

# The real and unreal correlation between wind turbines and wildfires – Lessons from Greece

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Mediterranean forests suffer from worsening wildfires due to climate change. Wind energy is not to blame — it’s part of the solution  
This is no time for fake news; the planet needs action

### Abstract

The climate crisis has taken a toll on the Mediterranean ecosystems, with the increased frequency and intensity of wildfires being a prominent example. Before the end of August 2025 wildfires torched more than 1 million hectares in Europe, most of which in south Europe, marking 2025 as the worst year on record. Greece is no exception. Notably, in the summer of 2023, the country experienced the most severe wildfire in Europe, with nearly 100,000 hectares burned in a single incident in northeastern Greece.

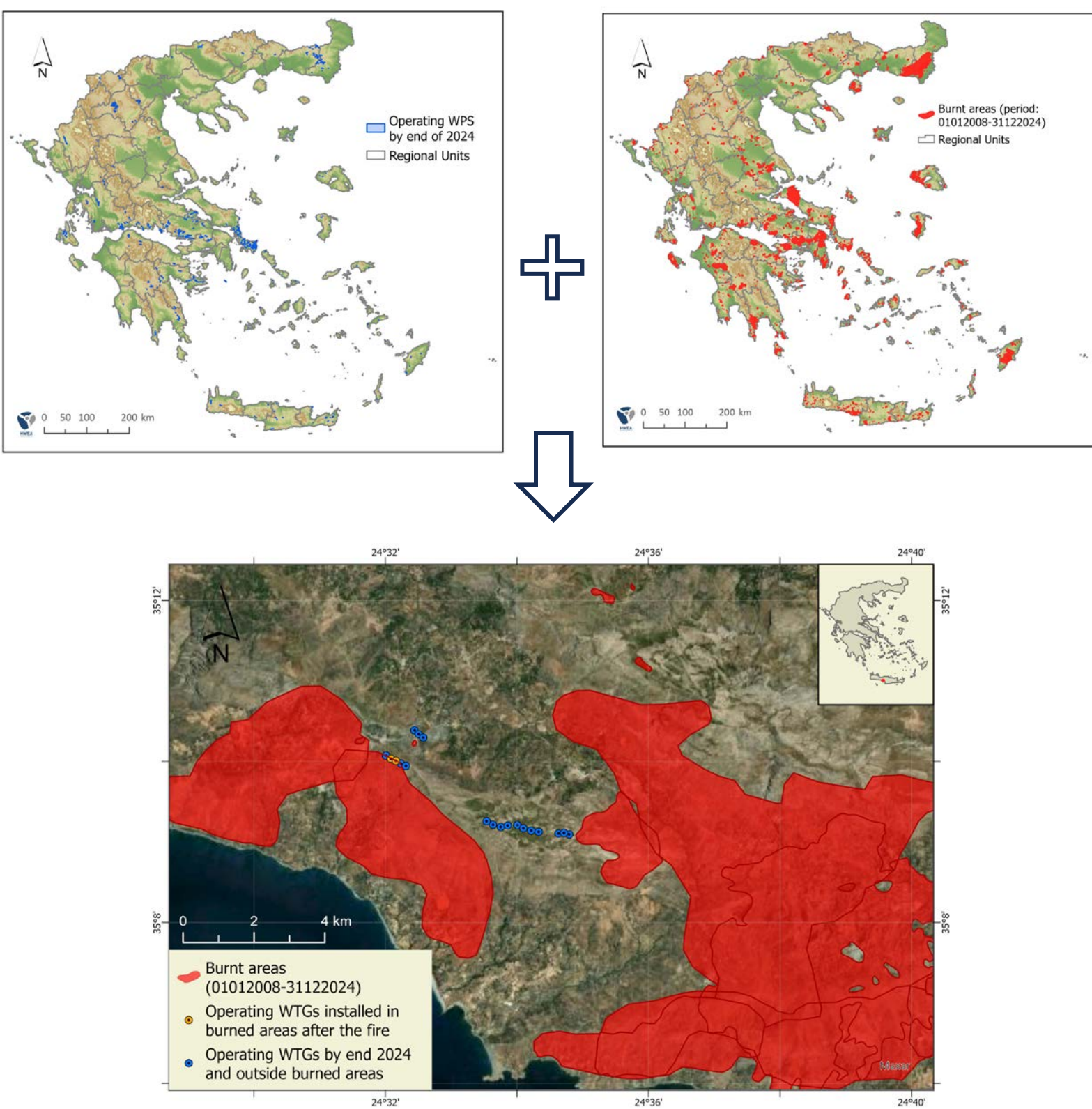
Over the past decade, unfounded claims have increasingly attributed the rise in wildfires in the country to wind turbines, fueled by fake news circulating in the media and on social networks suggesting that “fires are set in order to install wind turbines afterwards.”.

This study has two main objectives:

**A]** To assess the validity of such claims. A GIS-based analysis was conducted using: Data on all wind farms installed in Greece by the end of 2024, Copernicus wildfire polygons since 2008, forestry maps identifying reforestable areas (even pre-2008)

The analysis provides strong evidence that there is no correlation between the presence of wind farms and wildfire occurrence. Wind farms located in reforested areas—whether installed before or after a wildfire—occupy less than **0.07%** of such land.

**B]** To explore the actual environmental impact of wind installations on forest ecosystems, particularly whether they play a mitigating or aggravating role when wildfires occur nearby. The analysis conducted focuses on: The types of land where wind stations are installed (based on CORINE Land Cover classification), Road networks built to access turbines, and their potential contribution to fire management, the legal obligation for reforestation and examples of implementation



Above: Investigation of wind energy development and wildfire incidents in Greece, using Copernicus geospatial data



Above: Examples of reforestation works funded and carried out by wind energy projects. From top to bottom: a) forest cleaning and pruning, b) creation of a firebreak zone, c) maintenance of existing forest roads (Photos courtesy of Aeoliki Vermiou S.A.).

### Materials and methods

The following GIS data sources were used in the present study:

- all operating Wind Power Stations (WPS) in Greece as of the end of 2024. Available information for each project: location, installed capacity, first year of operation etc
- wildfires in Greece, provided by the EU Copernicus Programme, covering the period 1.1.2008-31.12.2024.
- designated Reforestable Areas in Greece—i.e., areas that have burned at least once in the past and are legally classified as reforestable, as derived from ratified forestry maps\*.
- CORINE Land Cover (CLC 2018) data, combined with a sample of operating WPS for which digitized data on the full land footprint of each project (new or widened roads, hardstands, electrical works etc) were available.

*\*While they extend back several decades, they do not include time-specific information about the fire events, unlike the Copernicus data*

**Table 1:** Wind Power Stations (WPS) investigated in the study

Parameter	Total in Greece by end 2024
Number of WPS	508
Number of WTGs	3,014
Installed Capacity	5,355

#### Research Questions

- A]** Regarding the claims linking wind turbines to wildfires, the following questions were investigated:
- What proportion of wind energy facilities have been installed on land classified as reforestable?
  - For the period 2008–2024 (when detailed Copernicus wildfire data are available), what percentage of wind turbines were installed after wildfires in areas that had burned since 2008?
  - For the above wind turbines, what is the total land footprint related to the total area affected by forest wildfires?
- B]** To assess the actual relationship between wind turbines and forest ecosystems, the following aspects were explored:
- The types of habitats where wind turbines are typically installed
  - The nature of the technical infrastructure involved and any potential links to wildfire behavior
  - Relevant legal provisions for mitigation measures, reforestation, and local community benefits

### Results-Discussion

#### A] Alleged correlation between wind turbines and forest fires

- Wind farms located within reforestable areas occupy only a very small fraction of such land—at most **0.07%**.
- For wildfires occurring after January 1, 2008 (based on Copernicus data), wind farms installed after the fire event (even many years later) account for just **0.03%** of the total burned area recorded between January 1, 2008, and December 31, 2024, which amounts to 615,363 hectares.
- With nearly 10,000 forest fires recorded annually in Greece, it is striking that since 2008 only 15 fire events have been followed by the installation of wind turbine installations - that is, in areas affected by fire, turbines were installed at some later point (even 12 years after the fire, as we found). This evidence strongly contradicts the widespread narrative blaming wind energy for wildfires.

These results confirm that **there is no causal relationship between the occurrence of wildfires in an area and the subsequent installation of wind turbines.**

*\* For the calculations of land coverage, the unit value of 0.93 ha/MW in USA was used (Diffendorfer J., Compton R., 2014), which is considered a conservative one*

#### B] Actual relationship between wind turbines and forest ecosystems

- Wind potential in Greece is primarily concentrated in mountainous regions. Accordingly, the vast majority of operational wind farms are situated in bare land or areas with sparse vegetation (see Table 2).

**Table 2:** Land occupancy of wind station facilities per land use category found for the sample of 978,8 MW of projects with digitized land footprint

CLC code	Description	% cover
321	Natural grasslands	38,6 %
323	Sclerophyllous vegetation	25,6 %
324	Transitional woodland-shrub	6,2 %
312	Coniferous forest	5,1 %
332	Bare rocks	4,7 %
333	Sparsely vegetated areas	4,1 %
322	Moors and heathland	3,3 %
243	Land principally occupied by agriculture (with significant areas of natural vegetation)	3,2 %
313	Mixed forest	3,0 %
-	Other categories	6,4%

- Wind energy infrastructure includes the construction of access roads, which, according to Greek legislation, are unpaved Category C forest roads with a typical width of 5 meters. These roads have low traffic volumes during operation and do not obstruct wildlife movement. Experience from several wildfire incidents in Greece has shown that the road networks of wind farms can **support fire response operations, providing access routes for firefighting units during emergencies.**
- Mandatory Reforestation:** Since 2014, each new wind project is required to undertake reforestation equivalent to the area disturbed by the project’s infrastructure (e.g., turbine platforms, roads). If no suitable burned area is available nearby, the developer may either: (i) Implement equivalent reforestation works elsewhere, based on cost equivalence as determined by the competent forestry authority, or (b) transfer the corresponding amount to the Green Fund, a public mechanism for environmental investment. Examples of reforestation-related works: forest road maintenance, fire prevention measures (e.g., firebreaks, pruning of dense vegetation) etc.
- Local Benefits:** According to Greek legislation on renewable energy, wind farms are obligated to contribute either 3% of their annual turnover (or €2/MWh, depending on their Power Purchase Agreement) to local communities. These benefits include direct payments to municipalities and electricity bill credits for local residents. Between 2010 and 2023, according to Ministry of Energy announcements, Greek wind farms collectively contributed **€301.6 million**. Of this, **€161.1 million** was allocated directly to host municipalities, earmarked for environmental actions, local development, and social support programs.

### Key messages

- There is **no correlation between wind farms and the rise in wildfires** in Greece.
- Wind energy and forests can coexist**, as shown by 30 years of development experience.
- Access roads for turbines have **helped firefighting efforts during wildfires.**
- Reforestation obligations ensure **ecological compensation for land use.**
- Financial contributions** from wind farms **support local communities and environmental actions.**

### References

 (See here: <https://shorturl.at/sF6um>)