



# Motor Verde

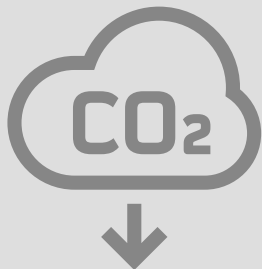
## Green Engine

Large-scale Forestation program for CO<sub>2</sub> offsetting  
with an **economic, social and environmental impact**  
in Spain and Portugal



# What is Motor Verde and what is its vision for the future?

Green Engine/Motor Verde is an **offsetting initiative based on large-scale forestation projects within the voluntary carbon market**, which seeks to also drive regional development **through its triple impact** (social, environmental and economic)



## PROJECT GOALS

- To become a **reference** in the emissions offsetting sector in the South of Europe
- To make use of the **best available technologies** for a robust **credit certification**
- To promote **development** at a local level generating social impact
- To enhance natural resources and support the forestry sector to position **Spain/Portugal as a preferential carbon sink**

## ACTIVITIES INVOLVED

- 1 Land allocation for Afforestation, Reforestation and Restoration
- 2 Rural and social development
- 3 Monitoring, Reporting & Verification
- 4 Commercial & Marketplace





## ACCESS TO QUALITY CARBON CREDITS

Access to competitive, permanent, and verifiable carbon credits through sustainable projects

# Our value proposition

It is aligned with the social, environmental and economic enhancement strategies of the Spanish regions

It is an **environmentally sustainable** project, **completely inclusive, innovative and profitable, appropriate to obtain public and private funding**, taking advantage of the opportunities afforded by the European, national and corporate green agendas

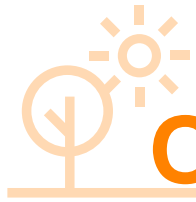
It is a **transforming** project:  
a boost to local social development and to the local forestry sector

A project **led by a first-class team**, with over 30 years of experience in the forestry sector

A **large-scale forestation project with a 100M€ ESG Investment Fund**  
(Repsol Foundation/Crédit Agricole/Portobello Capital)  
**over 24000Ha**

Innovative collaboration model through **public-private** partnerships with leading entities

**A great opportunity** to promote a project to transform the local rural environment from an economic, social and environmental standpoint, becoming **a differentiated player in the emissions offsetting** market in the region



## Objectives to be reached

- **+140,000 hectares over the next five years**
- **16 million tons of CO<sub>2</sub> available**
- **Nearly 15,000 job opportunities created (10,000 of which will be available to vulnerable groups)**
- **Over 70% of the project expenses made locally, enhancing businesses sustainability and boosting the regional economy**

# Satellite imagery



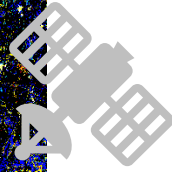
- Continuous **Monitoring** of the absorption of CO2 (biomass growth)
- **Additionality and Baseline**
- **Land selection and Land use changes**
- **Risk management/Assurance:** projections and potential events based on historians
- **Wildfire protection: permanence** (reversals risk)
- **Standardisation & Quality assurance**
- **No-Leakage verification** (no counter-balance elsewhere)
- **Co-benefits tracking** (biodiversity complexity)
- **REDD+** (Reducing emissions from deforestation and forest degradation)
- ...

# Monitoring-Reporting-Verification

- **Current methodology:** 5-year manual inventories + calculator from allometric equations
- **Motor Verde approach:** shift to Digital MRV
  - Motor Verde project: robust models from 3 ortho-levels of data
    - Satellite imagery:
      - ESA project: harmonized methodology
      - Verra project: verification boundaries
      - MV project: ad-hoc + HighRes
    - Over-canopy data (LiDAR + image)
    - Under-canopy data (LiDAR + manual)



Integrated approach for reliable and on-the-field verified methodology



# Monitoring

Satellite imagery

## ESA Forestry TEP Platform first results verification:

- 2 areas in Spain were evaluated: 1. **Caminomorisco** and 2. **Jarandilla**
- These two regions are very different in morphology:
  - Caminomorisco has small trees (7-9 yo) after assisted regeneration works; hilly area
  - Jarandilla is a monospecific even-aged *Pinus pinaster* forest (around 39 yo)
- Main Conclusions:
  - The results for Jarandilla are much better than for Caminomorisco (Heterogeneity issues)
  - Volume seems to be the best parameter in terms of correlation (compensation of errors?)
  - When both regions data are ingested together for modeling it may lead to a high error: all data for Caminomorisco are overestimated and for Jarandilla underestimated

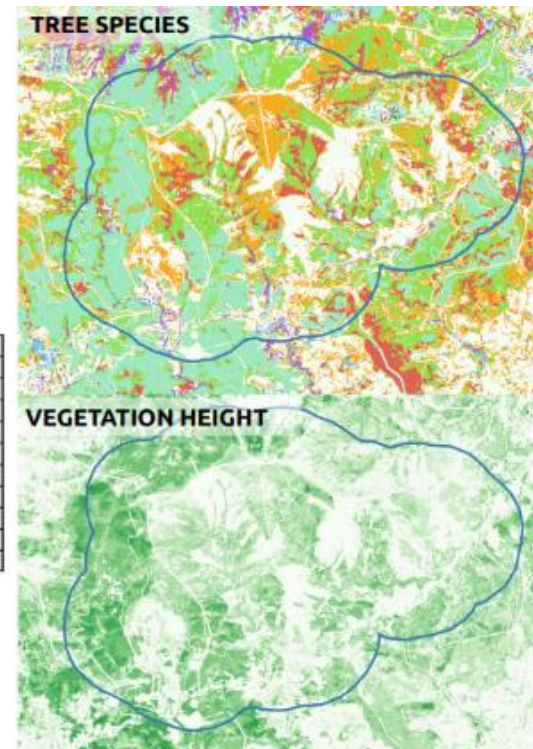
# Monitoring

- TESSELO approach: AI algorithmics over Sentinel 2 + combination with Aerial LiDAR for Tree Height

## CAMINOMORISCO - CONTEXT

The context area is **2,959Ha** of which **59% is forest**.

Ha	Height (m)								Total
Specie	[2,3]	[3,4]	[4,5]	[5,6]	[6,7]	[7,8]	[8,9]	[9,30]	
deciduous oak	1.07	0.96	0.66	0.10	0.01	0.00			2.80
evergreen oak	42.21	75.49	43.45	3.05	0.05	0.00			164.25
fast growing deciduous	8.29	9.80	8.60	1.92	0.08	0.01			28.71
other deciduous	7.47	9.45	11.92	4.83	0.16				33.83
other evergreen	22.07	103.56	94.38	7.94	0.12	0.00			228.06
other pines	78.68	251.96	231.66	28.10	1.30	0.03			591.74
pinus pinaster	27.53	69.62	318.71	269.73	12.67	0.02			698.28
pinus radiata	1.33	0.45	0.12	0.06	0.00				1.96
<b>Total</b>	<b>188.65</b>	<b>521.29</b>	<b>709.50</b>	<b>315.74</b>	<b>14.39</b>	<b>0.07</b>	<b>0.00</b>	<b>0.00</b>	<b>1,749.64</b>



# Reporting & Verification



- International Standards (Verra, Gold Standard...): through a 3<sup>rd</sup>-party
- Third-parties (AENOR, Preferred by Nature...)
- National Offices (Spain does not require a 3<sup>rd</sup>-party intermediary)  
MITECO assigns a 20% of credits ex-ante

*How fast will they adopt a Satellite-based inventory?*

# Motor Verde

**A sustainable, profitable and socially responsible project to continue sowing the future**