



What new legal framework should apply to the installation of wind farms?

No new wind capacity has been installed in Hungary in the last 10 years because current legislation makes it impossible. While the [Recovery and Resilience Plan](#) (RRP) approved by the European Council on 5 December 2022 includes reforms to facilitate the deployment of wind energy, actual amendments to the regulations are still in question. In this paper, we formulate proposals for relaxing the strict laws, based on both current available technologies and examples from abroad.

Our main proposals are as follows:

The distance from residential areas should be reduced to 1000 m at national level, with the possibility of a downward deviation at local level, up to a maximum of 300 m. This is in line with EU good practice and the subsidiarity principle, and many wind turbines currently in operation are less than 1 km from settlements.

No technological barriers should be applied to exploiting wind potential. Remove the restriction on the installation of wind farms of up to 2 MW or increase it to 4.5 MW. Remove or increase the maximum height limit of 100 m to 175 m.

We consider the restriction under the RRP, whereby wind farms can only be installed in areas where wind power reaches 460 W/m^2 , to be too strict and unnecessary. We recommend that no such restriction should be imposed in order to maximise the spatial distribution of power plants. If such a limit is unavoidable for some technical reason, we recommend reducing it to 340 W/m^2 .

The requirement for landowner approval within 1000 metres of the site is also excessive and unjustified. It is proposed to reduce it to the limit of the extent of the safety zone.

Outlines of the new Hungarian wind power regulation

In its declaration of 5 December 2022, the European Council approved Hungary's Recovery and Resilience Plan (RRP), one of the reforms of which is "Facilitating investment in wind energy". Under this reform, the Government will significantly reduce the distance rules that currently prevent the installation of new wind farms and there will be no capacity restrictions.

Unfortunately, the areas designated for installation would only be in a very small part of the country, where wind power reaches 460 W/m^2 - but it is not clear from RRP at what altitude this condition would have to be met. Assuming that at 150 metres (a figure that appears in the description of the reform), less than 10% of the country would be open to new wind

farms, roughly where they currently operate (see Figure 1). If the height at which the criterion might have to be met is lower, the potential areas are further reduced.

We consider this regulatory limit unnecessary, as the existing, more obsolete turbines are producing energy above the European average, even though they could not have been installed under this proposed rule: at 100 m height, where they are producing, they do not have the expected wind power output (460 W/m^2). In any case, investors will install in areas with wind power output that is acceptable to them, based on measurements, and such regulation is unnecessary in addition to otherwise justified (e.g. nature conservation) limits.

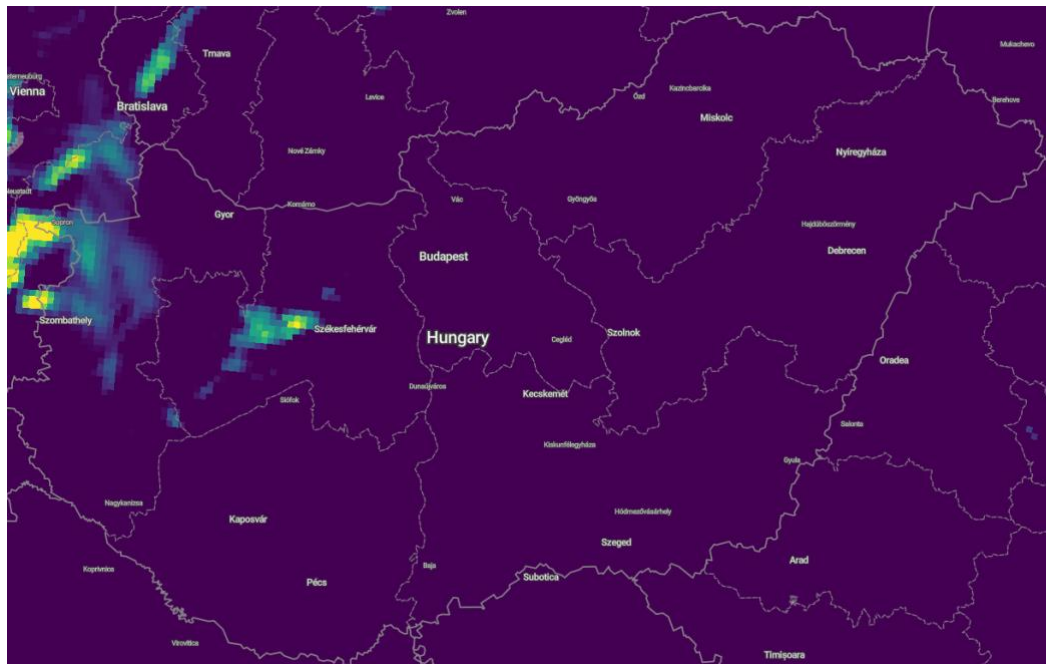


Figure 1: Areas with wind power of 460 W/m^2 at 150 m in Hungary (source: <https://map.neweuropeanwindatlas.eu/>)

If, for unknown reasons, such a limit were to be included in the regulations, it is proposed to set it at a maximum power density of 340 W/m^2 (at 150 metres), since specific measurements made by wind farms show that a plant can operate at a capacity factor of 26% at this wind power. This would allow for a more spatially diversified presence of wind farms, which would be beneficial for grid stability and the exploitation of wind potential. It would also allow the development of areas in the Great Hungarian Plain, where the sparser settlement structure would make it easier to find sites and often more disadvantaged local communities would need the additional revenue even more.

A positive change would be that in priority areas (yet to be defined), or where wind farms already exist, the permitting process would be facilitated: with 10% shorter permit issuance deadlines and the legal possibility to obtain a resolution from authorities before the permit procedure is launched. This option is favourable in terms of replacing and upgrading older, more obsolete turbines, which is important because everything is already available at these locations and indeed the easiest way to develop wind power generation capacity is to replace existing older turbines with more modern ones.

Consultation of stakeholders during the legislative process

Unfortunately, it is a common phenomenon in Hungary that new or amended rules are published in the Hungarian Gazette (Official Journal) without any prior notice. This has



happened, for example, with amendments to the utility cost reduction policy, the temporary ban on connecting new small-scale solar power plants to the grid and the abolition of the transport fuel price cap.¹ This creates a high level of uncertainty and mistrust in society, and for market players, unpredictability means higher risk and less investment.²

According to the RRP, "there will be public consultation and transparent dialogue with local authorities before the new legislation is adopted." The involvement of stakeholders is also useful for the legislator, since the consultation may reveal aspects benefitting the future implementation of the legislation. However, there is little tradition of such dialogue, nor is the method or process described in the plan, thus it is not known who, when or how can participate. In the following, we will look into the current Hungarian public consultation practices and cite international best practice examples.

The law currently in force on public participation in the preparation of legislation³ requires the development of a "strategic partnership" with, among others, civil society and professional organisations (i.e. the legislator consults those it considers to be relevant actors). Under an amendment in force since 26 October 2022⁴ the government audit body will summarise annually whether public consultation has taken place or justify its absence.⁵

According to the rules, the deadline for comments on drafts must not be less than eight days, but no public consultation is required if it would jeopardise the protection of Hungary's particularly important interests in the fields of defence, national security, finance, foreign affairs, nature conservation, environmental protection or heritage protection. These cases may be invoked only in justified cases. Failure to hold a public consultation may result in a fine being imposed on the ministry responsible for preparing the legislation.

Ministries publish draft legislation on their own websites under the "public consultation" section, and interested parties can send their comments by e-mail, usually with a minimum deadline of eight days. This practice does not allow for exchanging opinions and reach a consensus. Relevant stakeholders can only participate in a meaningful way if they

- have insider information or
- monitor the ministry's website every few days.

RSS channels or similar tools would greatly contribute to better inclusion of interested stakeholders. Most legislation appears in the search engine by number (and not by subject), which makes it difficult to participate in the debate on it.

A good practice abroad on legislation involving public consultation is the **preparation of the law on measures for sustainable development (Loi Grenelle) in France**.⁶ Six representative working groups, composed of government, municipalities, non-profit organisations, companies and employees, worked on the preparation of the proposals. After numerous consultations, the proposals were enacted by the French Parliament in 2009.

¹ The changes to the rules of the utility cost reduction policy were announced on the afternoon of 13 July 2022, 18 days before they come into force. Index [reported](#) on the extraordinary cabinet meeting at 10:00 that morning, followed by a Government press conference at 15:30. The same short period of 18 days elapsed between the suspension of the connection of small scale solar power plants to the grid and the announcement of the information. The end of the fuel price freeze was [announced by](#) the government in the late evening hours, 25 minutes before it came into force on 6 December 2022.

² Khan, K., Su, C.W. Does policy uncertainty threaten renewable energy? Evidence from G7 countries. *Environ Sci Pollut Res* 29, 34813-34829 (2022). <https://doi.org/10.1007/s11356-021-16713-1>

³ Act CXXXI of 2010 on public participation in the preparation of legislation

⁴ Date of approval of the HET by the European Council: 05.12.2022.

⁵ Act CXXXI of 2010 on public participation in the preparation of legislation

⁶ T. Divjak, G. Forbici: Public Participation in Decision-making Process - International Analysis of the Legal Framework with a Collection of Good Practices; Centre for Information Service, Co-operation and Development of NGOs; December 2014



In France, the National Public Debate Committee ensures that all issues of strategic importance (with a significant impact on the environment, regional development, etc.) are debated in public.⁷

Our proposals for a meaningful and transparent dialogue:

We suggest relying on professional NGOs with national coverage to provide public consultation on issues of high importance, and even the form of national consultation, provided that questions and answers are methodologically sound.

A meaningful dialogue with local authorities is indeed very important in this particular case (rules on the installation of wind farms), as they are entitled to regulate and plan their own territory. It is through them that information can be effectively communicated to the public. Involvement of umbrella organisations (e.g. the National Association of Local Authorities) and the Municipal Office of the Ministry of the Interior in the process is inevitable.

As a fundamental aspect, we propose to incorporate into government practice that social consultations should be seen as an opportunity to find the most socially beneficial solutions from as many perspectives as possible. The elements of the involvement of the public for this purpose are:

- Prior information on the expected process, the main technical circumstances and the main elements of the draft legislation and government views (in writing) to enable the participants of the consultation to prepare. All this in a format, channels and style that is accessible to the average stakeholder.
- Timing: do not schedule the consultation phase of the consultation during the summer holiday season or during the long Christmas and end-of-year periods or long weekends⁸.
- If feasible, there should be opportunities to express opinions in person, so that a consensus-based outcome acceptable to most can be reached by reflecting directly on each other. A good example is the Citizens' Assembly⁹.
- Participation in face-to-face meetings can be hindered by geographical factors, so in addition to face-to-face consultations, we also recommend the possibility to connect to the discussions online, giving interested parties the opportunity to join the dialogue even when time or other resources are limited.
- In all cases, the government should communicate the results of the social dialogue to the parties concerned, indicating which aspects were taken into account and which were not, and the specific reasons why.

Technological aspects

The RRP states that "the minimum distance between wind farms and residential or other affected areas should not exceed European benchmarks and comparable best practices. The requirements on the maximum permissible height of wind turbines (or the maximum diameter of wind turbine blades) should be removed or increased to be in line with European benchmarks and comparable best practices."

⁷ <https://www.debatpublic.fr/en>

⁸ there are many recent bad examples, such as the public consultation on draft RRF calls for proposals

⁹ The Municipality of Budapest has already held citizens' assemblies on several topics, where it discusses 1-1 given topic with a representative selection of residents of the capital from different backgrounds, ages and professions, e.g. the Budapest Climate Strategy, the future of Budapest's public spaces and transport <https://kozossegygyules.budapest.hu/>



This is also justified from a technical point of view, given the unprecedented legal restrictions on the installation of wind farms in the country. Under current legislation,

- a new wind turbine must not exceed 2 MW,
- must have a maximum height of 100 m and angular speed of up to 60 m/s, with a safety stop at 25 m/s wind speed,
- noise exposure at 1.5 m above ground level must not exceed 60 dB inside the safety zone and 40 dB outside the safety zone.^{10,11}

In addition, there is an excessive buffer zone of 12 km around populated areas which means that there is not a single plot where installation is possible.^{12,13}

For the maximum wind speed, a limit of 25 m/s is considered appropriate, which is in line with the parameters of all currently available wind turbines. We also agree on the level of noise restrictions, which is not outstanding by European standards.

We consider it excessively restrictive that a maximum of 2 MW of wind power can be installed. This reflects technology applied 10-15 years ago; today, onshore turbines with a capacity of 3-4 MW are typically installed, and offshore wind turbines have more than twice that capacity¹⁴. We propose removing this limitation, or increasing it to at least 4.5 MW.

Today's onshore wind turbines in Europe have a tower height of 120-150 metres, with the latest technology available reaching a tower height of 175 metres. Several manufacturers are planning to develop large wind turbines¹⁵. In view of this, we propose removing the related limitation completely to ensure flexibility, or at least to set the maximum tower height at 175 metres.

With these more permissive constraints, and even more so with the removal of them, more advanced technology and a greater performance could be achieved. During the in-depth interviews with mayors in November 2022, the answer we received without exception was that if there were a wind farm, it would no longer matter to people whether it was 100 or 150 metres high.

In our comprehensive [wind energy study](#), published in 2020, we compiled a list of restrictions on the distance from inhabited areas in some countries. The average European practice is around 500 m from inhabited areas. Even the most stringent requirements are much lower than in Hungary, and in some countries the distance is linked to the height of the wind turbine.¹⁶ The most modern wind turbine currently available has an overall height of 260 metres.¹⁷ Even under the relatively stringent German regulations, this state-of-the-art technology can be installed within 2.6 km of inhabited areas.¹⁸ In Italy, noise levels of 33 dB

¹⁰ 34/2016 (IX. 14.) NGM Decree amending Decree No. 8/2001 (III. 30.) GM on the enactment of the Electricity Plant Technical Safety Requirements Regulation and Decree No. 2/2013 (I. 22.) NGM on the safety zone of electricity plants and of private and direct power lines

¹¹ 60 dB corresponds to an electric toothbrush, while 40 dB corresponds to quiet library noise (<https://www.audicus.com/noise-levels-of-everyday-sounds/>)

¹² 253/1997.(XII. 20.) Gov. decree on national settlement planning and building requirements

¹³ with the exception of wind power, which is considered to be a small household-scale power plant

¹⁴ <https://www.irena.org/Energy-Transition/Technology/Wind-energy>

¹⁵ <https://www.cnbc.com/2022/04/13/green-energy-the-race-to-roll-out-super-sized-wind-turbines-is-on.html>

¹⁶ Energiaklub: Wind energy in the 21st century - and in Hungary; page 42, table 3; ISBN 978-615-5052-12-5; 16.11.2020

¹⁷ <https://www.rechargenews.com/wind/big-blades-give-edge-to-vestas-as-dane-unveils-worlds-largest-onshore-wind-turbine/2-1-1195613>

¹⁸ In Germany, the distance from populated areas is 10 times the height of a wind turbine,

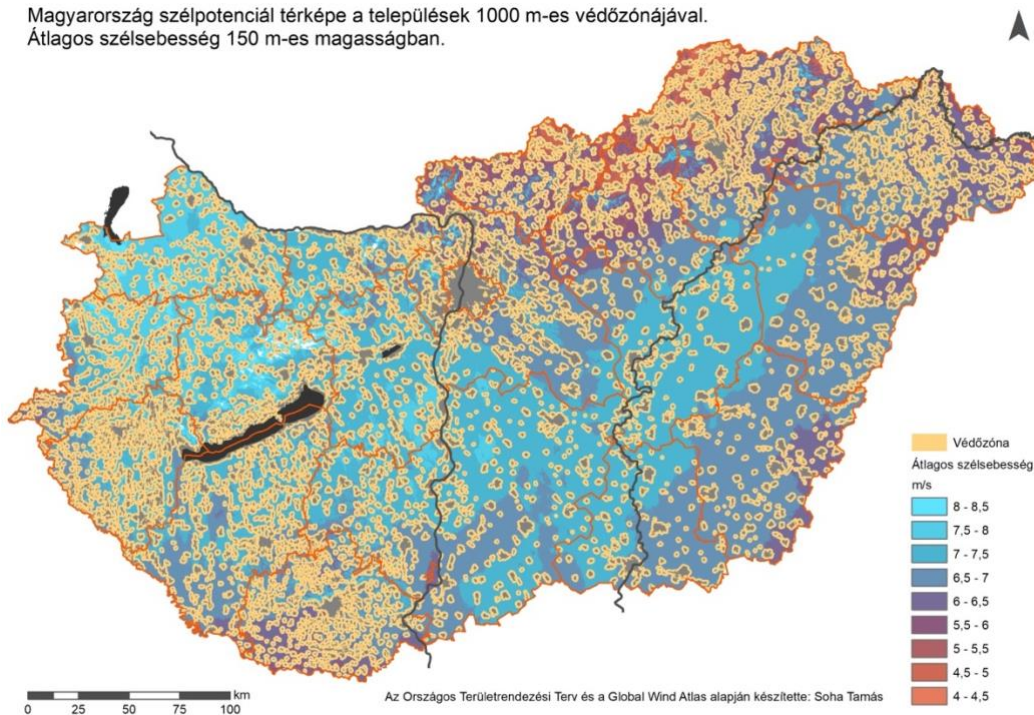
have been recorded in 15 per cent of areas at a 1000m safety distance¹⁹, which is acceptable under national limits (40dB), although some people may find it disturbing.

Opinions are divided on the acceptable distance from the settlement, according to a representative survey of municipalities conducted by Energiaklub in September 2022. 56% of respondents would set some kind of distance for protection, most of them (20%) opted for 1 km. 13% of the municipalities would settle for a 500 m safety distance, but in the Western Transdanubian region, where wind turbines are better known and accepted, a disproportionately high percentage (27%) chose this lower option of 500 m compared to other regions. In the Southern Great Plain, on the other hand, 38% would set a minimum distance of 2 km as a condition for wind farm investments.

This confirms the insight we gained in our personal discussions that it would be worthwhile to take a differentiated approach to the issue. Some municipal leaders do not want to make their own decisions in this area because of a lack of information, and leave it to the national level to regulate. Others, however, feel that such a decision should be within their competence, as they know their areas and topography best and would be happy to decide on the issue of the protection distance at local level. **On this basis, it is proposed that the protection distance should be set at 1000 m at national level, with the possibility of a downward deviation at local level, up to a maximum of 300 m.**

The figure below shows settlements with 1000 m buffer distances (in yellow) and average wind speeds (at 150 m).

Magyarország szélpotenciál térképe a települések 1000 m-es védőzónájával.
Átlagos szélesebesség 150 m-es magasságban.



¹⁹ [https://social-sciences.tau.ac.il/sites/socsci.tau.ac.il/files/media_server/social/public\[...\]%20crowded%20conditions_%20An%20empirical%20analysis.pdf](https://social-sciences.tau.ac.il/sites/socsci.tau.ac.il/files/media_server/social/public[...]%20crowded%20conditions_%20An%20empirical%20analysis.pdf)



Nature conservation

Under the current regulation, the installation of wind farms with a capacity of more than 500 kW in protected natural areas, Natura 2000 areas, cave protection zones and 600 kW or more is subject to an environmental impact assessment, depending on the decision of the environmental authority in a preliminary assessment.²⁰

The EU Habitats Directive does not inherently preclude the development of wind farms in Natura 2000 or adjacent areas, but it does set out the assessment and authorisation procedures to be followed. The species protection provisions do not in any way require Member States to prohibit the installation of wind farms.²¹

An argument often raised against wind farms is their potential negative impact on bird and bat habitats and lifestyles. A number of research and initiatives have been and are being undertaken to minimise the impact of wind farms on biodiversity.

For example, in some areas of Germany, the use of bat detection software is mandatory (ProBat²²), but there are also examples of painting turbine blades for better visibility, or installing bird detection radars to shut down turbines when necessary during migration. All these are proving effective.

France's wind energy guidelines for birds and bats require at least one post-construction monitoring measurement in the first 3 years of operation. If significant impacts are observed, corrective measures should be taken and a measurement should be carried out the following year.

We recommend international cooperation, capacity building and knowledge sharing in this area and, after consultation with conservationists and environmental authorities, the use of best practices from other countries to improve wildlife safety, if needed.

Safety and compensation

The current regulation requires "the written consent of all owners of properties within 1 km of the boundaries of the property where a wind turbine or wind farm is to be located for the construction of the structure or structures."²³

We recommend that only the consent of property owners within a 300m safety zone from the property boundaries should be required.

We agree with the existing rule that an agreement with the owner of properties located in the wind turbine safety zone²⁴ has to be concluded to provide for the extent of the restriction²⁵ and any compensation.²⁶

²⁰ Decree 314/2005 (XII. 25.) of the Government on the environmental impact assessment and the single environmental use permit procedure

²¹ European Commission: Guidelines on wind energy and EU nature legislation; ISBN 978-92-76-27303-5; 2021

²² calculates turbine-specific cut-in wind speeds to reduce mortality to a certain level

²³ 382/2007 (XII. 23.) Government decree on construction licensing procedures in electricity industry

²⁴ for wind turbines, vertical planes up to twice the total height of the turbine (tower and rotor blade together)

²⁵ 2/2013 (I. 22.) Ministry Decree on the safety zone of power plants and of private and direct powerlines.

Article 15 (2): Fruit trees or other trees may be planted or left if, in their final mature state, they do not approach the wind turbine blades more than 5 metres in their most unfavourable position, in the event of their falling over.

(3) No activity may be carried out that may endanger the integrity or stability of the supporting structure of the wind turbine (e.g. flooding, pond cultivation, mining activities).

²⁶ 382/2007 (XII. 23.) Government decree on construction licensing procedures in electricity industry