

Environmental Due Diligence of a Wind Farm Project in Melfi, Province of Potenza, Italy

Final Report_rev 1

23rd June 2015



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Due Diligence of a Proposed Wind Farm – Melfi (PZ, Basilicata Region, Italy)

June 2015

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ERM Italia S.p.A.	
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23 rd June 2015	23 rd June 2015

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Executive Summary

The Project obtained the permit for construction and operation (Autorizzazione Unica) by the Basilicata Region (Competent Authority) on 5th March 2013. The approval set out some project prescriptions to be implemented during the entire initiative lifecycle (construction, operation and decommissioning). In particular the Autorizzazione Unica, including the Environmental Permit (Compatibilità Ambientale) and the Landscape Permit (Autorizzazione Paesaggistica), requires an Environmental Management and Monitoring Plan (EMMP) during construction and operation.

- The EMMP should include mitigation and monitoring measures to allow the monitoring of potential environmental impacts during the construction, operation and decommissioning phases, with particular reference to Waste Management, Noise, Biodiversity and Cultural Heritage. Before starting of the operations, ERM recommends that the “EMMP implementation” should be agreed with the Competent Authority in order to obtain the approval and the confirmations on methodologies, locations and parameters.
- The EMMP implementation is estimated to cost 600k€ for the entire project lifecycle (20k€/year over 30 years), including the initial baseline assessment (**MLC** and **RWC**).

The Autorizzazione Unica also specifies that the Soil Management (“*Terre e rocce da scavo*”) is required to be in compliance with the Italian regulation (D.Lgs 152/06).

- **MLC**: Assuming that 1% of the soil excavated will exhibit exceedances of regulatory limits, the remediation cost associated is 140 k€ ; **RWC**: Assuming that 5% of the soil excavated will exhibit exceedances of regulatory limits, the remediation cost associated is 700 k€

<i>Issues</i>	<i>Costs</i>
EMMP	<ul style="list-style-type: none">• Preparation: Minor cost (MLC and RWC)• Implementation: 600k€ over 30 years (MLC and RWC)
Soil management	<ul style="list-style-type: none">• MLC: 140k€• RWC: 700k€
Vegetation restoration	20k€ (MLC and RWC)

Limitations

The information and conclusions expressed in this desk-top based Phase I Environmental Due Diligence have been limited to a Virtual Data Room (VDR) organized by the Vendor.

Conclusions obtained are based upon ERM professional judgement and experience in assessing liabilities in similar operations. However, the conclusions obtained are limited to the quantity of information reviewed in the timeline available for review. Therefore, provided the limited scope of the assessment, the existence of material implications cannot be discarded even if specific potential environmental issues are not mentioned in this report or have not been found as of material cost therein. No Site visit was carried out by ERM at this stage. All environmental information provide in the VDR are considered adequate by ERM. Based on analysis of the public database, no specific environmental constraints are currently presents on the windfarm project area.

The findings of this Assessment should be read in conjunction with the findings of other due diligence work streams e.g. legal, security, technical, communication or external affairs.

The business plan analysis, the Health&Safety aspects and the Environmental permitting issues (as reported by Glennmont a Legal Due Diligence has been already performed for this purpose) are not part of this scope of work.

The focus of the assessment was on the Project's Environmental Impact Assessment (EIA) and associated Environmental requirements/prescriptions to be complied with during the construction works.

This report is confidential to Glennmont Clean Energy Fund Europe II Cooperative UA. (from now onwards Glennmont) and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party rely upon the report at their own risk.

Introduction and Due Diligence Criteria



ERM was commissioned to undertake a limited desktop-based **Environmental Due Diligence (EDD)** in relation to a proposed wind farm in Melfi (Basilicata Region, Southern Italy).

All of this program was undertaken using documentation provided through a VDR.

The VDR was populated with several documents by the client including permitting procedures, Environmental Impact assessment (EIA), project designs (authorized and executive), and technical studies related to physical environment interactions such as acoustic assessment. ERM has reviewed all the documents present in VDR as of 1st June, 2015.

According to the SoW, the objective of the desktop EDD is to identify any potential weaknesses in the EIA process regarding the location of the Target site and to develop recommendations to address these liabilities and estimate associated cost or project development delay in terms of environmental risks.

Issues which have been considered as material are those which do or could materially impact the business and:

- Are in excess of 20,000 Euro per issue; or
- Have the potential to lead prosecution of Glennmont or impact Glennmont's reputation from an environmental perspective.

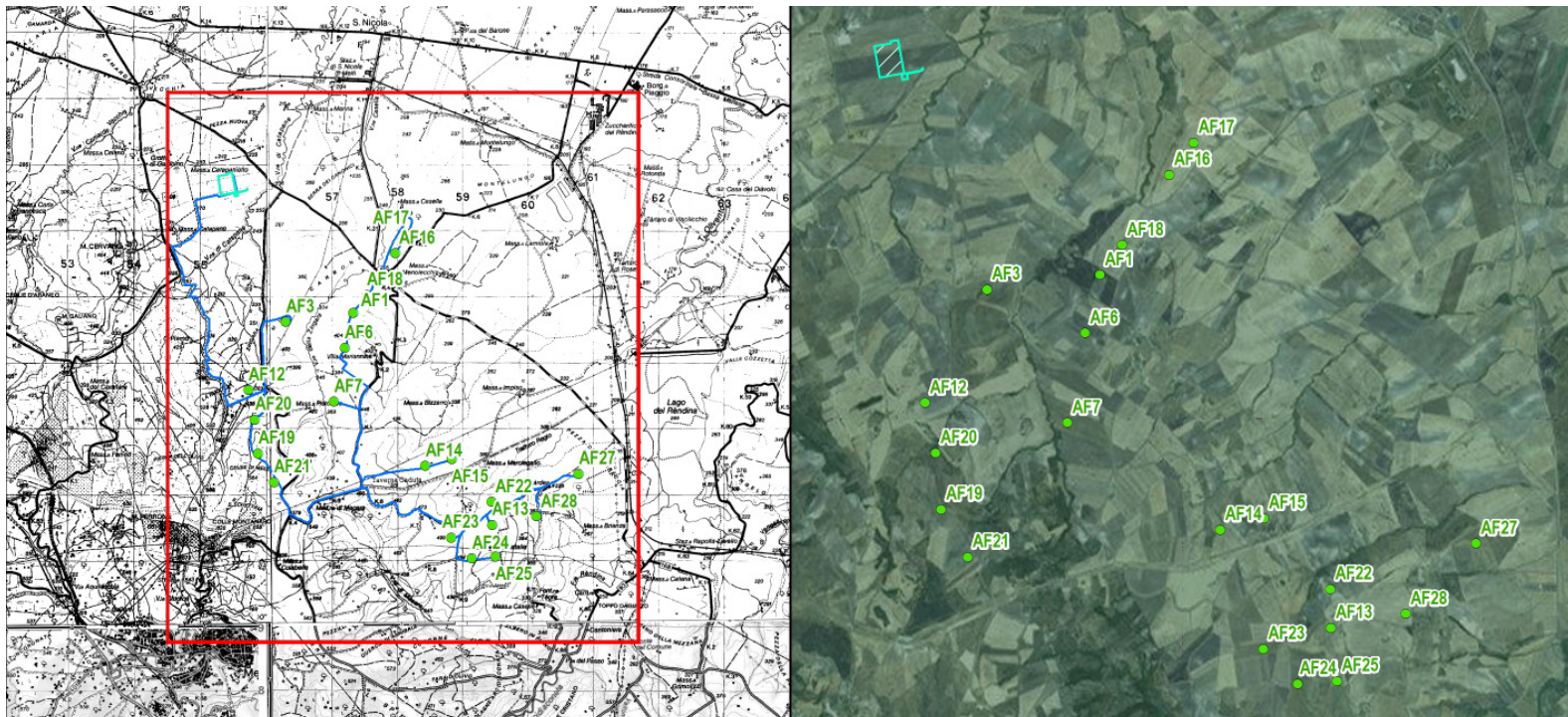


Where possible, for each significant (material) issue, an estimate of costs to address the issue in the **Most Likely Case (MLC)** and **Reasonable Worst Case (RWC)** is provided by ERM.

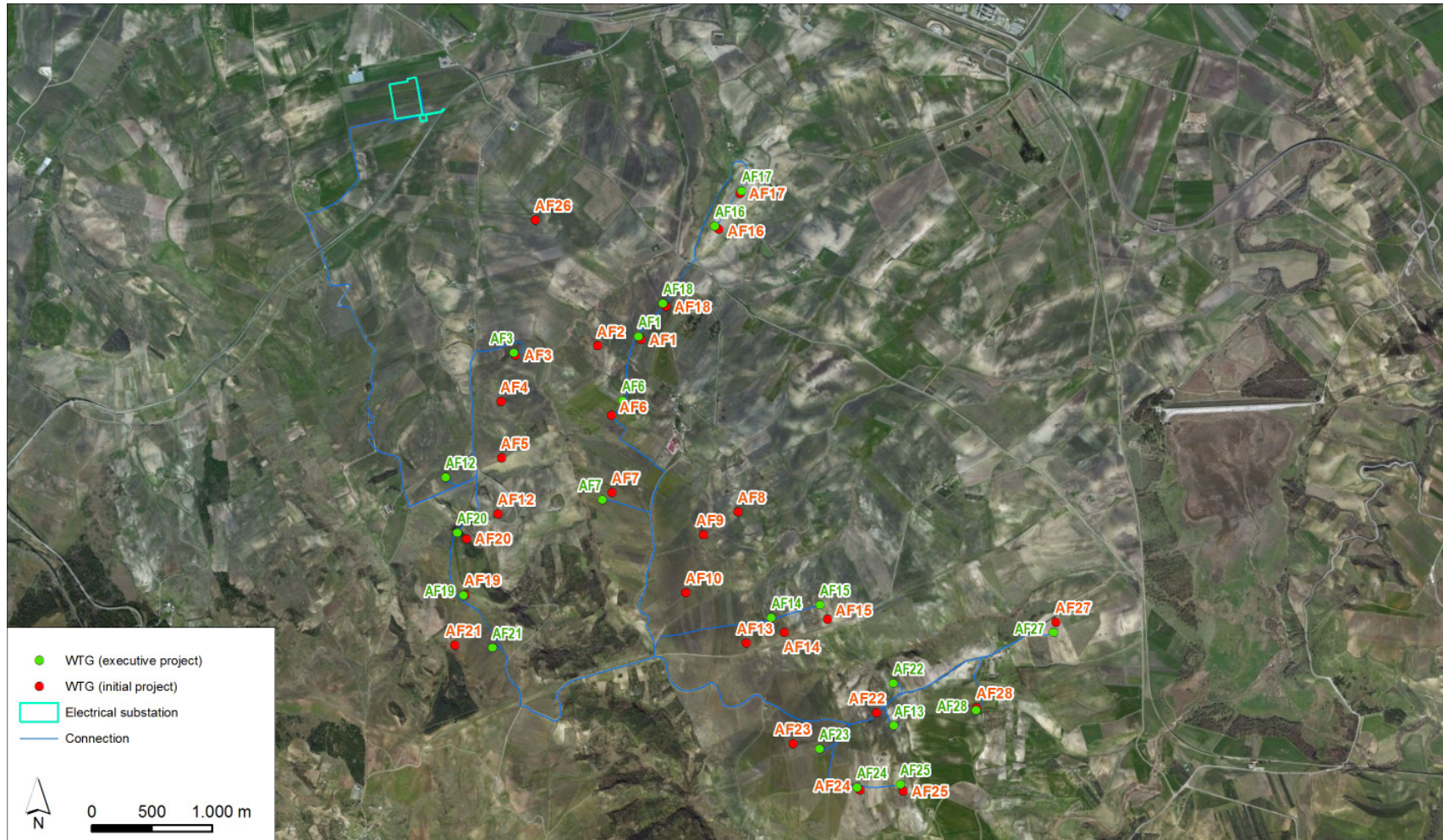
The Target

The target site is the location where a wind farm will be built (Municipality of Melfi, Province of Potenza (PZ), Basilicata Region, Italy):

- Project developed by *FINPOWER WIND s.r.l.*
- Surface: approximately 700 ha
- The executive wind farm project consists in 20 Wind Turbine Generators “WTGs” of 3 MW each one (model Siemens SWT 3.0 with a diameter of 113 meters and a height of 92,5 meters) for a total power of 60 MW, interconnection cables and a substation that collects the power produced to the public grid.



Initial Project vs Final Project



After the first application for the installation of 27 WTGs of 3,3 MW each one for a total power of 89,1 MW (red WTGs in the figure above), the project is changed in terms of layout and power (the final layout is composed of 20 WTGs of 3,00 MW each for a **total power of 60 MW** (green WTGs in the figure)).

Environmental Impact Assessment (EIA)

- According to the Italian Legislation, the Environmental Impacts Assessment (EIA) document available in VDR includes the:
 - Legislation framework (named “Quadro di Riferimento Normativo”);
 - Project section that describes the windfarm, the general wind energy context, details the sites alternatives and the site selection (named “Quadro di riferimento Progettuale” and “Valutazione delle alternative”);
 - Environmental framework (named “Quadro di riferimento Ambientale”); and
 - Impacts Assessment (named “Valutazione degli Impatti”).
- The project description of the EIA (and subsequent variations) fully describes WTGs characteristics. The activities to carry out during the decommissioning phase are reported in an appropriate technical report attached to the technical projects.
- Based on analysis of the public database, EIA reports that the following constraints are not currently presents on the windfarm project area:
 - Protected areas (Sites of Community Importance (SIC), Special Protection Zones (ZPS)
 - Environmental constraints: Woodlands, waterbodies, historical roads, hydrogeological risks.
 - The windfarm is in compliance with the Regional Energetic Plan (PIEAR) in terms of minimum distance between the WTGs; and
 - The windfarm is not located within the Municipal restricted area regarding the guidelines for windfarms.
- The EIA (and subsequent variations) has been approved by the regional authority through the issuing of the Environmental Permit (named Compatibilità Ambientale), expiring in 2018.

Environmental Impact Assessment (EIA)

The following sections/issues regarding the EIA of the windfarm are discussed as follows:

- EIA permit Procedure
- Environmental Impact Assessment Analysis
 - Hydrology
 - Soil
 - Biodiversity
 - Air Emissions
 - Noise
 - Land use
 - Landscape
 - Waste
 - Archaeological Risk
 - Analysis of Constraints

Environmental Impact Assessment (EIA)

EIA Permitting Procedure

The EIA report was submitted in March 2011 as part of the construction permit application (Autorizzazione Unica) presented the impact assessment for the wind farm first composed by 27 WTGs of 3,3 MW each one for a total power of 89,1 MW and located in the Municipality of Melfi.

On 5th June 2012, the Region of Basilicata issued the **Environmental Permit (Compatibilità Ambientale)** and the **Landscape Permit (Autorizzazione Paesaggistica)**. All subsequent non-material variations submitted to the Authorities by FINPOWER WIND did not change the Environmental Permit which it is currently valid up to March 2018 as reported in the Regional Deliberation No 340/2014.

According to **Compatibilità Ambientale (prescription point. 9)**, the Proponent must reduce the number of WTGs (from 27 to 20), prepare a **yearly technical report** regarding the restoration and monitoring measures, restore the areas after the construction phase and manage the soil excavation during the construction.

- **To satisfy the requirement of implementing restoration and monitoring measures, ERM recommends preparing an Environmental Monitoring and Management Plan (EMMP), and estimates a cost for the soil management during the construction in order to comply with the requests proposed by Authority.**
- The EMMP is supposed to set out measures which allow monitoring potential environmental impacts of the **construction, operation and decommissioning phases**. Even if sharing the EMMP with authorities is not mandatory by law, based on ERM experience in Basilicata Region, it is recommended to share the EMMP with the regional authorities and get their approval before starting its implementation by confirming methodologies, monitoring locations and parameters for the environmental topics involved.

The preparation of the EMMP document is not a material cost for MLC and RWC scenarios. After the approval by the Authority, **the implementation of the EMMP could be estimated up to 600k€ (approximately average 20k€/year) for the entire project lifecycle (assumed 30 years starting to the construction as indicated in the EIA)**, including the initial baseline assessment that should be done to define the baseline environmental conditions.

Environmental Impact Assessment (EIA)

Hydrology

The approach is adequate to general practices. No specific issues have been raised. Oil Spill System Containment (basins and drain channel) must be constructed in agreement with the Project Technical description attached to the EIA report.

- Technical requirement for water body crossing with the cables, when possible to realize, are reported in the EIA permit.

No issues identified neither for the operation nor for the construction phase.

Soil

- Based on the available documents reviewed, the approach is adequate to general practices. The impact will be limited during the phase construction for the soil excavation (near to each WTG area and temporary area) and no relevant impacts have been identified by the EIA. Soil management (*terre e rocce da scavo*) is required to be in compliance with the Italian regulation (D.Lgs 152/06) in the EIA permit.
- Geological and seismic survey is included in the EIA and in the project modifications subsequent to the Environmental Permit for the same EIA.
- UXO (Unexploded Ordnances) survey has already been performed as indicated in the permit issued by the Authority on 25th May 2015. No issues have been identified.

MLC: Assuming that 1% of the soil excavated will exhibit exceedances of regulatory limits, the management cost associated is estimated at 140 k€.

RWC: Assuming that 5% of the soil excavated will exhibit exceedances of regulatory limits, the remediation cost associated is estimated at 700 k€.

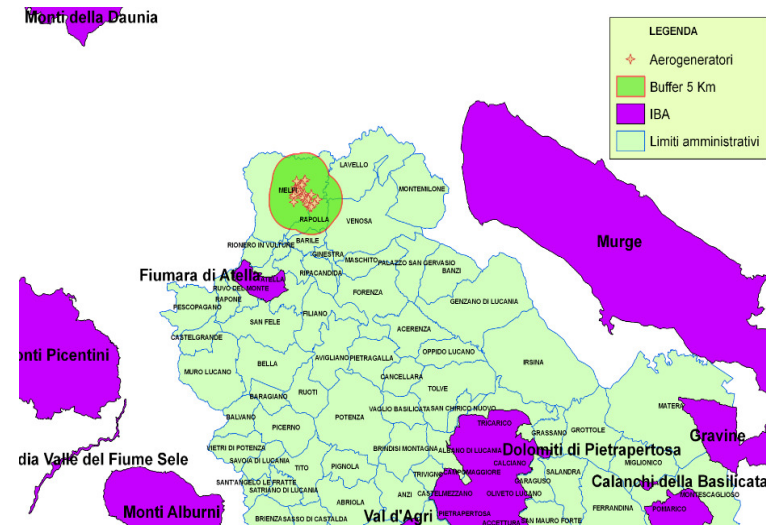
Environmental Impact Assessment (EIA)

Biodiversity (1)

Flora (Vegetation): the approach is adequate to general practices;. The areas affected will be restored using local vegetation species. The cost associated to the **vegetation restoration** (along the connection) with 4 local species after the construction phase is estimated at **20 k€**. **The vegetation Monitoring Plan should be included within the EMMP.**

Avifauna (Birds):

- The ecologic study, included in the EIA and based on the bibliographical ecological assessment, identified approximately 20 bird species attending the Project area, which is located 13 km away from the Important Bird Areas (IBA) No.209 called “Fiumara di Atella”.

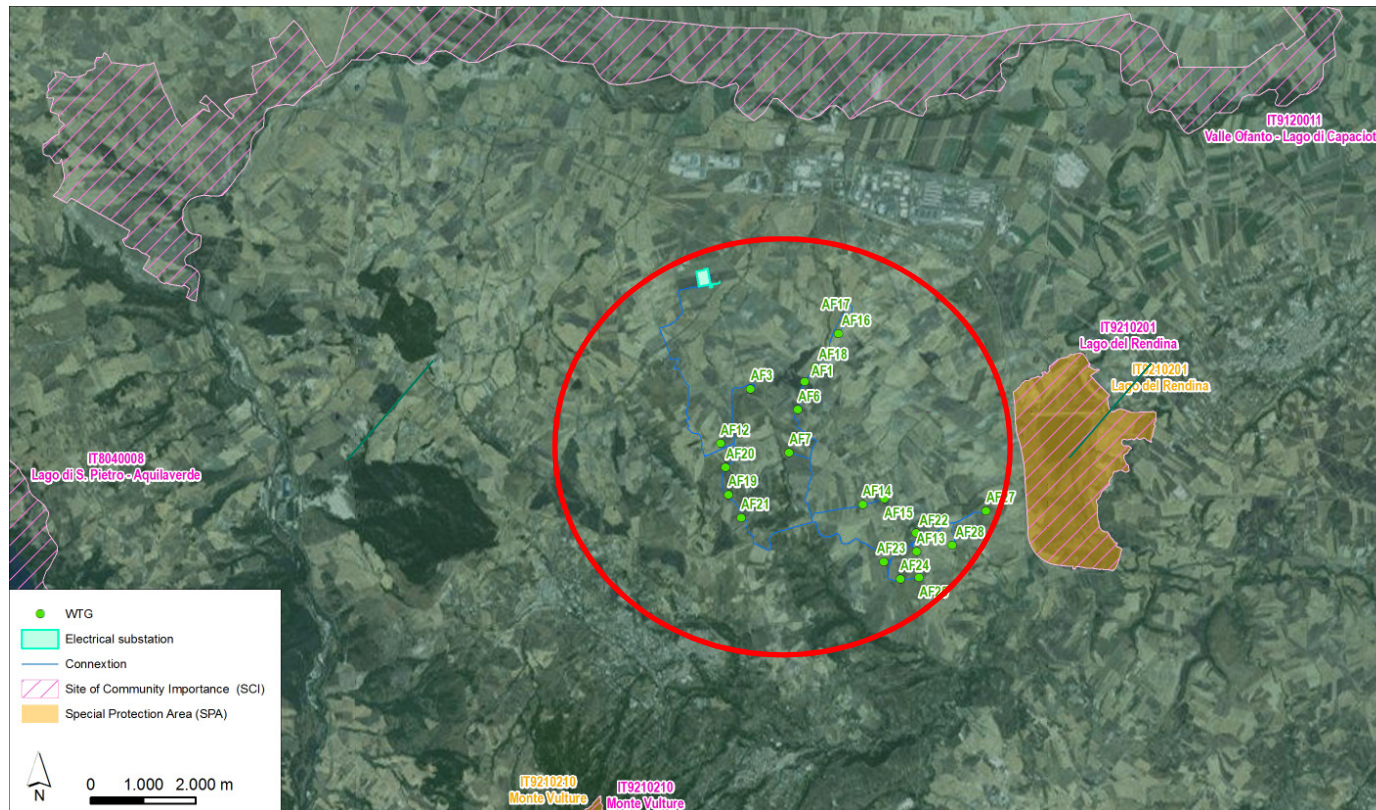


- The EIA impact assessment defined the potential impact on birds as low assessing several mitigation measures and required in the positive opinion for the EIA (i.e. implementation of colored and / or reflective signalers along the power lines, start of the construction phase after the nesting period to avoid direct impact, realization of new areas for increase and improve the nesting). **A Biodiversity monitoring plan for the birds should be included in the EMMP**

Assessment: Environmental Impact Assessment (EIA)

Biodiversity (2)

- The EIA has not identified impacts of the project on the protected areas, as the distance between the project site and the protected/sensitive areas is sufficient to ensure the absence of significant impact on the biodiversity of these areas as described in the specific ecological study (named studio ecopedologico, faunistico e vegetazionale) included in the EIA (annex A17). **No issues identified neither for the operation nor for the construction phase**



Assessment: Environmental Impact Assessment (EIA)

Air Emissions

- Expected emissions from the construction phase have been evaluated by means of a qualitative approach. No emissions are foreseen in operation phase. The study reported that air emissions will be limited during the construction mainly due to the machinery and equipment used and no significant impact is expected. Usual practices during construction will be implemented in order to prevent dust emissions (e.g. water using) .

No issues identified neither for operation nor for construction phase

Noise Emissions

- The EIA report (annex A17c) adequately covers the noise emissions according to general practices:
 - Both during the operational and construction phases impacts have been evaluated as low.
 - During the construction phase temporary noise insulating will be used around sensitive receptors.
 - Mitigation measures: the construction works will be performed during the day time and the equipment (in particular the electrical generators) will have a low noise emission.
 - During the operation phase the noise level will be in compliance with the national decree “DPCM 1/3/1991” for the agricultural areas. No mitigation measures are foreseen to reduce the noise level during this phase during the distance with the receptors.

ERM recommends to implement an acoustic survey within the EMMP

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Environmental Impact Assessment (EIA)

Land use

- Lands affected by the Project are mainly agricultural areas (arable land).
- No specific issue related to land use is raised in the EIA.
- The Site will be compulsory purchased for public use.

No issues identified neither for the operation nor for the construction phase.

Landscape

- The EIA report adequately covers the landscape analysis according to general industrial practices.
- Landscape Assessment Document was approved by the Authority Basilicata Region on 5th March 2013 and the Landscape permit is include in the Building Permit "AU".
- The Landscape Permit required the elimination of 4 WTGs (AF2, AF4, AF5 and AF26).
- No WTGs within areas with landscape constraints.
- The Landscape impact of the windfarm is not relevant because in the same area are already presents constructions with a Landscape impact more significant (e.g. industrial area FIAT-SATA and the aerial electrical line Matera-Santa Sofia). Limited impacts only during the construction phase.

No issues identified neither for the operation nor for the construction phase.

Environmental Impact Assessment (EIA)

Waste

- Waste management is required to be in compliance with the Italian regulation (D.Lgs 152/06) in the EIA permit.
- The EIA report does not adequately cover waste generation during the construction activities. **Expected waste types and quantities are not detailed for decommissioning phase except to the annual amount of the oil used for maintenance purpose of the transformers in the operation phase.**

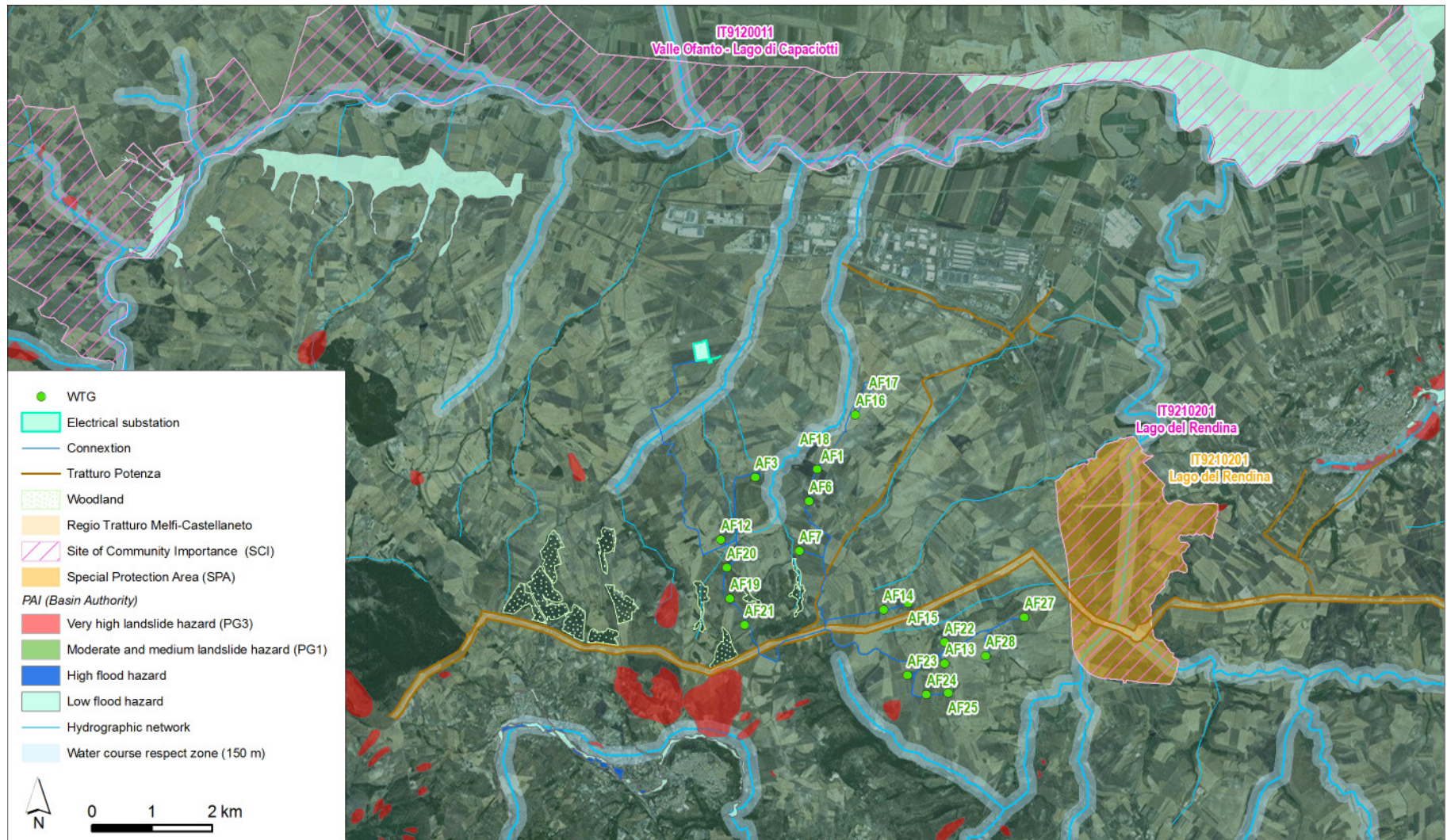
ERM recommends to implement a Waste Management Plan within the EMMP.

Archeological Risk

- No specific issues related to archaeological risk assessment have been raised in the EIA report. Within the preventive archaeological technical report (annex A4 of the EIA study) several areas have been classified as **low archeological risk**.
- As per Italian Legislation, during the construction phase a qualified local Archaeologist should supervise the construction work activities.
- The landscape permit required the elimination of the WTG “AF26” being within the archeological area named “Serra dei Canonici”.

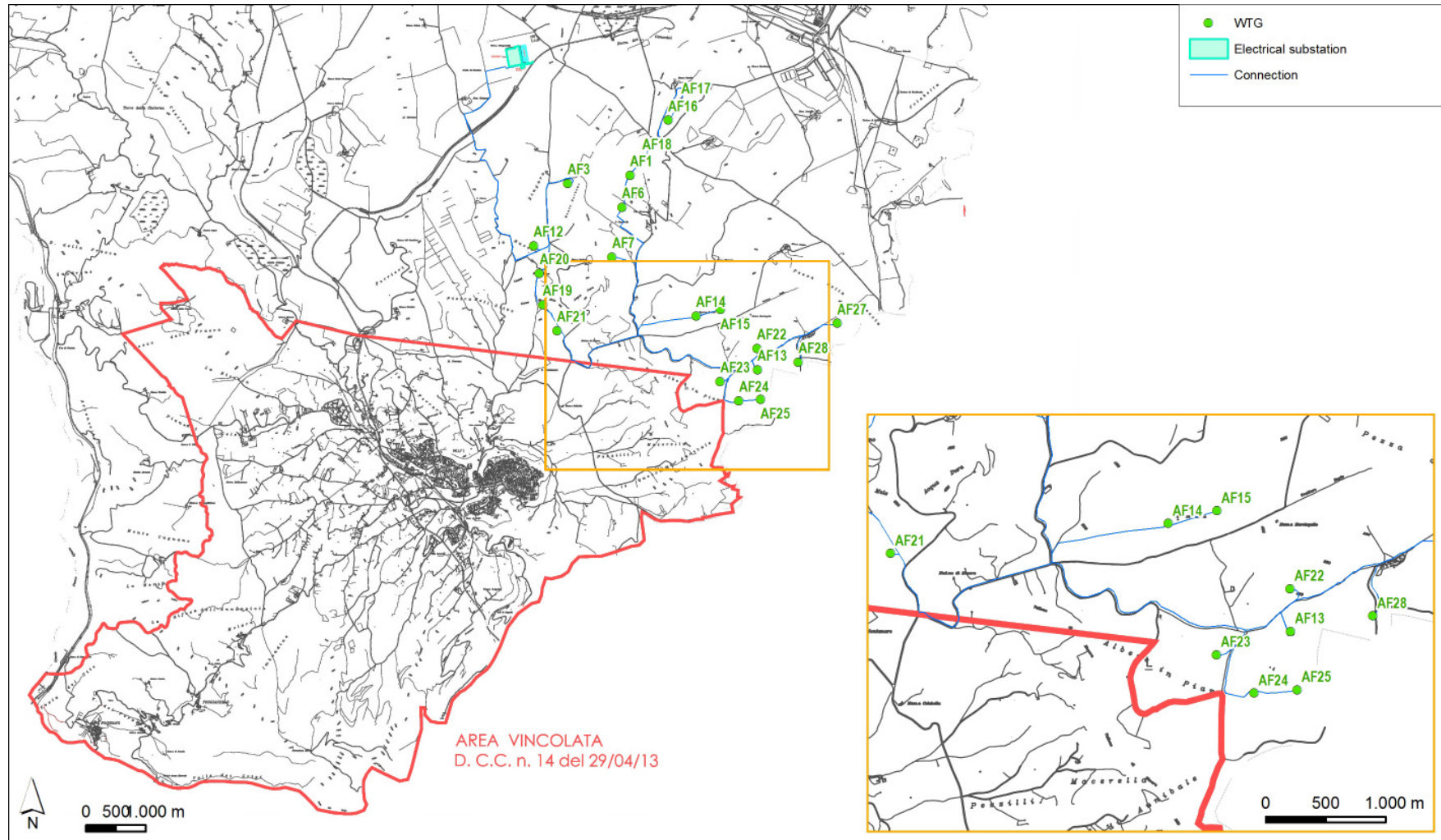
ERM recommends to implement a Cultural Heritage Management Plan within the EMMP.

Environmental Constraints



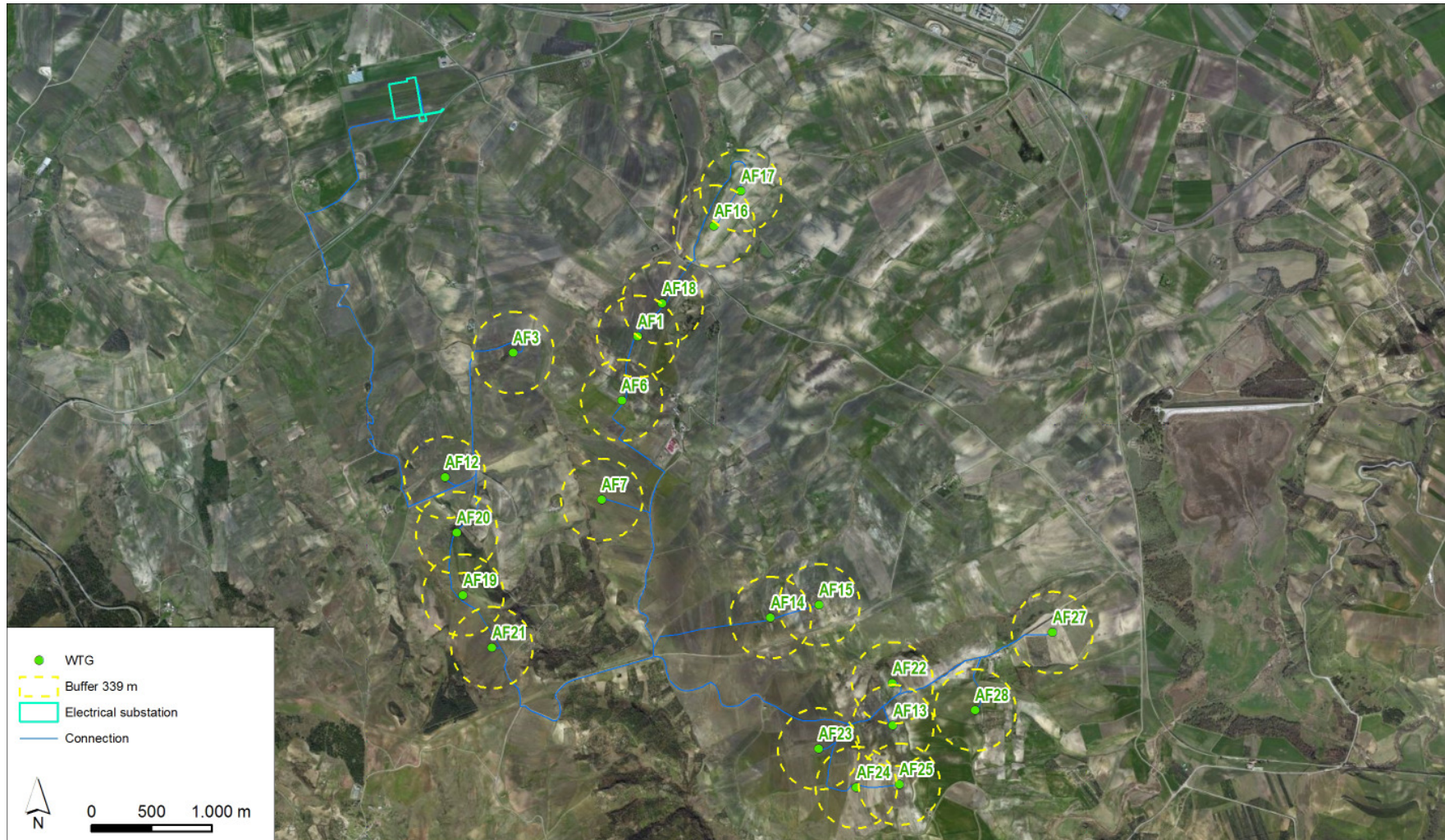
The project is not within any restricted areas (woodlands, waterbodies, historical roads, hydrogeological risks, sites of community importance, special protection zones)

Municipal Constraints for the Windfarms



According to the Deliberation of the Municipality (Delibera Giunta No.89 dated 12/06/2009) regarding the local guidelines for windfarm, **the project is not within the restricted area** (<http://www.comune.melfi.pz.it/index.php?pagina=1514>).

Regional Energetic Plan requirements



For the windfarm >1 MW, the Regional Energetic Plan (named PIEAR) requires that the WTG distance has to be $> 3 \times \text{Diameter of the Rotor}$ (113 meters $\times 3 = 339$ m). The windfarm is in compliance with the PIEAR.

References

- **List of the main documents reviewed by ERM in the VDR :**

EIA Communication (Prot. 0035676/7SAB) dated 29/02/2012 issued by Basilicata Region;
EIA Communication (Prot. 0098748/7SAB) dated 05/06/2012 issued by Basilicata Region;
EIA Communication (Prot. 0203473/7SAB) dated 15/11/2012 issued by Basilicata Region;
EIA Communication (Prot. 0206098/7SAB) dated 20/11/2012 issued by Basilicata Region;
EIA Communication (Prot. 0206098/7SAB) dated 20/11/2012 issued by Basilicata Region;
Construction and Operation Permit Application n. 246 dated 05/03/2013 issued by Basilicata Region;
EIA Communication Prot. 0162903/7SAB dated 08/10/2013 issued by Basilicata Region;
Extension request dated 21/01/2014 submitted by FINPOWER;
Regional Law (Determina Regionale) n. 151 dated 13/03/2014 issued by Basilicata Region;
Regional Law (Determina Regionale) n. 340 dated 21/03/2014 issued by Basilicata Region;
Communication for construction start dated 19/03/2014 submitted by FINPOWER;
EIA Communication (Prot. 0004267/719AB) dated 12/01/2015 issued by Basilicata Region;
Extension request dated 22/05/2015 submitted by FINPOWER;
Local development Plan of Municipality of Melfi dated 27/11/2014;
Terna STMD (Prot. 0013959) dated 04/12/2014;
Terna Modello 5b STMD (Prot. D020377) dated 04/12/2014;
Terna Agreement for the connection to the national grid (Prot 090003337);and
EIA Study and technical reports (seismic, geological, ecological, Acoustic, UXO).

Appendix: Permitting Context (1)

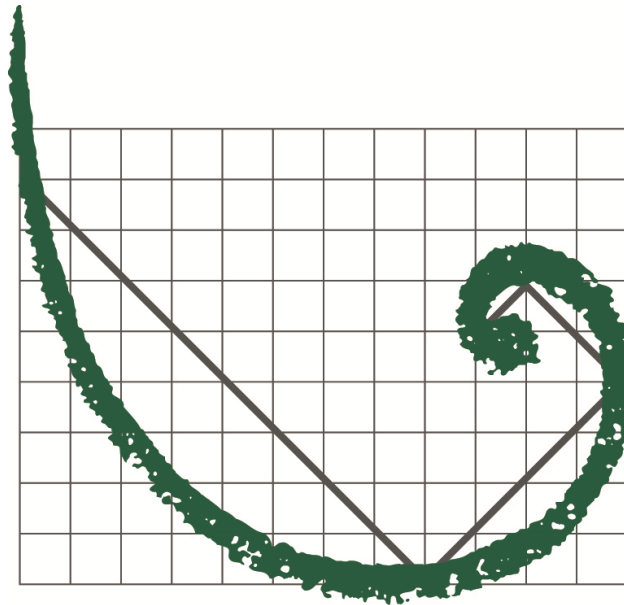
After the first application for the installation of 27 WTGs of 3,3 MW each one for a total power of 89,1 MW, the project has changed in terms of power/layout and in terms of permits as follows:

- On **5th March 2013**, a **total power of 64 MW** (20 WTGs of 3,2 MW each one) was authorized by **decree n. 246** issued by the Basilicata Region. The decree contains the **Building Permit** (named **Autorizzazione Unica – AU**) including the **Environmental Permit** (named **Compatibilità Ambientale**) in terms of Environmental Impacts Assessment (EIA) and the **Landscape Permit** (named **Autorizzazione Paesaggistica**) both dated 5th June 2012 and valid up to June 2017. According to the first AU, the construction activities had to start within one year from obtaining of the AU (20th March 2014) and had to be concluded within three years (20th March 2016), after which the AU will expire.
- On 21st January 2014, FINPOWER WIND submitted the **extension request in order to start the construction works** within 20th September 2014. On the 21st March 2014 by, the Authority accepted the extension for the beginning of the construction works postponing the conclusion of the construction works by March 2018;
- FINPOWER WIND proposed **two non-material modifications** (subsequent to the issuance of the AU) consisting in the installation of the 20 WTGs of 3,00 MW each (instead of 3,2 MW) for a **total power of 60 MW** (instead of 64 MW) and, as requested by the Municipality of Melfi in order to reduce visual **and** land use impacts, **the relocation of 4 WTGs and of the electrical substation**. The Authority accepted the new power and the relocation respectively on 13rd March 2014 and 12nd January 2015;
- On **19th March 2014**, FINPOWER WIND submitted to the Authorities the requested communication including the **beginning of the construction works**, the executive project design and the payment fees;
- On 12th January 2013, the company FINPOWER WIND was included in the rankings of the auction for the incentive and, in accordance with the Italian Legislation on Renewable plants (except for the photovoltaics plants) «Ministerial Decree dated 6th July 2012», **the on-shore windfarms will have to start to operate within 28 months** after the public announcement (**therefore by December 2015**). After this deadline, the incentive will have a penalty of 0,5% per every month delayed (for a maximum amount of 24 months).

Appendix: Permitting Context (2)

- On 8th February 2013, the “expropriation for public use” procedure started by means of a communication of the Basilicata Region (**ongoing procedure**).
- On 28th November 2014, FINPOWER WIND signed the final Local Development Plan (named PSL) with the Municipality of Melfi regarding the expenses, financial contributions and works that should be performed by the Company in terms of environmental mitigation measures (as reported in the same PSL, point 3.1, e.g. Photovoltaic Plants and several social utilities). The PSL includes the following payments performed by the company: 400 k€ by December 2014, 300 k€ by December 2015 and 320 k€/year (for the first ten years) after the beginning of the operation of the wind farm.
- On 4th December 2014 , the public supplier of electricity TERNA sent the final technical solution (named STMD) to FINPOWER WIND for the grid connection project with requirements regarding timeline for the design/connection works (20 months for a new electrical substation, 8 months + 1 month/km for the connection to the 380 kV Matera-Bisaccia line), the connection fee (approximately 84,000 Euro) and the **connection agreement** (application No. 090003337).
- On 22nd May 2015, FINPOWER WIND submitted another **extension request in order to postpone the construction** activities conclusion within 20th March 2019 according to the Compatibilità Ambientale and the Autorizzazione Paesaggistica both valid up to March 2018 and included in the Autorizzazione Unica.

This last extension is currently ongoing.



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