

PUBLIC PARTICIPATION IN THE PROCESS OF EIA INTENTIONS OF WIND POWER PLANTS IN THE CZECH REPUBLIC

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Abstract

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Public participation in decision-making process is an important function of the process called Environmental Impact Assessment (EIA). The respect for the public right in the participation of environmental impact assessment and the right to information are generally controlled by non-governmental organizations (NGOs) in cooperation with the Ministry of Environment. The support of public is provided in the cases in which queried entity tries not to give the requested information in the appropriate range. NGOs do not follow how the public is involved in the EIA process, and how the comments are relevant or incorporated and whether the final standpoint is influenced. This standpoint is not monitored by Czech Statistical Office. The article deals with the involvement of the general public in the EIA process of wind power plants in the Czech Republic. In selected regions (Moravskoslezský, Olomoucký, Ústecký and Jihomoravský), not only the quantity but also the relevance of the comments in relation to the outcome of the process are evaluated. The own typology groups of the public (individuals, petitions, self-government etc.) and also applying comments (noise, nature protection, administrative mistakes etc.) were used for the evaluation. All intentions obtained concurring standpoints in the case of zero or low interest of the public.

Keywords: Aarhus Convention, environmental impacts, wind energy, renewable sources

INTRODUCTION

Growing levels of energy consumption and concern over the environmental consequences of energy production are leading to an increased investment in renewable energy generation (Hattam, Hooper, Papathanasopoulou, 2017). Wind energy has become more and more attractive as one of clean renewable source (Dabbaghiyan *et al.*, 2015; Dincer, 2011; Dai *et al.*, 2014). The reason is due to growing uncertainty about the future of the oil and natural gases as well as raising awareness of anthropogenic impacts of fossil fuels on climate change (Karytsas, Theodoropoulou, 2014; Emejeamara, Tomlin, Millward-Hopkins, 2015; Zheng *et al.*, 2015). Wind energy can be a highly reliable and promising energy source (Dabbaghiyan *et al.*, 2015; Dincer, 2011). A huge potential can be for the entire planet and, in the principle, wind energy would be able to

meet the entire global energy consumption (Sesto, Casale, 1998; Michalak, Zimny, 2011). An average wind speed exceeding 5 m/s at a height of 10 meters is enough to achieve efficient utilization of wind energy (Dai *et al.*, 2014). Global wind energy potential in the areas meeting these criteria is estimated up to 500,000 TWh/year. However, this value should be reduced by more than 90% for the reasons of land use for agricultural, residential and other purposes. Then, the resultant potential reaches around 20,000 TWh/year (Emejeamara, Tomlin, Millward-Hopkins, 2015). Wind studies have shown that the appropriate placement of WPPs depends not only on land but also on the coast or on the seas where better weather conditions can be and WPPs causes less impact on the environment. The disadvantage, however, tends to be less access and higher costs for installation

and maintenance (Sesto, Casale, 1998; Emejeamara, Tomlin, Millward-Hopkins, 2015). In Europe, an estimated wind power potential in marine areas can reach up to 3,500 TWh/year in the assumption of the construction of wind power plants at a distance from 10 to 50 km from the coast (Emejeamara, Tomlin, Millward-Hopkins, 2015).

The development of wind energy to the actual production of electricity in the Czech Republic took place in several phases (Ekobonus, 2011; Cetkovský *et al.*, 2010). In the first phase, 24 wind power plants with a total installed performance of 8.22 MW were built in the period from 1990 to 1995. This significant growth was inspired by countries such as Denmark and Germany, and the cheaper costs (about 30%) or the expected favorable purchase prices, etc. (Cetkovský *et al.*, 2010). The decision of Energy Regulatory Office started in the second phase in 2002 which set a minimum purchase price of electricity produced from wind in the amount of CZK 3,000/MWh. From this year, the price has gradually decreased (Cetkovský *et al.*, 2010). Currently, the price ranges about CZK 1,980/MWh (ERU.cz, 2015). According to the Energy Regulatory Office (ERU), a total installed performance of WPPs was in the range of 283 MW in the Czech Republic in 2014 (ČEZ.cz, 2013). The feasible potential of wind energy is expected in the future with the construction up to 1,178 of WPPs with performance up to 2,536 MW and annual energy production around 5,610 GWh/year (Cetkovský *et al.*, 2010). According to expert studies, the greatest potential of wind energy proves the Highlands region, North Bohemia and North Moravia followed by the South Moravia and West

Bohemia. The smallest potential is expected in South Bohemia (Cetkovský *et al.*, 2010; ČEZ.cz, 2013)

Public participation in the EIA process

Public participation is an integral and internationally recognized practice in the EIA process (Říha, 2001, Portman 2009). The public has an irreplaceable role in the whole process and can determine the content and scope of the assessment or to evaluate the objectivity and possibly require compensation and damages caused by the intention. Different authors perceive the public participation differently. O'Faircheallaigh (2010) understands this term as any form of interaction between government and corporate actors and the public that occurs as part of EIA processes. The International Association for Impact Assessment (IAIA, 2006) defines public participation in the context of environmental assessment as: *“the involvement of individuals and groups that are positively or negatively affected, or that are interested in, a proposed project, programme, plan or policy that is subject to a decision-making process”*. Dietz, Stern (2008) and Glucker *et al.* (2013) argue that the public involves people, groups, or organisations that may experience benefit or harm or that otherwise choose to become informed or involved in an environmental decision. Public participation is from our point of view means the involvement of public stakeholders comments at any stage of the EIA process. The public participant is represented by individuals and group listed in Tab. I.

O'Faircheallaigh (2010) and Rega, Baldizzone (2015) distinguish three main roles for public participation in EA: i) as an aid to decision making which remains separate from the participating public; ii) as a mechanism for achieving a role

I: Category of subjects

Abbrev.	Title	Description of category
D	DÚSC	Interested territorial administrative units – municipalities, cities, city districts, council regions.
DS	ÚSC Unaffected	Territorial administrative units directly untouched by the intention – village, town or city district, microregions, voluntary associations and Council regions
O	Citizens – individuals	Citizens of individuals and a maximum of five member groups also covered the entities designated as family, married couple or individuals with family
OS	Civic associations	Civic associations including hunting and fire associations. Furthermore, parish committees, associations of flat owners including cases in which the merged entity is connected with a petition of citizens.
S	Groups	More than five-member groups of citizens. Furthermore the entity designated as „citizens of the village“.
SP	Petitions	Petition regardless of the number of signatures
J	Other	Entities acting mostly as entrepreneurs or profit companies.

Source: compiled by authors according to Bilíková (2015)

for the public as joint decision makers; and iii) as a mechanism for reconstituting decision making structures. In the Czech Republic, the assessment of environmental impacts was conducted through Act no. 244/1992 Coll. which was later amended by Act no. 100/2001 Coll. about the assessment of environmental impacts with the effect from 1. 1. 2002 (Dvořák, 2005).

The advantages to having the public participate in the EIA process are many (Portman, 2009). Different degrees of public and stakeholder engagement exist, that can be used for different purposes, entails different methods and tools and can be applied to different phases of the decision-making process (Rega, Baldizzone, 2015). Public involved in the EIA can be divided into several groups (Říha, 2001):

- Directly affected people living close to the project
- Environmentalists promoting environmental protection
- The petitioners from the world of finance, banking, commerce and industry who are pursuing their own benefit from the proposed project
- The general public advocating the maintaining a certain level of environment
- Representatives of local authorities
- Interest political and cultural groups or individuals
- The population as a whole

Not only is public participation in EIA a goal in itself, there seems to be widespread consensus that public participation is also key to effective environmental assessment (Glucker *et al.*, 2013). Dietz and Stern (2008) evaluate the effects of participation on three values: improving the quality of decisions, enhancing the legitimacy of decisions, and building the capacity of participants to effectively contribute (Salomons, Hoberg, 2014).

Examples of methodologies used to determine public participation

Despite an important relationship between energy production, consumption and well-being, little attempt has been made to provide a holistic assessment of how renewable energy sectors can contribute to different aspects of human well-being (Hattam, Hooper, Papathanasopoulou, 2017). The evaluation of public participation in the EIA process can be carried out using various methods. The example may be a questionnaire survey conducted in 2009 as part of the thesis: Wind Energy and the Use in the Czech Republic: regional geographical perspective (Frantál, 2009). The questionnaire was sent to the mayors of 128 municipalities throughout the country. From the 42 municipalities, the WPPs project has been implemented, and the project was planned but unrealized in 86 municipalities (Cetkovský *et al.*, 2010; Frantál, 2009). This survey solved the possible involvement of municipalities in the EIA process in terms of motivational factors. In the case of 95% of support for the municipality, the construction of wind power can be enabled due

to financial compensation. Another finding was that the municipality would decide in the same way up to 76% as before in repeatedly made decision. Demotivation factors for the rejection of the wind power mainly included: the resistance of the local population, disruption of the landscape and the impact on life quality (Cetkovský *et al.*, 2010; Frantál, 2009).

MATERIALS AND METHODS

Working procedure has been modified but based on the methodology according to Bilíková (Bilíková, 2015). The original methodology was applied to all types of projects under the EIA process, which is somewhat different from this work that concerns only on one type of projects. For this reason, the methodology was modified only for WPPs projects; however, the concept of data acquisition and subsequent analysis remained unchanged. The process, by which data were obtained and further processed, is illustrated by the following scheme (Fig. 1). In more details, the methodology is itemized into the following points:

Data Collection

The input data were obtained from the internet information system called EIA portal.cenia.cz operated by the Czech Environmental Information Agency (CENIA). From the database information system EIA, the chosen projects fell into the category of major WPPs (category II/3.2 – WPPs stand height exceeding up to 35 m or with the performance of over 500 kW). The studied period was defined from 1. 1. 2004 until the end of data collection i.e 9. 8. 2015. The chosen projects were selected in the projects with the issued standpoint which are located in regions of the Czech Republic.

Selection of Regions

Since the EIA portal was included in the specified period and the total of 101 of WPPs projects were located across all regions of the CR, the necessity was to reduce this high number of projects to fewer projects due to the limited capacity of this work and clarification of the collected data. For this reason, only selected regions of the Czech Republic met the criteria such as at least 10 projects occurring in the state of standpoint. In more details, the graph in Fig. 2 shows chosen regions.

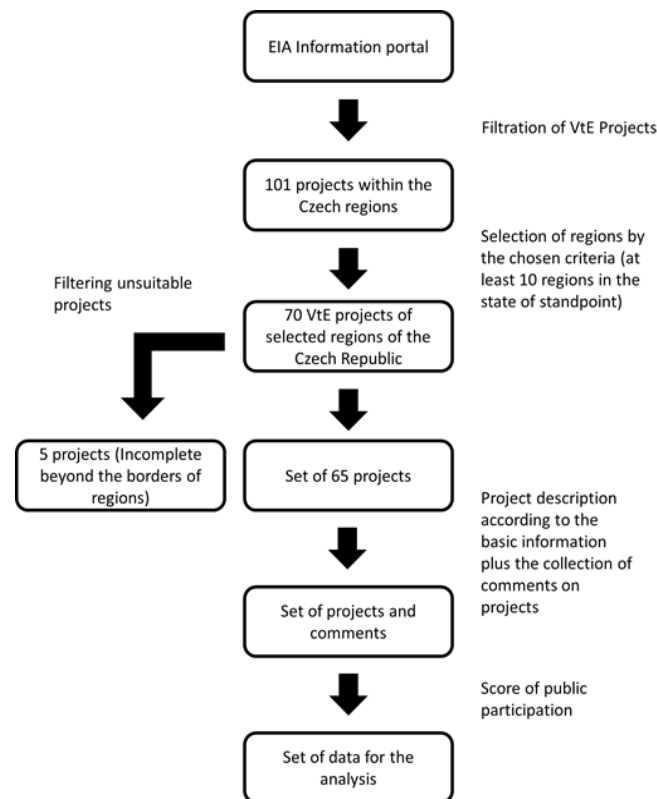
Selected criteria met the following regions with a number of projects: Ústecký (26), Moravskoslezský (14), Olomoucký (10) a Jihomoravský (20). The number of projects was not final and further reduced.

Filtration of Projects

After selecting a specific region followed by reading the various projects in order to determine whether projects do not exceed their scope and neighboring regions (also foreign regions) and also whether all the necessary project documents can be

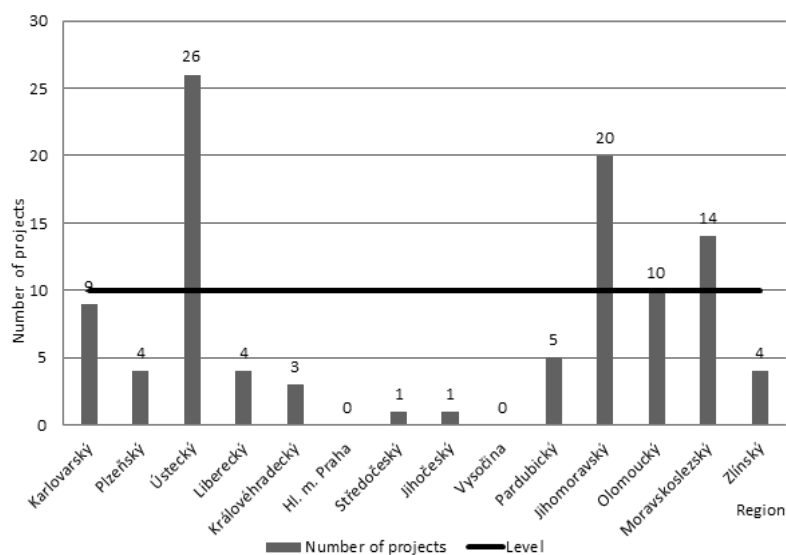
found in the information portal EIA. In the event that one of said situations was detected in projects, the project was not included in further analysis. After exclusion of those five cases, 65 projects remained for further analysis which is the final number for further working. The next step was to describe the project in terms of basic information

such as: project number, name, location, number of registers, the year of notification and proposed or approved WPPs projects. Following step dealt with creating a detailed summary of all comments from individual cases such as: Status (O – notice, D – Documentation, P – report) to which the reminder was applied; The type of entity that is



1: Diagram of the used methodology

Source: own processing



2: Number of projects in the state of standpoint in the CR regions

Source: own processing according to data from portal.cenia.cz

expressed (subjects were categorized according to the type, see Tab. I); Categories of comments (what a reminder is concerned, see Tab. II); Concurring or dissenting opinion intent.

Scoring of projects

After a complete list of all the comments, final scoring of projects was possible. The duration was taken place according to the number of comments, number of registers and the type of entity. Predetermined coefficients of significance were given to individual subjects. The comments were then multiplied by the coefficients. For example, it is taken into account whether the comment was sent by the village itself or just the individual citizen. The values of coefficients and the reasoning are given in the Tab. III.

If higher number of registers exists, higher acceptance of comments from the public can happen in the area where the project is located. Thereby, the distorting of the results could arrive therefore a consideration of data and comments

(already multiplied significance) have been divided by registers.

Evaluation of public participation in individual projects

After previous process of gaining the final score of each project we can proceed to a crucial step of the whole work and make the comparison of analysed regions in terms of construction and performance of WPPs. Finally, the composition of the commenting entities, category and relevance of comments can be analyzed.

RESULTS

Comparison of individual regions

Potential use according to the middle scenarios is shown in graph in Fig. 3 for all regions of the Czech Republic with the exception of the Prague capital which was not included in the analysis.

II: Categories of comments

Name of category	Definition of category
Location	Comments concerning territorial plans, their disregard, lack of planning permission for the plan or the variant, requirement to issue decision. Comments on the distance of VtE construction from human habitation and land affected by the intention.
Fauna and Flora (Nature conservation)	Generic and territorial protection – corridors, Natura 2000, CKHO, MZCHÚ, and other specially protected species and others of wild fauna and flora including deforestation and soil erosion.
Noise	Increasing noise levels and other distractions such as shadows and vibrations.
General	The comments which were not specified in more detail. An example might be: “environmental impact”, “affect of the welfare of the population”, “impact on quality of life,” “impact on the health of the population” and by other public generally referred terms that are not specifically included.
Socioeconomic	Comments regarding the economic importance of the needs of the project, reducing the price of real estate in the area, a plan to create new jobs, impairment of property, defamation of wasting public funds. Furthermore, the impact on community development and attractiveness of the surroundings. Also, questions about financing the project.
Cumulation	The fear of cumulation with other projects, requirements for assessing the project over its full length, SEA requirements and more.
Landscape	Comments regarding the disruption of the landscape, no aesthetics of the intent, inadequate visual appearance and stroboscopic effect.
Tourism	Categories related to the effects on potential of recreational areas, of such as recreation, tourism restrictions due to intent and the decrease of the overall attractiveness of the surroundings in terms of recreation and tourism.
Technology	Comments regarding the use of technology, the possibility of accidents, explosions, releases of pollutants into the air or water and soil, states of emergency, ice thrown from the blades of VtE, increasing traffic hazard near the project during construction. Further doubts about the dismantling of VtE after the operation, and an indication to the original state.

Source: own processing according to Bilíková (2015)

The total realizable potential of wind energy in the Czech Republic is estimated at 2,536 MW which accounts for an average of 195 MW per one region of the Czech Republic. The graph shows that the region chosen for analysis exceeded the average. The suitable weather conditions for the use of wind energy as well as more favorable political and socioeconomic conditions than in other regions were determined as the main reason. The only exception was found out the Olomoucký region with an estimated realizable potential of 156 MW below the national average. Vysočina region reached the highest realizable potential (up to 428 MW) for the whole CR where have been detected ideal conditions and convenient location in the middle of the Czech Republic in terms of the energy distribution to network. In this region,

however, wind energy has not met with the support of politicians and the public, and since 2009, the WPPs construction has been banned in this region. The graph in Fig. 4 compares the evaluated regions in the ratio of realized performance to potential performance.

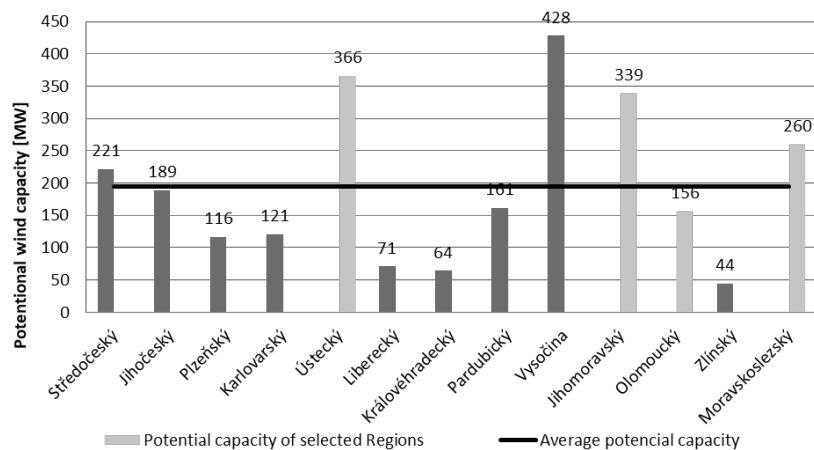
Even though, the Jihomoravský region belongs to the one with the least implemented WPPs and installed performance within compared regions, the huge potential is evident from the graph in the coming years in which the installed performance is comparable to the Ústí region.

Also Moravskoslezský region reaches a low proportion. On the contrary, the most potential use of wind energy comes from Olomoucký region that used the potential to nearly 30% which is a significant difference compared to 2% use in

III: Coefficients for each type of subjects including their rationale

Abbreviation	Coefficient	Reasoning
D	1	Entities in this category represent their residents. The village also protects the public interest and that should be above the private interests of citizens. It was taken into account, whether the mayor expressed, deputy mayor or the village itself.
DS	0,5	Even though, this category also represents its citizens, this entity proves less weight than the operator (D) in which the plan is directly located in the land register. Therefore, a half value of the coefficient is expressed
O	0,1	This coefficient represents a single public interest. If more people joined, the comments should prove more weight. The citizens themselves are not taken into account so much that was the reason to set so low coefficient.
OS	0,5	Although, a civic association may be composed of only three people, the initiative is needed for the foundation, and also the preparation of legal conditions, etc. For this reason, a higher coefficient was elected.
S	0,5	This category received the same coefficient as civic associations, as also consists of a greater number of entities and requires a certain degree of organization and initiative.
SP	1	The petition must contain a sufficient proportion of the signatures of the territory. Therefore, the same rate as in DÚSC was selected.
J	0,5	The same reasons are applicable as with citizen groups and civic associations.

Source: own processing according to Bilíková (2015)



3: Regions of the Czech Republic according to potential wind capacity

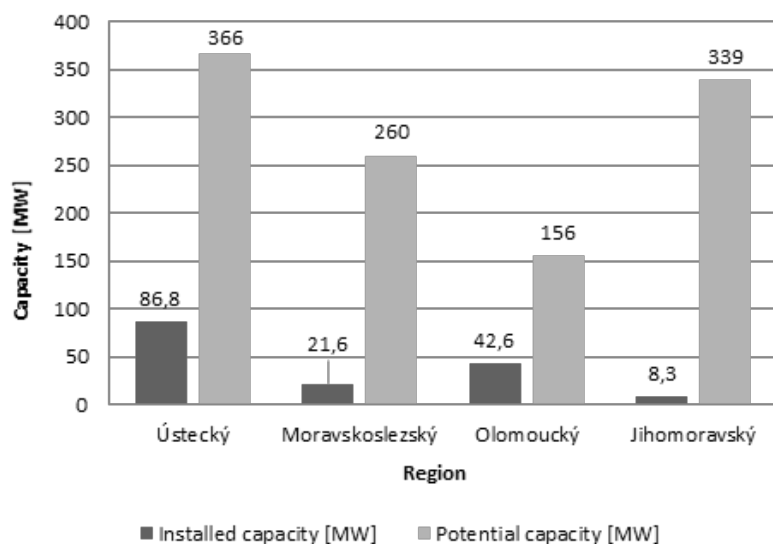
Source: own processing according to Hanslian, Hošek, Štekl (2008)

Jihomoravský region. The maximum potential up to 366 MW of the studied regions reached the Ústecký region. In terms of the number of previously installed equipment, a significant difference is evident in a comparison of Ústecký and Olomoucký regions compared to Moravskoslezský and Jihomoravský regions. The number of WPPs in the Ústecký region is increased more than six times. The reason is, as already mentioned in the characteristics of the Olomoucký region, the fact that WPPs of the weaker performance around 1 MW are installed in this region while most of the built WPPs have power of 2 MW in the the Ústecký region. A power of 2 MW belongs to one WPPs in average in the Moravskoslezský region which is the same as in the the Ústecký region and vice

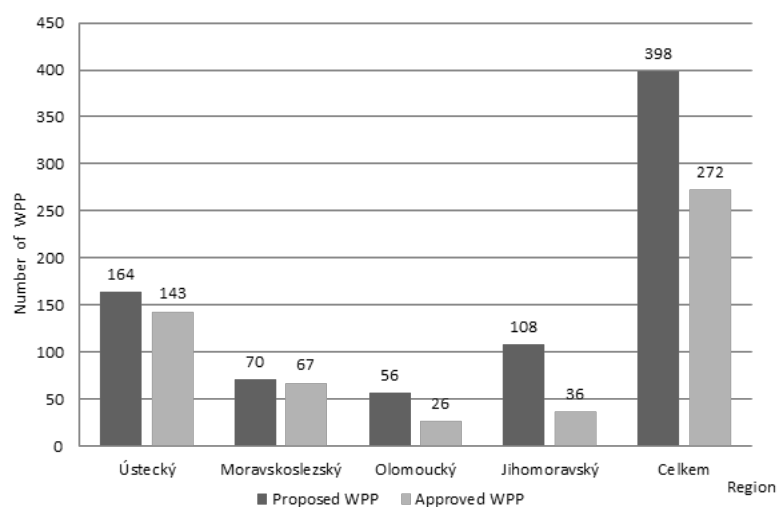
versa twice more than in the Olomoucký region. The Jihomoravský region has the least implemented WPPs and also the smallest installed performance from all studied regions. Seven WPPs of 8.3 MW are realized in this region.

Approved WPPs

The graph shows that a favorable opinion of almost every proposed WPPs received the Jihomoravský region. Dissenting opinion in this region has got only project called MSK – 348 Wind Park of Oderské vrchy – Veselí, Dobešov in which none of the three proposed WPPs has received a favorable opinion. Overall 70 of WPPs in the region were assessed and up to 67 plants obtained a favourable opinion. But all WPPs were not realized. The reason



4: Installed and potential wind capacity of individual regions [MW]
Source: own processing according to data from ČSVE.cz (2014)



5: Proposed and approved WPPs in the EIA process
Source: own processing according to data from portal.cenia.cz

could be the suspension of projects within the next steps following the EIA process such as changing the zoning of the affected municipalities or obtaining a building permit etc. A high proportion of approved WPPs also the Ústecký region reaches with about 87%. Roughly every second proposed WPPs is approved in the Olomoucký region. Regarding the Jihomoravský region, every third proposed WPPs is approved in the EIA process. Within the 19 cases, 108 plants were reported while a favourable opinion received only 36 plants which may be the reason why the Jihomoravský region has not reached such high potential of installed performance and currently, only 7 plants have been realized in this area. Overall, up to 398 plants were suggested from which about 70% received a favorable opinion.

Number of cases and the average point value of public participation in the EIA process

This part of the work is already covered by public participation in the EIA process. The average point value of public participation was examined as the first indicator in one case at individual regions. The point value was obtained by taking into account the type of entity that submitted comments, number of comments, and also taking into account the number of cadastral territories in which is included the WPPs project. Tab. VI demonstrates the number of cases of EIA, point value of public participation, and the average point value per case for each region.

Most cases, arriving at standpoint in the EIA process, were recorded in the Ústecký region. The least ten cases were found out in the Olomoucký region. Overall, the 65 cases were analyzed according to selected criteria in all regions. Even though the Olomoucký region had the smallest number of cases reaching nearly 400 points which is the most of all monitored regions. Taking an average of one case, 40 points were received. The public participated in the EIA process. Mainly five projects, which were ranked among the ten projects with the highest value of participation, proved the credit on this fact in this region. For example, a project called SWR-467 of construction of the Skřípov Wind Park, to which were sent total of 274 comments that is the highest number of all 65 projects.

The public is the least involved in the EIA process in the Ústecký region where one case obtained an average of 9.8 points. The Moravskoslezský region proved higher a few tenths of a point (10.7). The Jihomoravský region reached the average of all regions i.e about 16.5 points per case.

Public Participation in the Type of Entity

This part focuses on the distribution of subjects which participated in individual regions. So who most contributed to the EIA process and who the least. The conclusion is presented on Fig. 6.

Ústecký region

Out of 690 comments, 305 of them belong to these associations. Notably civil association called Krušno commented the 8 cases from 22 cases. Totally, 198 comments of these projects represented almost two thirds of all comments sent by civil society. Followed by 27% of DÚSC consisting of municipalities and the Council of the Ústecký region were determined. Almost the same participation of individual citizens was found out which posted a total of 170 comments. The remaining categories were involved by insignificant percentage in the EIA proces.

Moravskoslezský region

Civic associations were involved more than 60%, e.g. more than those in the previous region. Overall 233 comments from a total of 381 were received from these associations. A civic association, called Nízky Jeseník, was primarily detected the most active.

After these associations, up to 14% of the citizens themselves were included who were followed by 12% of DÚSC and "other" of 10% which involved primarily the business and profitable entities. The remaining categories reached only a small share.

Olomoucký region

In the Olomoucký region, three categories of nearly the same share were participated in the EIA process namely the categories of citizens (28%), civil associations (27%) and DÚSC (25%). Overall, 826 comments were sent to 10 cases. A larger proportion than in previous regions reached

IV: The number of interest intentions in the EIA process, the point value of public participation and the average point value of public participation in individual regions

Region	Number of interest intentions in the EIA process	Point value of public participation	Average point value of public participation
Ústecký	22	216.7	9.8
Moravskoslezský	14	150.2	10.7
Olomoucký	10	398.2	39.8
Jihomoravský	19	313.0	16.5
Total	65	1078.1	16.6

Source: Own processing according to data from portal.cenia.cz

a petition written by citizens and groups of citizens (more than 5 people).

Jihomoravský region

In the Jihomoravský region, the citizens were the most participated in the EIA process up to 38% who sent up to 337 comments of the total of 897 posted for 19 cases. Consequently, civil associations with 33% followed by DÚSC of 23% were also involved. The remaining categories account for only 6% of all received comments.

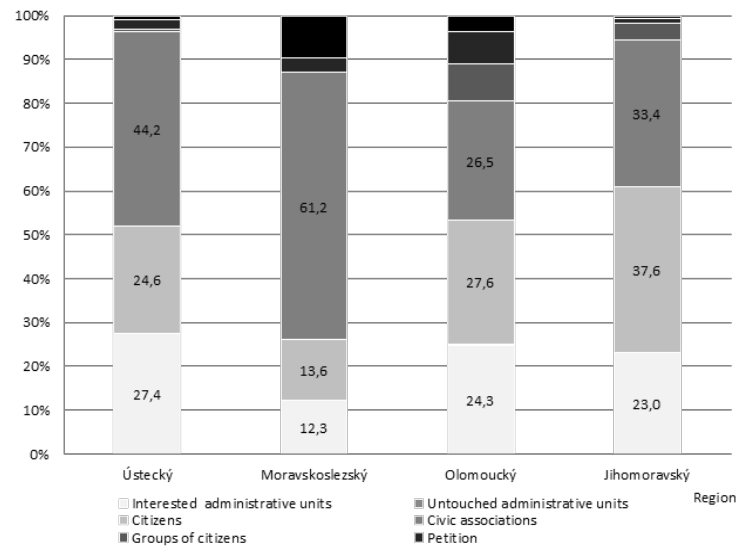
Comparison of Regions

According to a comparison of regions in terms of expressing entity, we can say that in all regions, most

notably the three groups were participated such as civic associations, citizens and DÚSC. None of the regions used the petitions but rather the citizens were organized into associations or comments. Untouched units were identically expressed less than 1% in all regions. Overall up to 2,794 comments to 65 cases were sent by entities in all regions. The highest share proved civic associations with 37.8% from 1,057 comments.

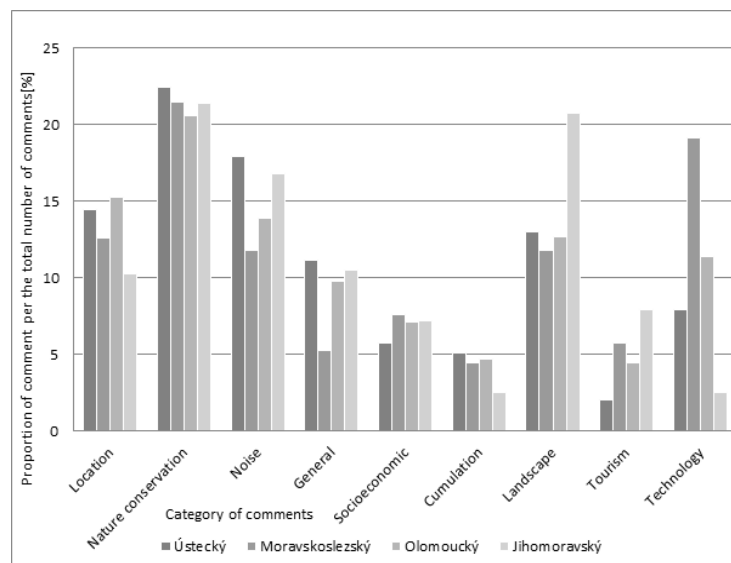
Categories of comments according to a type

Fig. 7 shows the proportion of comment per the total number of comments according to categories and also a comparison between the regions.



6: Public participation in the type of entity

Source: own processing according to data from portal.cenia.cz



7: Category of comments in individual regions

Source: own processing according to data from portal.cenia.cz

In all studied regions, “fauna and flora” achieved the largest share of the category which exceeded the share up to 20% (in the Ústecký region up to 22.5%, in the Moravskoslezský region up to 21.5%, in the Olomoucký region up to 20.6% and in the Jihomoravský region up to 21.4%) of total received comments. Thus, one fifth of all comments was accounted for this category in each region. However, the graph shows that for example the “Landscape” category (of 20.7%) was much closer to the percentage share in the Jihomoravský and Moravskoslezský region and the “technology” category was detected up to 19.2% in the Moravskoslezský region.

In Olomoucký and Ústecký region, the category of “fauna and flora” formed a significant proportion than in other regions. In the Olomoucký region, the project called SWR-467 Construction of the Wind Park Skřípov, in which up to 69 comments were received in the category of “fauna and flora” relating mainly with the negative impact of the WPPs to protected areas such as natural monument Skřípovský wetlands, natural parks called Kladecko and Řehořkovo Kořenecko. The public also mentioned negative impacts on ÚSES elements.

In the Ústecký region, project called ULK-658 Wind Farm Hora Sv. Sebastian and Křimov Wind Farm received many comments on this category. The public objected WPPs impact on birds and bats nesting in the vicinity of potential construction of power plants. A negative influence on the black grouse is mainly mentioned. This project is also rejected by the public because of the location of WPPs near the Natural Park and Bird area called Novodomské rašeliniště – Kovářská included in NATURA 2000. The smallest share of the categories such as “tourism”, “accumulation” and “socioeconomic impacts” were almost consistently reached in the studied regions.

Interesting course can be seen in the category of “technology” in which the share of total comments differs considerably between the individual regions. Mentioned above, the Moravskoslezský region achieved the second highest share up to 19.2%. The reason was a higher proportion of subjects expressing business and a profitable type than the other regions (up to 10%) reached which directed the comments especially to the technical impacts of WPPs. Conversely, this category along with the category of “cumulation” contributed the least (up to 2.6%) in the Jihomoravský region. If the individual regions were not distinguished and the share of the categories was generally viewed, the share of categories would be as follows: fauna and flora (of 21.4%), noise (of 15.6%), landscape (of 15.2%), location (of 13.1%), general (of 9.7%), technology (of 8.8%), socioeconomic (of 6.9%), tourism (of 5.2%) and accumulation (of 4.1%).

DISCUSSION

The study also considered the question whether the proposed number of WPPs in the project affected the number of comments received on the EIA process, whether the number of comments increased in recent years and whether a higher rate of public participation affected issued standpoint on the projects of WPPs construction. To some extent, we can confirm that the number of proposed plants in projects did not affect the number of comments received on these projects which pointed to other factors influencing the number of comments. Worth mentioning, for example, can be the time factor and the potential location of WPPs.

The development of raised comments had proved an increase in comments during the EIA process till the year of 2009 when the decreasing trend of comments started to be observed. A possible reason can be the lower number of projects in the EIA process caused by a reorientation of investors to another type of alternative energy through photovoltaic plants. Also we can say that the higher participation rate could influence issued standpoint but not in all projects. But public participation in the EIA process can be considered as important.

Proved relevance analysis of comments confirmed that the comments were really taken into account in the issuing of standpoint i.e. the comments leading to dissenting standpoint, a reduction of proposed WPPs or at least incorporation into the process of WPPs construction. Therefore, the public should be educated and encouraged in the participation of the EIA process in the projects with potential negative impact on the environment not only in the WPPs construction.

According to O’Faircheallaigh (2010), the issue of public participation in EIA is a major focus for scholars and practitioners – e.g. Diduck and Mitchell (2003), Mayoux and Chambers (2005), Hartley and Wood (2005), Doelle and Sinclair (2006), Stewart and Sinclair (2007), Chavez and Bernal (2008), Devlin and Yap (2008), Lockie *et al.* (2008), Morrison-Saunders and Early (2008). While some scholars do indicate that public participation can in certain circumstances have negative consequences (Cooper and Elliott, 2000; Lawrence, 2003), the overwhelming view is that it is highly desirable and that the key issue for scholars and practitioners is to find ways of making it more effective (O’Faircheallaigh, 2010).

Finally, wind farms are an important phenomenon in coastal waters. To evaluate their perception of the public Mills and Rosen (2006) used personal interviews, focused on respondents’ perception. Teisl *et al.* (2014) applied questionnaire focused on costs and benefits of offshore wind (Bush and Hoagland, 2016). Even these methods can be used for individual wind farms in the Czech Republic. However, their use is possible only for an ex-post evaluation. Contrary to our assessment, these evaluations bring a perception of existing power plants by the public.

CONCLUSION

The study has been devoted to the EIA process and analysis of citizen participation within the construction of WPPs projects. In total 65 projects of WPPs, arrived in the phase of favorable standpoint in the EIA process, were evaluated. All projects were involved in the regions of the Czech Republic and the following conclusions were deduced:

- Most of the projects with the standpoint in the EIA process proved the Ústecký region (22), the fewest projects were found out in the Olomoucký region (10).
- The public was most involved in the EIA process in the Olomoucký region and the least involved public was detected in the Ústecký region from the assessed regions.
- Up to 90% of the proposed projects were approved in the Ústecký region in the EIA process. The smallest percentage of WPPs was proved in the Jihomoravský region where every three WPPs was included in the EIA process.
- Overall, up to 70% of WPPs were approved for all evaluated regions in the EIA process.
- Civic associations, individual citizens, and the local administrative units were the most involved in the EIA process in all regions
- The most public comments on WPPs were found out the effects on flora and fauna, landscape and the increased noise levels in the EIA process. The least comments were concerned on the impact on tourism and socioeconomic situation.

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