtain the necessary certificates and licences to construct, operate and sell power to the grid and commits to do so for any future expansions. Public consultations with local communities have also been undertaken during the course of the project.

For facilitating the process, one EIA procedure was opened for Vutcani Extension containing following works: construction of Wind Farm (civil works, substation and wind turbines installation)

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## 5. PLANNING AND ENVIRONMENTAL IMPACTS

Overall this project should have positive socio-economic impacts from the generation of clean wind power energy. The key benefit of this project is the use of reliable renewable wind power technology which will achieve significant greenhouse gas emissions (GHG) savings as opposed to the use of conventional power generation plant using fossil fuels, as well providing jobs to the local community and generating revenue for the local budget.

From a review of the available information and following stakeholder consultations no agricultural use and no persons or businesses have been or will be displaced as a result of the proposed wind farm scheme.

The key findings in terms of impacts and mitigation measures are summarized below:

### 5.1 ECOLOGY

It is considered that the habitat within the Vutcani Extension wind farm site is generally of limited ecological importance due to the type of species present or other factors. The site is located on an open and windy hillside predominantly covered in arable crops (see Figure 6). The construction of the wind turbines is likely to have led to very small amounts of habitat loss, and given the large amount of similar habitat both within the site and in the local area this impact will have been negligible. Furthermore, specially designed nest boxes for birds will be installed in appropriate locations on the poles along the overhead power line grid connection of the wind farm.



**Figure 6 – General view of Vutcani Extension site and surrounding area**

The area covered by the wind farm is unsuitable for bats due to a number of factors, these include being located on an open and windy hillside, an absence of trees or hedgerows within the Site and minimal vegetation features. Bats tend to avoid open windy areas (except when migrating) and areas with a lack of linear features which they use for navigation across the landscape.

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There is potential for local impacts due to mortality caused by collision for migrating birds, and large flocking wintering birds and bats; and disturbance/avoidance during operation. The significance of this issue should be minimised by the presence on site of an Independent Ornithological Expert (IOE), who will be responsible for monitoring bird movements in the area of the wind farm and applying appropriate mitigation measures as required, including reducing the speed of the turbines or, potentially, for the turbines to be temporarily turned off during bird migration periods (which often coincide with bat migration periods), should it be required. The IOE should be present during the spring and autumn migration periods and during the winter. In addition, the marking of overhead powerlines with bird deflectors to increase visibility will also reduce the potential for bird strikes.

The monitoring programme will help to inform the actual impacts of the wind farms on birds and bats and will be used to manage the operation of the wind turbines at certain times of the year.

## 5.2 LANDSCAPE AND VISUAL

The general topography in the area of the Vutcani Extension site comprises of a series of hills and valleys which are mostly orientated north-south, with large areas of land of agricultural land (typically arable farming). Belts of mature trees, where present, typically follow watercourses and lower slopes of the valleys helping to break up the vast, open landscape. Agricultural fields and paddocks adjacent to the villages of Vutcani and Codreni are much smaller, more irregular and typically enclosed by woodland copses, tree-lined hedgerows and mature belts of trees to create a more enclosed character around the main settlement areas, in contrast to much wider landscape. Figures 7 & 8 below, present general views of the local landscape.



**Figures 7 & 8 – General views of the landscape in the vicinity of the Vutcani Extension site**

The nearest residential properties to the site are located more than 1000 m from the wind farm. Due to the orientation of some of the houses to the wind turbines, some properties will have oblique views only and/or blocked by topography, vegetation or intervening built form. Even so, there will be many open views of the wind turbines, which will be seen as slim silhouettes on the skyline.

The introduction of wind turbines would therefore have an impact on the existing landscape character of the site and surrounding visual amenity. This impact would last for the operational period of the wind farm and be reversed on decommissioning, although during operation, any impacts would be more significant to receptors within approximately 2-4 km of the site. As the distance from the site is increased, the effect of the Vutcani wind farm on visual amenity would be reduced.

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### 5.3 NOISE & VIBRATION

Given the limited noise associated with operation of the wind farm and the distances to the nearest residential areas, noise and vibration impacts are considered unlikely to be a significant concern.

### 5.4 WASTE MANAGEMENT

Waste materials generated as part of the project are likely to be minimal. Any wastes generated by routine maintenance activities are removed from site by the contractor and disposed of in an appropriate manner in accordance with applicable legislation. It has been recommended a waste management strategy is developed to ensure the disposal of any hazardous substances in accordance with Romanian Legislation.

### 5.5 CUMULATIVE EFFECTS

An assessment has been undertaken of the potential cumulative ecological, landscape and visual effects from the Vutcani Extension wind farm together with other wind farms in the area. The nearest other operational wind farm is Vutcani Wind Farm, located approximately 600 m of Vutcani Extensin Wind Farm.

As there are currently no other operational wind farms associated with the area surrounding the Vutcani Extension site, potential cumulative effects on birds are not considered to be significant. The other wind farms are at least 6 km from the Vutcani Extension site and therefore the effect of disturbance and barrier effects for birds is expected to be negligible, and potential cumulative effects on bats are not considered to be a significant issue.

The mitigation and monitoring measures that will be implemented will assist in confirming that there are no significant cumulative effects on birds.

The local topography limits views towards the site and views over distances of approximately 6 km are limited by intervening topography, vegetation and built form. Therefore cumulative landscape and visual effects are not considered to be an issue.

### 5.6 DECOMMISSIONING

A decommissioning plan will be prepared to ensure potential impacts associated with the removal of the turbines and associated infrastructure at the end of their operational life are adequately considered.

### 5.7 OTHER ENVIRONMENTAL DISCIPLINES

Based on the available information no significant environmental impacts or cumulative effects are considered likely on the following environmental topics and as such no mitigation measures have been proposed in relation to these:

- ground conditions and water resources;
- air quality;
- cultural heritage;
- electromagnetic interference;
- access; and
- shadow flicker.

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## 6. GREENHOUSE GAS ASSESSMENT

An estimate of greenhouse gas savings potential for this project has been calculated using EBRD's Greenhouse Gas Assessment Methodology, where renewable energy power generation projects are assumed to displace the emissions associated with the national average grid electricity generation.

Based on 14 2MW wind turbines in constant use with a possible annual generation of 63110 MWh the Vutcani Extension Wind Farm will provide CO<sub>2</sub> emissions savings in the order of 34,93 kt CO<sub>2</sub>-e/yr.

The above total does not take into account emissions associated with the construction phase and other life cycle impacts, and that wind turbines will not be in constant operation throughout a year.

## 7. ENVIRONMENTAL AND SOCIAL ACTION PLAN

An Environmental and Social Action Plan for EDP R Romania projects (ESAP Corporate) has been developed in July 2012 to set out specific environmental and social actions required to minimise impacts associated with the wind farm scheme. It is a 'live' document and will be updated on a regular basis.

The key considerations relevant to the wind farm include the following:

- Prepare and submit reports on status of ESAP implementation and environmental, health, safety and social performance, including resolution of grievances associated with the project;
- Develop and implement an Environmental Management System (EMS);
- Implement a monitoring programme to assess the impacts to birds and bats that may be occurring during the operational phase of the wind farm;
- Develop comprehensive waste management plans;
- Undertake a health and safety risk assessment of all staff job functions and activities and implement health and safety action plan covering control measures and work instructions as required; and
- Develop and implement a decommissioning plan that includes a plan for minimising impacts during decommissioning.

## 8. STAKEHOLDER ENGAGEMENT PLAN (SEP)

A SEP has been developed in February 2013 with the objective of identifying key stakeholders and ensuring that, where relevant, they are informed in a timely manner of the potential impacts of the project. The plan also identifies a formal grievance mechanism to be used by stakeholders for dealing with complaints, concerns, queries and comments. It will be reviewed and updated on a regular basis. If activities change or new activities relating to stakeholder engagement commence, the SEP will be brought up to date. The SEP will also be reviewed periodically during project implementation and updated as necessary. The SEP includes the following:

- Public consultations and information disclosure requirements;
- Identification of stakeholders and other affected parties;
- Overview of previous engagement activities;
- Stakeholder engagement programme including methods of engagement and resources; and
- A grievance mechanism.

Stakeholders could be individuals and organisations that may be directly or indirectly affected by the project either in a positive or negative way, who wish to express their views. The definition applied to identify the key stakeholders is:

***'any stakeholders with significant influence on or significantly impacted by, the work and where these interests and influence must be recognised if the work is to be successful'.***

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