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	F		
	E		
	D		
	C	<b>2026-02-26</b>	Mandatory condition for purchase
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## Abstract

This document describes the technical characteristics of a wind farm consisting of 8 Vestas V47 turbines, currently installed and operational in Italy. The turbines are used but in excellent condition.

Each turbine is complete with the main components required for operation, including the tower, frequency converter, electrical control panels, hydraulic systems, medium voltage equipment and auxiliary parts such as PLCs and various cables. Bolts and anchor cages are not included.



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## Nomenclature

AC	Alternating Current
AVR	Automatic Voltage Regulator
DC	Direct Current
DCS	Distributed Control System
EPC	Engineering, Procurement and Construction
HMI	Human-Machine Interface
I/O	Input / Output
ISO	International Organization for Standardization
LHV	Lower Heating Value
LV	Low Voltage
MCC	Motor Control Cubicle
MV	Medium Voltage
HV	High Voltage
N/A	not applicable / not available
OEM	Original Equipment Manufacturer
P&ID	Process & Instrumentation Diagram
PC	Personal Computer
PFD	Process Flow Diagram
PLC	Programmable Logic Controller
WTG	Wind Turbine Generator
TBD	To be determined / To be defined

# 1. Introduction

Complete wind turbines available for relocation, this document describes the various characteristics of the turbines and their current status. The subject of the opportunity is as follows: 8 Vestas V47 wind turbines, each with a capacity of 660 kW.

General Data	
Manufacturer	Vestas
Model	V47-660
Quantity	8
Power	660
Available from	January 2026
Country	Italy
Condition	New
Year of construction	2001

# 2. Description of Supply

## 2.1 Wind Turbine Vestas V47 660 kW

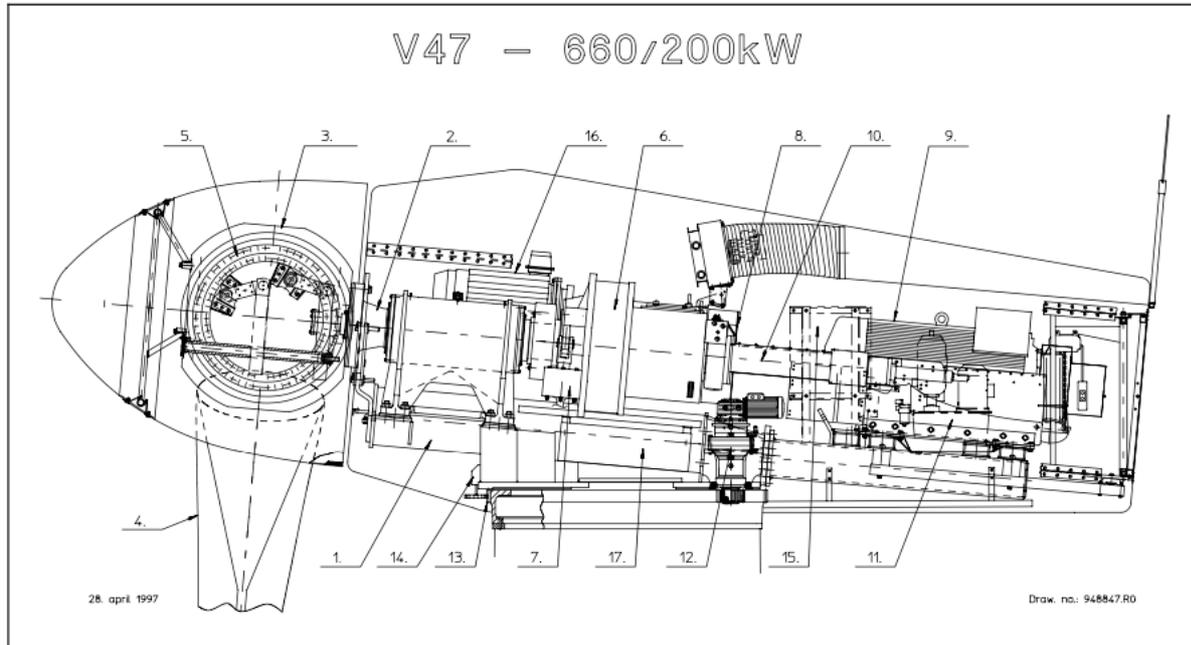
The Vestas V47-660 kW wind turbine is a stall-regulated, upwind turbine with variable pitch and a three-bladed rotor. The adjustable pitch allows the blades to rotate along their longitudinal axis to control rotor speed, optimize energy production, and stop the turbine.

The blades are made of fiberglass with sandwich-structured shells mounted on prepreg support beams. The blades are attached to the extensions via glued aluminum root joints, and the extensions are bolted to the hub. The mechanical energy from the rotor is transmitted to the gearbox through the low-speed shaft; the gearbox is a combined planetary-helical system and transfers energy to the generator via a cardan shaft.

The V47-660 kW model features two generators with nominal outputs of 660 kW and 200 kW, each with independent gearing and connection to the gearbox. All turbine functions are monitored and controlled by the VMP (Vestas Multi Processor) control unit, while a hydraulic/mechanical system adjusts the blade pitch and operates the hydraulic disc brake on the high-speed shaft of the gearbox.

In emergencies, the turbine is stopped by feathering the blades (aerodynamic brake) or by the emergency stop button, which engages both the aerodynamic and hydraulic disc brakes.

Yawing is performed by two yaw motors engaging a gear ring at the top of the tower; the bearing system is sliding-type with integrated clutch. The nacelle is fully enclosed in reinforced fiberglass, with access via the tower and a rear opening for lifting tools or spare parts using a crane.



- |    |               |     |                      |
|----|---------------|-----|----------------------|
| 1. | Base frame    | 9.  | Generator            |
| 2. | Main shaft    | 10. | Cardan shaft         |
| 3. | Blade hub     | 11. | Hydraulic unit       |
| 4. | Blade         | 12. | Yaw gear motor       |
| 5. | Blade bearing | 13. | Yaw ring             |
| 6. | Gearbox       | 14. | Yaw control          |
| 7. | Gear tie rod  | 15. | VMP top control unit |
| 8. | Disc brake    | 16. | Small generator      |
|    |               | 17. | Generator shift box  |

## 2.2 Technical data

### 2.2.1 Rotor

Diameter:	47 m
Swept area:	1,735 m <sup>2</sup>
Rotor speed:	28.5 rpm
Rotation direction:	Clockwise (front view)

### 2.2.2 Tower

Exact hub height:	50.1 m
Base diameter:	3.3 m
Top diameter:	2.0 m
Weight: approx.	38,000 kg

#### External surface treatment:

- Sandblasting: SA 3
- Metallizing: 60 µm Zn
- Primer: ≥ 90 µm
- UV-resistant top coat: ≥ 50 µm
- Corrosion class: 3

#### Internal surface treatment:

- Sandblasting: SA 2.5
- Zinc primer: ≥ 40 µm
- Top coat: ≥ 100 µm
- Corrosion class: 2

### 2.2.3 Gearbox

Type:	Planetary + helical
Ratio:	52.6514

### 2.2.4 Main Generator (660 kW)

Type:	Asynchronous, variable slip
Rated power:	660 kW
Voltage:	690 VAC
Frequency:	50 Hz
Protection class:	IP54
Number of poles:	4
Speed:	1515–1650 rpm
Rated current:	628 A

Power factor: 0.88 (resultant 0.98)

### **2.2.5 Controller**

Power supply: 3×690 V, 50 Hz

Lockable circuit breaker: 630 A

Generator cut-in: via thyristors

Power factor correction: 250 kVAr

### **2.2.6 Weights**

Complete nacelle: approx. 20,400 kg

Rotor incl. hub: approx. 7,200 kg

### 2.3 Power curves – Vestas V47 660kW

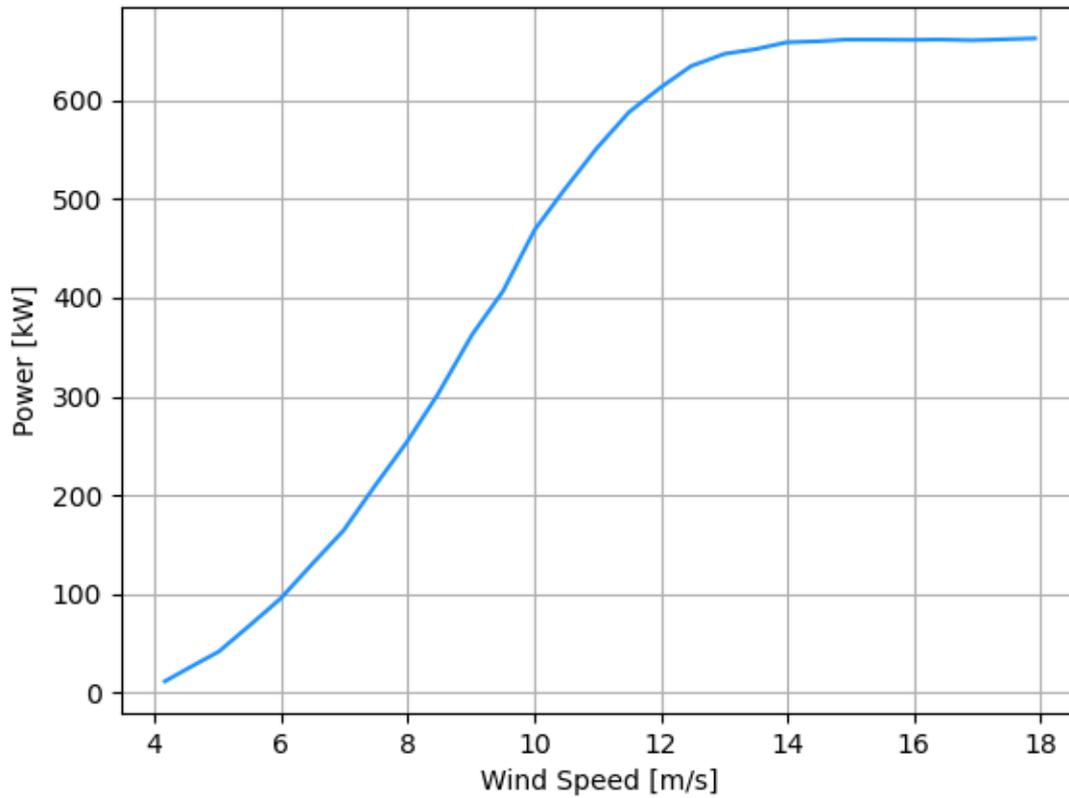
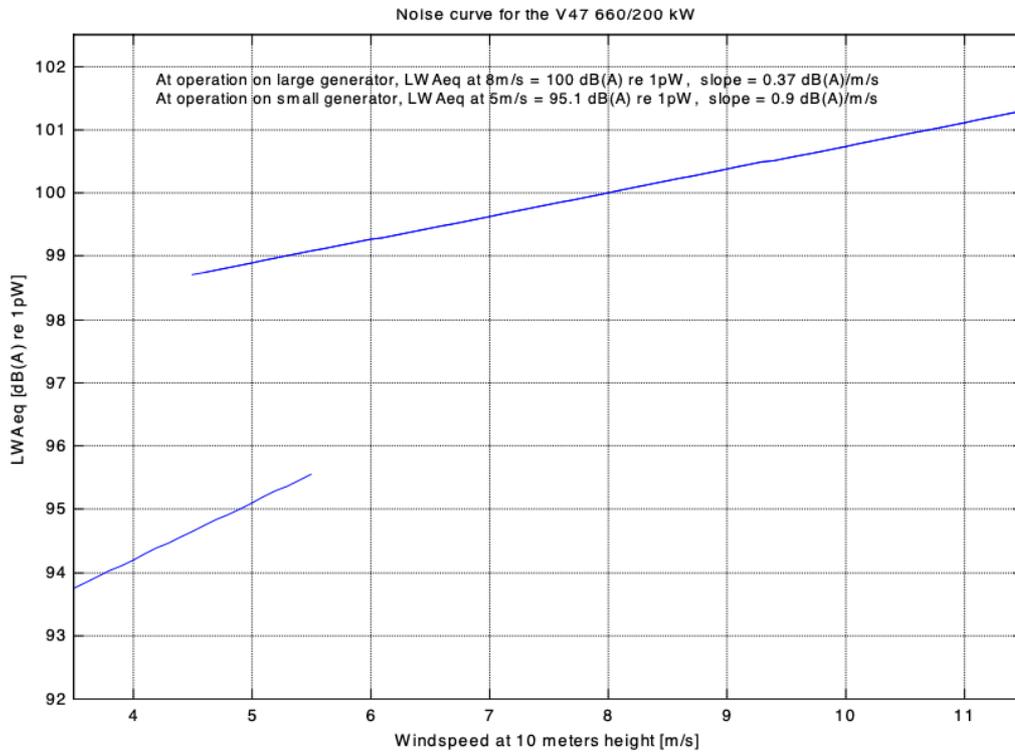


Figure 1: Power curve Vestas V47

## 2.4 Noise emission



**Figure 2: Noise emission**

### 3. Wind turbine status

Intentionally left blank

### 4. Scope of Supply

Position	Quantity	Description
1000		Wind Tubrine
1001	41	<b>Wind turbine</b> <ul style="list-style-type: none"> <li>• <i>Manufacturer: Vestas</i></li> <li>• <i>Model: V47 660kW</i></li> </ul>

**Table 1:** scope of supply.

#### 4.1 Exclusions

Scope not explicitly listed in the Scope of Supply (Table 1) is excluded.

The following items are explicitly excluded:

<b>Mechanical</b>
Modification of any existing systems not explicitly cited.
Missing parts and components.
<b>Electrical</b>
Modification of existing systems not explicitly cited.
<b>Civil</b>
Land and land preparation and permits
Temporary accesses and final accessing roads
Security plan and hardware
Temporary accommodation
Finishing and fencing

Waste disposal facility
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**Table 2:** exclusions from the Scope of Supply.

<b>Project Management</b>
Attainability of installation, commissioning and operation permits, or any other permit.
Assessment and acceptance of safety relevant issues.
Any study, engineering, documentation, or other service.
Additional works resulting from changes in laws or any other reasons.
Building of Site Facilities of any kind (lights, water supply and treatment, heating, power supply, etc.).
Custom duties and taxes.
<b>Engineering</b>
Feasibility studies, basic, design and detailed engineering of existing equipment.

**Table 3:** exclusions from scope of Services.

## 5. Mandatory condition for purchase

The following material may be sold under the following conditions:

The Purchaser declares to accept the Products in the absence of the necessary certifications required by the applicable legislation and technical regulations and declares to be qualified to recondition, recertify and secure the Products for future reuse, or to use qualified parties to recondition, recertify and secure the Products for future reuse if not directly able to carry out the aforementioned activities. Therefore, the Purchaser declares to accept the Products, even if they are working, in conditions of out of service and undertakes to carry out the necessary compliance activities, which are essential for the purposes of any subsequent use. As a result, the Seller is relieved of any type of liability related to the lack of the aforementioned technical certifications.

The Seller also reserves the right to ask the Buyer for evidence of the recertification and compliance of the Products by the Buyer (or by a qualified party used by him, in accordance with the provisions of this clause).

In any case, the Purchaser shall be held liable (i) for the above-mentioned compliance activities, as well as (ii) for any obligation subsequent to this sale, deriving from the autonomous management of the Products in accordance with the regulations applicable to them.