

Peter MIHÓK

**SAFE SPACE EVENTS
PRECEDING NUCLEAR SECTOR.
TRANSBOUNDARY IMPACT
ASSESSMENT PROCEDURES:
POTENTIAL IMPLICATIONS
FOR THE VISEGRAD COUNTRIES
AND UKRAINE**

Abstract

After they have been provided with a party to proceedings status in Transboundary Impact Assessment (TIA) procedures, non-governmental organisations (NGOs) and to some extent also relevant self-governments were expected to play a more intensive role in knowledge management of transboundary environmental and health risks. The research performed within the project acronymed IPPA has revealed that such an expectation was not fulfilled in Europe in the nuclear sector. This paper summarizes the results of IPPA project research and relates them to the relevant results of several other scientific research activities, with an overall aim to shed more light on a need to deal with nuclear knowledge management (NKM) and trust management jointly. The concept of semi-formal safe space events preceding TIA procedures is introduced as one of the options for dealing with NKM and trust management jointly, and feasibility of this concept is briefly analysed. In the concluding part, potential implications for the Visegrad four countries and Ukraine are briefly outlined.

© Peter Mihók, 2018.

Mihók Peter, Ing., PhD, Banská Bystrica, Slovakia.

Key words:

Transboundary Impact Assessment (TIA); nuclear knowledge management (NKM); trust management; NGOs; safe space events.

JEL: P48, O19, Q32, O44.

Introduction

The nuclear sector poses specific challenges in resolving disputes over potential transboundary impacts of intended industrial activities because (a) transboundary impacts of nuclear installations are typically negligible under their regular operation but may become devastating in cases of accidents or natural disasters, and (b) clear and convincing evidence of significance of transboundary nuclear damage may typically be assessed only *ex post*, i. e. only after events unexpected to happen due to their low probability.

Due to their strong commitment in preventing negative environmental and health impacts, stakeholders such as NGOs and self-governments requested to be involved in nuclear sector Transboundary Impact Assessment (TIA) procedures especially after when devastating transboundary impacts of Chernobyl disaster became known in the late 1980s and during the 1990s. In the European Union (EU), party to proceedings status in Transboundary Environmental Impacts Assessment (TEIA) procedures was provided to NGOs, self-governments and individuals that claim to be affected by the impacts of intended industrial activities by the Directive no. 2003/35/ES (which amended the so called «EIA Directive» no. 85/337/EEC). Party to proceeding status of NGOs and self-governments applies also in Transboundary Strategic Environmental Assessment (TSEA) procedures that concern assessing potential impacts of applying various strategic documents into practice already before submitting these documents for approval to the Government(s), respectively to the Parliament(s).

The party to proceedings status provided NGOs and self-governments not only with a legal right to request and obtain due account of their comments, questions and proposals submitted within TIA procedures, but also with several ways to appeal and remedy procedural failings to implement TIA procedures in

accordance with the relevant national and international legislation (Marsden, 2009, in Koivurova and Marsden *eds.*, 2011, p. 122). Some legal unclarities however exists concerning interpretation of International Conventions that apply in relation to performance of TIA procedures (Bastmeijer and Koivurova *eds.*, 2008, see for example p. 43-44).

The research of NGOs and self-governments experience with the recent nuclear sector TIA procedures

The experience of NGOs and self-governments representatives with the recent nuclear sector TIA procedures was researched in the project acronymed «IPPA». The acronym stands for Implementing Public Participation Approaches (in Radioactive Waste Disposal). IPPA was a research project within the 7th Framework Programme of the European Atomic Energy Community (Euratom) for nuclear research and training activities, implemented in the period 2011–2013.

The research of cross-border issues held within the IPPA project contained the two different methods of gathering inputs from the representatives of self-governments and NGOs that participated in the recent nuclear sector TIA procedures – questionnaire and bilateral interviews. The questionnaire consisted of twenty five items, each one representing a particular aspect of typical nuclear sector TIA procedure. The respondents evaluated their experience with each given aspect of TIA procedure on a scale from minus three (reporting critical problems, resp. strong dissatisfaction) to plus three (reporting application of the best practices, resp. strong satisfaction). Fifteen different experiences of seven environmental NGOs and one state (Land) level Government with the ten different TIA procedures (with the eight different TEIA and the two different TSEA procedures) were reported by means of a questionnaire in the period between November 2012 and May 2013. The three respondents were from Austria, the two were from Germany, the two were from other EU member states, and the last respondent represented an international NGO. All the details concerning this questionnaire research are, together with the full results, publicly available in the IPPA project's Deliverable 3.2 (Mihók, 2013).

An option to provide inputs to the IPPA project research by means of bilateral interview was offered to all the self-governments and NGOs active in the recent nuclear sector TIA procedures, i.e. regardless of the stakeholder's willingness be involved in the questionnaire research. The three representatives of self-governments, resp. Country (Land) level Governments from Austria preferred to share their experience with the recent nuclear sector TIA procedures

only in this way. Contrary to that, the three other interviews were held with such representatives of NGOs that provided their inputs to the IPPA project research also by means of a questionnaire. The interviews were held in the period from November 2012 to November 2013.

The reasons behind rather low response rate to the IPPA project's research related mostly to the combination of (a) low capacities of NGOs and self-governments for volunteering in such research activities and (b) lack of trust in the research, caused mostly by the fact that the IPPA project was co-financed by Euratom, i. e. by the subject whose key interest is promotion of nuclear energy (Ibid., pp. 14–16 and pp. 54–56).

Experience concerning transparency of information

As many as ten out of the twenty five IPPA questionnaire items concerned transparency either directly or indirectly. For seven transparency-related items, the respondents provided more positive responses than for all the other questionnaire items – but these responses were on average not positive, but slightly negative. In particular, the seven best evaluated aspects of the recent nuclear sector TIA procedures were the following:

- Informing the respondent about date, time and place of the public hearings (average response «–0,2» calculated from 11 responses by 5 stakeholders concerning 7 different TIA procedures);
- Fulfillment of respondents' or national government's requests for more translations (average response «–0,2» calculated from 10 responses by 5 stakeholders concerning 6 different TIA procedures);
- Notification of respondents about the TIA procedure by the relevant authority (average response «–1,0» calculated from 15 responses by 8 stakeholders concerning 10 TIA procedures);
- Quantity of information (documentation) that was proactively translated into language of potentially affected country (average response «–1,2» calculated from 13 responses by 8 stakeholders concerning 8 TIA procedures);
- References to the reports prepared under the IAEA Conventions in the TIA documentation (average response «–1,3» calculated from 4 responses by 4 stakeholders concerning 3 TIA procedures);

- Quality (i.e. structure, understandability, etc.) of documentation that was proactively translated (average response «–1,3» calculated from 12 responses by 7 stakeholders concerning 7 TIA procedures);
- Providing the information about the TIA procedure on the webpage of the relevant authority in a timely way (average response «–1,5» calculated from 14 responses by 7 stakeholders concerning 10 TIA procedures) (Ibid, p. 98).

In contrast with the above listed seven questionnaire items, the respondents reported very critical problems with regards to these three transparency related aspects of the recent nuclear sector TIA procedures:

- Proactive notifying/informing of respondents within post TIA stages (average response «–2,7» calculated from 12 responses by 6 stakeholders concerning 8 TIA procedures);
- Availability of information about right to legally appeal the decisions made at/after the TIA procedure (average response «–2,5» calculated from 12 responses by 6 stakeholders concerning 8 TIA procedures);
- Handling of respondents' organisations' questions or requests for information after TIA formal end (average response «–2,5» calculated from 6 responses by 3 stakeholders concerning 5 TIA procedures) (Ibid).

Experience concerning taking due account of the outcome of the public participation

Out of the twenty five IPPA questionnaire items, the two items concerned the issues related to options open for consideration, i.e. alternatives of intended activities. The questionnaire item «Consideration of alternatives (other than the zero alternative)» was the second most critically evaluated aspect of the recent nuclear sector TIA procedures, with an average evaluation of «–2.9» given by the six respondents for the thirteen different experiences they had with nine different TIA procedures. The item «Consideration of the zero alternative» ended up being the fourth most critically evaluated aspect, with an average response of «–2.8» given by the six respondents for the fourteen different experiences they had with nine different TIA procedures. For both these questionnaire items, all the experiences with just one exception were reported as the most critical, i.e. with the worst rating of «–3» (Ibid., pp. 92–93).

Several representatives of the self-governments and NGOs, interviewed within the IPPA project's research, put significant emphasis on explaining that in several TEIA procedures there were no real alternatives open for discussion. The

respondents often mentioned that they had an impression that both project promoters and competent political authorities from source countries have already been pre-decided about allowing intended activities without considering two or more alternatives, respectively also the zero alternative.

The issue of taking due account of the outcome of the public participation was presented in the five different items of the IPPA project's questionnaire. For four of these items, the majority of respondents reported problems, resp. the dissatisfaction:

- Feedback to questions at public hearings: understandability of the answers, and opportunities to verify correctness (average response «-2,2» calculated from 10 responses by 6 stakeholders concerning 6 TIA procedures);
- Feedback to questions at public hearings: complementarity and harmony of «text answers» and answers at the hearings (average response «-2,1» calculated from 8 responses by 4 stakeholders concerning 5 TIA procedures);
- Feedback provided to questions/comments: keeping correct focus on the issues raised (average response «-2,1» calculated from 11 responses by 7 stakeholders concerning 7 TIA procedures);
- Completeness and exactness of inclusion of comments/proposals into TIA documentation (average response «-1,9» calculated from 12 responses by 6 stakeholders concerning 6 TIA procedures) (Ibid., p. 98).

The fifth questionnaire item concerning taking due account of the outcome of the public participation was phrased «Proponent's willingness to accept your key proposals, i. e. to make changes to the project/plan». This item was responded by the six out of the eight questionnaire respondents, in all cases with the most critical reply of «-3», which concerned as many as nine out of ten recent nuclear sector TIA procedures (read more in: Ibid., p. 17).

NGOs and nuclear sector TIA procedures: court cases instead of involvement in knowledge management?

The results of the IPPA project's research revealed that negative experience of NGOs and self-governments representatives with the recent nuclear sector TIA procedures concerned not only the procedural issues, but to a larger extent the issues related to the nuclear knowledge management (NKM) content

such as determination of areas of potential impact, consideration of alternatives, taking full length of a nuclear cycle into account, etc. Moreover, very critical evaluations were reported not only with regards to willingness of authorities to take due account of NGOs' submissions, but also with regards to handling of questions or requests for information after TIA procedures formal end (Ibid., p. 98). One of the most experienced representative of NGOs commented his critical evaluations with the words that the recent TIA procedures «in most cases did not even provide real consultations (which would mean exchange of arguments and opinions on a par with one another), let alone participation in decision making» (Ibid., p. 42). Another stakeholder explained his negative experience with the recent nuclear sector TIA procedures that his perception of these types of formal procedures has changed over the years, and that now he sees TIA procedures «as something secondary, with a potential use to delay bad projects» (Ibid.).

Out of the fourteen different experiences of NGOs with participating in the recent nuclear sector TIA procedures, the respondents reported four different court appeals submitted by the two different NGOs concerning the four different TIA procedures (Ibid., p. 89). As there were only the eight different TEIA procedures researched within the IPPA project, and all the four court appeals by the NGOs concerned this type of TIA procedure, the IPPA project research has shown that there were court appeals submitted at least by one NGO in relation to at least one half of the recent nuclear sector TEIA procedures – the term «at least» is used here as there might have been additional court appeals concerning other TEIA procedures submitted by one or more of anti-nuclear NGOs which refused to be involved in the IPPA project research due to that the project was co-financed by the pro-nuclear entity the Euratom.

Very frequent litigation by NGOs with regards to transboundary impact assessment procedures was reported in the United States, too. Kersten (2009, p. 205) goes even further in emphasizing growth of TIA procedures related court case submissions by NGOs by suggesting that NGOs have primarily used the United States' National Environmental Policy Act to «to harry federal agencies with questionable lawsuits». In this regards, Kersten uses the term «courtroom guerrilla tactics» and provides an important observation that «though these courtroom guerrilla tactics contribute to environmental preservation, they do so at a high cost of judicial and administrative resources» (Ibid.). One of the indirect aims of the IPPA project was to research how these high judicial and administrative costs could be avoided, i.e. which NGOs positions could and should have been paid due account of prior to TIA procedures in order for NGOs to chose involvement in knowledge management instead of «courtroom guerrilla tactics».

Importance of trust management in nuclear knowledge management

Most authors studying knowledge management in general (i.e. without any relation to the nuclear sector) assert that trust is a fundamental mediator in knowledge sharing (Castelfranchi, 2004, p. 1). With regards to the nuclear sector, the importance of trust into the authority, resp. into the individual who provides the risk information is often emphasized (Leiter, 2008, p. 44). In this regards it is important to mention that trust in the nuclear regulators has been often reported to be insufficient, even for some of the most democratic countries such as the United States of America (USA) or the United Kingdom (Holland, 2002, pp. 290–291). According to Vander Beken, Dorn and Van Daele (2010, p. 20), «public surveys seem to suggest that a majority of the general population in some European countries may not trust experts and governments on the nuclear issue». High trust in both government and nuclear industry was reported by public opinions surveys only in Finland and Sweden (Darst, Dawson, 2010, p. 75).

The case of decreased trust into the Government and scientists as providers of safety information was recently discussed mainly in relation to consequences of the accident at the Japanese Fukushima. For example, a poll result published in 2012 by the Pew Research Center from the USA reported that «76 % of Japanese people believed that food from Fukushima was not safe, despite government and scientific assurances to the contrary» (Brumfield, 2013, p. 293). The concluding part of the quoted report about a legacy of the Fukushima accident, published in the renowned journal of science «Nature», was entitled the «Fear factor» – this is an important impetus for the knowledge management, where it may be worthwhile to distinguish between the fear factor and the trust factor, and to study relations between these two factors.

For the purpose of this paper, it is important to mention that placing NGOs on a margin of knowledge management activities performed within TIA procedures can sometimes lead to a decrease of trust to official providers of nuclear sector information. The reason is that especially environmental or local NGOs are often able to work with the fear factor in affected communities more easily if they can present proofs that they have been excluded from access to risk communication and knowledge documentation by the official authorities despite of their interest to be involved in these NKM activities. Presenting such proofs may increase the fear of affected citizens that intended nuclear sector activities may have worse environmental and health impacts than presented by official authorities in relevant official documents or events. NGOs can utilise the fear factor especially if exclusions of NGOs from knowledge management can be presented in relation to official TIA procedures in which NGOs hold strong rights to be in-

formed and to participate due to that they have been legally provided with a party to proceedings status in these procedures.

In the most extreme cases, NGOs can benefit from the fear factor by becoming the most trusted providers of information in a certain region or a by a certain group of people. Bickerstaff et al. (2008, p. 155) mention one such example by quoting the results of the survey of more than 300 respondents from the United Kingdom (UEA/MORI Risk Survey 2002). This survey revealed that the highest degree of trust to providers of nuclear waste information was associated with NGOs (75%) and with scientists working for NGOs (69%). Important for the purpose of this paper is to mention that trust also to the local authorities (50%) was reported to be higher than trust to scientists working for government (48%), and significantly higher than trust to scientists working for nuclear/energy industry (36%), trust to the national government (35%) and trust to the European Union (35%). This example suggests that even in the most democratic countries, trust management seems to be necessary in the nuclear sector in order to achieve trust of potentially affected lay people into considering official authorities be a credible source of nuclear sector information.

The fear and trust factors concerning provision of nuclear risks information are especially important with regards to siting procedures for spent nuclear fuel final repositories. The reason is that spent nuclear fuel final repositories were often proposed, resp. considered to be located away from the current nuclear power plant localities, i.e. in the regions in which affected lay citizens have never been involved in nuclear risk communication. Communities in such regions are therefore sometimes labelled as «virgin communities», as opposed to «nuclear communities» which are sometimes referred also as «nuclear oases» (see for example: Darst, Dawson, 2010, p. 58).

Feasibility of international semi-formal safe space events concerning nuclear waste management

A vision of the IPPA project team from late 2013 was that trust of NGOs and self-governments in near future nuclear sector TIA procedures could be enhanced by means of taking due account of NGOs and self-governments positions presented at preceding semi-formal discussions concerning (a) data and methods to be additionally applied in order to more precisely determine areas of potential transboundary impacts in screening and scoping procedures that are initial parts of TIA (i.e. to determine areas of potential impacts also for cases of potential accidents, etc.), (b) optimal structure and format of TIA documentation, (c) optimal timeframes and deadlines in TIA procedures allowing for a meaningful

involvement also of such stakeholders that have limited capacities to participate, and (d) optimal way of providing information about when and how appeal mechanisms could be used after TIA procedures formal ends. A presumption here is that should NGO representatives, already within early phases of near future TIA procedures, experience that due account was taken of their positions from preceding semi-formal safe space events, they might reconsider to have a constructive approach towards formal TIA procedures instead of «courtroom guerrilla tactics».

The IPPA project identified these three «topical groups» concerning transboundary impacts as the most feasible agenda for near future semi-formal safe space events to be held prior to TIA or decision-making procedures concerning final solutions for spent nuclear fuel or other hazardous radioactive wastes:

1. Proper time frames and ways of communicating data and methods (to be) used within TIA procedures to determine areas of potential transboundary impacts of SNF final repositories;
2. Challenges in appealing lack of «due account» to comments / proposals submitted in TIA procedures; and
3. Progressing with complexity and interdependence of NWM and other nuclear sector issues (for example issues related to health impacts of intended activities, impacts of rare accidents, and also issues related to democracy standards of decision-making and project permit procedures concerning intended nuclear sector activities).

All these three «topical groups» are in more details outlined in the IPPA Deliverable 3.2 (Mihók, 2013, pp. 49–51).

Even though the topics proposed for international semi-formal safe space events may seem to be focused on TIA procedural issues only, they all have a direct relation to knowledge management of transboundary nuclear risks. For example, the proposal to discuss data and methods to be used to determine areas of potential transboundary impacts in screening and scoping procedures, i.e. before the official start of TEIA procedures, is also aimed to response to the already existing criticism of TEIA procedures for allowing the applicants of intended activities and the lead assessors of impacts to limit scope of assessments in TEIA procedures only to direct and immediate on-site effects under normal operation of proposed activities (see: Lenzen et al., 2003, p. 264). Or in other words, semi-formal safe space events are also aimed to respond to the content-related critical presumption that «TIA methodologies seem to under-predict the severity of impacts» (Bruch et al., 2007, p. 250), which is in the nuclear sector the most relevant with regards to potential impacts in cases of rare accidents or combinations of natural disasters. In this regards, a very important court decision was taken on the 27th March 2014 by the Court of Appeal in London concerning the right of the Irish NGO «An Taisce – the National Trust for Ireland» to request ju-

dicial review of whether their submissions in the TIA procedure for the Hinkley Point C nuclear power station in the United Kingdom were taken due account of by the authorities. In this case, the Court of Appeal in London ruled out preceding decision of the first instance High Court in London which considered judicial review be eligible only for submissions referring to «real risks» or risks caused by accidents of a «serious possibility» (Gent, 2014). With reference to this empiric case, semi-formal safe space events held prior to TIA procedures are meant to avoid litigation of whether and how assessments of impacts under scenarios of rare accidents and combinations of natural disasters should be applied in nuclear sector TIA procedures – this important court case from the United Kingdom may be one of the issues discussed at such events preceding nuclear sector TIA procedures in order to raise clarity about this important but sensitive issue for which the same standards are desired to be applied at the whole territory of the EU.

Within the IPPA project, semi-formal safe space events preceding decisionmaking procedures concerning spent nuclear fuel final storage in «virgin localities» were the most systematically held in the Czech Republic. In late phases of these activities, more and more difficult challenges in realising the vision of paying respect to the results of semi-formal events by the official authorities have been revealed (Vojtechová and Steinerová, 2013, pp. 8–9, 12 and 22). The key challenge in this regards lies in finding an optimal way in which «semi-formal safe space platform» preceding TIA procedures would be institutionalised in order for its results to be binding for the relevant authorities in respective future TSEA/TEIA or other official procedures. Experience from implementation of semi-formal events at the national level in the Czech Republic resulted in the initial proposal of institutionalisation of the semi-formal platform «Working group for a dialogue» which was summarised in the relevant IPPA project report (Ibid., p. 25–26). Institutionalisation of semi-formal platform preceding TIA procedures would most probably be much more difficult on a cross-border level than on a national level, due to that different EU member states have different TIA procedural practice – but this should not be considered a reason not to start a dialogue on this issue.

Within the IPPA project, there was only one attempt to apply semi-formal safe space format a cross-border level – organisation of the event concerning Slovakia and Austria. This attempt, however, turned out to be very complicated and challenging from the two different reasons. The first reason was a very unclear position of the Slovak authorities towards the IPPA project research and implementation activities, especially from the state owned company JAVYS (note: JAVYS, plc. acts as a national agency for nuclear waste issues). The second reason was a need of several pre-confirmed participants from Austria to cancel their participation on rather last moment terms (Mihók, 2013, p. 10). From the latter, an important challenge became known that many NGOs and self-governments can be represented at events focused on nuclear sector issues only by one particular person whose priorities are very often different than nuclear waste management issues (Ibid., p. 53). From this experience, it seems to

be feasible to establish a semi-formal safe space platform only in case that this platform would cover all the three key types of nuclear sector activities with potential significant transboundary impacts: (a) new nuclear power plant units, (b) proliferation of existing nuclear units and (c) spent nuclear fuel final disposal. And, more importantly, the cross-border safe space platform was found to be feasible (from a point of view of the participants feeling safe that their inputs would not be misused in any way) only if it would be financed from a neutral source of finance and not from the Euratom (Ibid., see: pp. 6, 10–13 and 54).

Potential implications for the Visegrad countries and Ukraine

In the document titled «Practical examples on the application of the Convention to nuclear energy-related activities» dated 26 April 2017, the secretariat of the United Nations Economic Commission for Europe (UNECE) prepared an overview of good practice examples in applying the Espoo Convention in nuclear energy-related activities, aimed to be discussed at the sixth session of the Meeting of the Parties to this Convention. These examples concerned the two Visegrad countries – Hungary and Slovakia, together with Belarus, Bulgaria, Finland and Romania (as parties of origin).

«In 2015, Hungary as a Party of origin offered proactively to hold a public hearing in Austria as part of the transboundary EIA regarding its planned construction of a nuclear power plant Paks II». (UNECE, 2017, p. 3). Despite that «at the hearing all necessary Hungarian experts were present and the whole delegation agreed to stay as long as needed to properly answer all questions raised from the public» (Ibid.), the transboundary issues in this case have not been communicated to the full satisfaction of the Austrian actors and stakeholders. In January 2018, Austria informed that it planned to submit a court case for allowing the Paks II project to be implemented (Reuters, 2018a). The Paks II nuclear power plant expansion project therefore can be considered the most appropriate case with regards to which «safe space transboundary consultations» might be worth public spending, despite of the fact that these consultation would take place after the relevant TEIA procedure, i.e. not prior to it as envisaged by the above mentioned authors and researchers that proposed and researched the «safe space consultations concept» in the nuclear sector.

The Slovak case mentioned in the UNECE report concerned the enlargement of the repository for radioactive waste in Mochovce. The TEIA procedure took place in 2011–2013, and UNECE reported «good practice» with the communication with Austria as an affected country, for ex. the use of the English (i. e. neutral language) in the bilateral communication, and postponing of original

deadlines (UNECE, 2017, p. 3). The construction permit was issued in 2016, and the author of this paper is unaware of any actions taken by Austria in this regards. There is, however, another case not yet noted by the academic research, in relation to which there are potential implications of the development of the «safe space format» of consultations prior to TEIA procedures. This transboundary case concerns the plans of Slovakia to permanently dispose the SNF, because one of the potential sites of the deep geological SNF repository, the Rimavská kotlina basin, lies close to the border with Hungary. In rather non-transparent manner, this potential site has been chosen amongst the two most perspective sites (UJP Praha [for JAVYS], 2016, p. 20).

In the Czech Republic, the most relevant theme for near future «transboundary safe space consultations» in the nuclear sector would concern the plan to construct new nuclear units. The Czech government has postponed a decision on this plan, «saying it needed more time to evaluate the impact on its budget and find out EU views on state aid for such a project» (Reuters, 2018b). However, there have also been intensive transboundary talks with regards to the existing and proposed new nuclear builds in the site Temelín, because it is located close to the German and Austrian borders.

Poland does not operate nuclear facilities so far, but it proposed its first Nuclear Power Program in 2011, which was a subject of TSEA procedure. In 2018, the media reported that the Polish state-controlled company «has abandoned its leading role in plans to build Poland's first nuclear power station as it focuses on new wind farms in the Baltic Sea» (Reuters, 2018c). Nevertheless, this cannot mean the end of this Program, but on the other hand the potential new roles of investors for ex. from Russia or China might be an impetus to consider «safe space consultations» devoted to this issue. Some preparations for, even though only national level «safe space events», took place in Poland within the IPPA project in 2011–2013.

In Ukraine, the relevancy of nuclear sector TEIA and related consultations increased in response to the Report of the [Espoo Convention] Implementation Committee from its thirty–sixth session (UNECE, 2017). According to this report, Ukraine would implement the TEIA procedure for the planned lifetime extension of power units 1 and 2 of the Rivne nuclear power plant, in compliance with articles 3 to 6 of the [Espoo] Convention. «The Committee pointed out, however, that in its letter of 7 April 2016, the Committee had specifically invited Ukraine to enter into discussions with Belarus, Hungary, Poland, the Republic of Moldova, Romania and Slovakia» in this regards, and subsequently Austria also had requested to be notified and consulted (*ibid.*, p. 6). In 2017, Ukraine adopted the Law on EIA (the Act no. 2059-VIII, in effect since 18 June 2017).

Conclusions

The results of research activities performed within the project acronymed «IPPA», which were briefly summarised in this paper, brought several pieces of evidence that are in line with these previous research findings:

- that trust is a fundamental mediator in knowledge sharing (Castelfranchi, 2004, p. 1),
- that knowledge documentation is not just a matter of ability to articulate knowledge, but to even greater extent a matter of the *willingness* of the parties involved to document knowledge (Renzi, 2006, p. 216);
- that trust into the authority, resp. into the individual who provides the risk information should be emphasized in NKM (Leiter, 2008, p. 44).

The most important findings of the IPPA project research activities in these regards are those results that explained why trust of many NGOs and self-governments representatives in a will of authorities to take due account of their submissions in TIA procedures must be recreated before it can be assumed that these NGOs and self-governments would be willing to continue to dedicate their full potential into near future nuclear sector TIA procedures (Mihók, 2013, pp. 42–43 and 54–55).

With reference to the IPPA project and other research findings referred in this paper, there seems to be a need for future actions aimed at (a) rebuilding trust of NGOs and self-governments in considering TIA procedures also as an instrument of knowledge management used in the decision making, and (b) building trust of national-level authorities in meaningfulness of documenting knowledge also by means of taking due account of NGOs and self-governments submissions within TIA procedures. The IPPA project team proposed the semi-formal safe space format to be applied in the events organised prior to TIA procedures to fulfil the two abovementioned aims. There were three topical groups proposed as the most feasible themes for discussion at these events, which are outlined above in this paper. The proposal that came from the IPPA project in late 2013 was later found to be in line with the decision of the Court of Appeal in London from the late March 2014 concerning the right of the Irish NGO «An Taisce – the National Trust for Ireland» to request judicial review of account of their submissions taken by the authorities in the TIA procedure for the Hinkley Point C nuclear power station.

The IPPA project research also brought some evidence concerning relevance of previous research findings about content-related criticism of TIA procedures for under-predicting the severity of potential impacts (Bruch et al., 2007, p. 250). This criticism was argued by the fact that the TIA procedures allowed the

applicants and the lead assessors to limit scope of assessment only to direct and immediate on-site environmental impacts under normal operation (Lenzen et al., 2003, p. 264). In parallel to the IPPA project's proposal to expand nuclear risk communication and knowledge management beyond the current scope of TIA procedures for spent nuclear fuel final disposal, the same issue was dealt with by the abovementioned court case from the United Kingdom in relation to operation of nuclear power plants – in both cases, a need to discuss potential impacts also for scenarios in which unlikely accidents were to happen, was proposed to be discussed also with the NGOs. The IPPA project brought important experience with regards to discussing nuclear risks also with the representatives of the so called virgin communities, i.e. with lay people that have never before been involved in NKM. Semi-formal safe space format was applied in the IPPA project activities also due to a need to involve vulnerable local NGOs from virgin localities in discussions concerning sensitive nuclear safety issues.

Application of semi-formal safe space format prior to TIA or decision-making procedures was found by the IPPA project implementers to be feasible only under the condition that such platform would be legally institutionalised and financed from a neutral source (i.e. not by the Euratom). Institutionalisation seems to be necessary in order to achieve the two different aims: (a) to motivate all the different stakeholders with significant nuclear risks knowledge gained at relevant previous TIA procedures, i.e. also environmental and anti-nuclear NGOs, to participate at knowledge management events instead of preferring «courtroom guerrilla tactics»; and (b) to ensure that official political and nuclear regulatory authorities would be willing not only to document knowledge gained at both official TIA procedures and preceding semi-formal events, but also willing to apply this knowledge in their near future activities and political decisions. Even though the IPPA project activities, with exceptions of those which were implemented in Poland, successfully managed to involve key environmental NGOs, it became apparent that institutionalisation of «semi-formal platform» was necessary in order to feasibly secure involvement of NGOs in the long terms – this issue was left for a discussion by the IPPA project team in late 2013 most importantly with regards to the national-level platform in the Czech Republic (Vojtechová and Steinerová, 2013, pp. 25–26).

The above summarized experience of selected stakeholders with the recent nuclear sector TIA procedures cannot be generalised due to a low number of the respondents involved in the IPPA project research of cross-border issues. In this regards, it is important to take into account the fact that several respondents refused to be involved in the research due to that the IPPA project was co-financed by the Euratom. In the context of findings gathered from the representatives of such NGOs that refused to be involved in the IPPA project research of cross-border issues in an official way, it seems to be very reasonable to assume that their responses to the IPPA questionnaire would be as critical as the responses of the stakeholders whose inputs were summarised above in this paper. Taking such a presumption into account, the growing scepticism of many

IPPA research respondents concerning meaningfulness of their involvement in future TIA procedures seems to be worth paying further attention in near future research activities. It seems to be necessary that this issue is dealt with in a wide multidisciplinary environment inclusive not only of the experts on knowledge and trust management, but also of the expert on the international Law, political sciences, European studies etc. In this paper, we also have identified the investment projects that may be considered the most relevant in this regards in the Visegrad countries (Czech Republic, Hungary, Poland and Slovakia) and also in the Ukraine.

Acknowledgement

The IPPA project research leading to some of the key results published in this paper has received funding from the European Atomic Energy Community's Seventh Framework Programme under Contract number 269849.

References

1. Bastmeijer, K.; Koivurova, T.; eds. (2008). Theory and practice of transboundary environmental impact assessment. Martinus Nijhoff Publishers, Leiden (Netherlands) and Boston (USA). ISBN: 978-90-04-16479-6
2. Bickerstaff, K.; Lorenzoni, I.; Pidgeon, N.F.; Poortinga, W.; Simmons, P.; (2008). Reframing nuclear power in the UK energy debate: nuclear power, climate change mitigation and radioactive waste. *Public Understanding of Science*, 17(2), 145-169. E-ISSN: 1361-6609
3. Bruch, C.; Nakayama, M.; Troell, J.; Goldman, L.; Maruma Mrema, E. (2007). Assessing the assessments: improving methodologies for impact assessment in transboundary watercourses. *Impact Assessment and Project Appraisal*, 26(4), 239–251. E-ISSN: 1471-5465
4. Brumfield J. (2013). Fallout of fear. *Nature*, 493 (7432), 290–293. ISSN: 0028-0836.
5. Castelfranchi, C. (2004). Trust Mediation in Knowledge Management and Sharing. In: Jensen, C.; Poslad, S.; Dimitrakos, T.; eds. (2004) *Trust Management. Second International Conference, iTrust 2004*, Oxford, UK, March 29 – April 1, 2004. Proceedings Series: Lecture Notes in Computer Science, Vol. 2995. ISBN 3-540-21312-0.

6. Darst, R. G.; Dawson, J. I. (2010). Waiting for a Nuclear Renaissance: Exploring the Nexus of Expansion & Disposal in Europe. *Risk, Hazards & Crisis in Public Policy*, 1 (4), 49–82. E-ISSN: 1944-4079.
7. Gent, E. (2014). Hinkley Point faces challenge from Irish National Trust. *Engineering and Technology Magazine*, 27 March 2014. Available at: <http://eandt.theiet.org/news/2014/mar/hinkley-ireland.cfm> (accessed 2014-03-28).
8. Holland, I. (2002). Waste not wants not? Australia and the politics of high-level nuclear waste. *Australian Journal of Political Science*, 37 (2), 283–301. E-ISSN: 1363-030X
9. Kersten, C. M. (2009) Rethinking Transboundary Environmental Impact Assessment. *The Yale Journal of International Law*, 34 (1), 173–206. ISSN: 0889-7743
10. Leiter, A. C. (2008). The Perils of a Half-Built Bridge: Risk Perception, Shifting Majorities, and the Nuclear Power Debate. *Ecology Law Quarterly*, 35 (31), 31–72. ISSN: 0046-1121
11. Lenzen, M.; Murray, S.; Korte, B.; Dey, C. (2003). Environmental impact assessment including indirect effects—a case study using input-output analysis. *Environmental Impact Assessment Review*, 23 (3), 263–282. ISSN: 0195-9255
12. Marsden, S.; Koivurova, T.; eds. (2011). *Transboundary Environmental Impact Assessment: The Espoo Convention and its Kiev Protocol on Strategic Environmental Assessment*. Earthscan, London (United Kingdom). ISBN: 978-1-84971-348-1
13. Mihók, P. (2013). How novel approaches can improve public participation in transboundary TIA procedures. IPPA Project Deliverable 3.1. Available at: <http://www.ippaproject.eu/> (accessed 2014-03-10)
14. Renzl, B. (2006) .Trust in management and knowledge sharing: The mediating effects of fear and knowledge documentation. *Omega*, 36 (2), 206–220. ISSN: 0305-0483.
15. Reuters. (2018a). Austria to sue EU over allowing expansion of Hungary nuclear plant [press release dated 22 January 2018]. Available at: <https://www.reuters.com/article/us-austria-hungary-eu-nuclearpower/austria-to-sue-eu-over-allowing-expansion-of-hungary-nuclear-plant-idUSKBN1FB1FJ> (accessed 2018-05-24).
16. Reuters. (2018b). Czechs put off decision on building new nuclear plants. [press release dated 17 May 2018]. Available at: <https://uk.reuters.com/article/uk-czech-nuclearpower/czechs-put-off-decision-on-building-new-nuclear-plants-idUKKCN1I12SD> (accessed 2018-05-24).
17. Reuters. (2018c). Exclusive: PGE picks Baltic wind over nuclear as Poland embraces green power. [press release dated 10 May 2018]. Available at:

- <https://www.reuters.com/article/us-poland-energy/exclusive-pge-picks-baltic-wind-over-nuclear-as-poland-embraces-green-power-idUSKBN11B0LE> (accessed 2018-05-24).
18. UJP Praha [for JAVYS] (2016). Hlbinné úložisko – výber lokality, 1.etapa. Súhrnná ročná správa o stave riešenia vývojových prác HÚ za rok 2015. Document no. IPR I00T UND20007 prepared by UJP Praha for JAVYS, p.l.c. (Slovakia) under the contract no. 212073, resp. no. ZM-35-11-1-00408-04210, dated 6 June 2016. Available at: [https://evo.gov.sk/evo/tender/9542_7105_20170125.nsf/stddocs/ABB386BF3F04B448C12580F10034B3F0/\\$file/Suhr%20RS%202015_20160606_u.pdf](https://evo.gov.sk/evo/tender/9542_7105_20170125.nsf/stddocs/ABB386BF3F04B448C12580F10034B3F0/$file/Suhr%20RS%202015_20160606_u.pdf) (accessed 2018-05-24).
 19. United Nations Economic Commission for Europe [UNECE] (2017). Practical examples on the application of the Convention to nuclear energy-related activities [document no. ECE/MP.EIA/2017/INF.6 dated 26 April 2017]. Available at: https://www.unece.org/fileadmin/DAM/env/documents/2017/EIA/MOP7/27_04_14_ECE.MP.EIA.2017.INF.6_Practical_examples.pdf (accessed 2018-05-24)
 20. United Nations Economic Commission for Europe [UNECE] (2016). Report of the Implementation Committee on its thirty–sixth session [document no. ECE/MP.EIA/IC/2016/4 dated 13 October 2016]. Available at: http://www.unece.org/fileadmin/DAM/env/documents/2016/EIA/IC/14_oct_ece.mp.eia.ic.2016.4_advance_copy.pdf (accessed 2018-05-24)
 21. Vander Beken, T.; Dorn, N.; Van Daele, S. (2010). Security risks in nuclear waste management: Exceptionalism, opaqueness and vulnerability. *Journal of Environmental Management*, 91(4), 940-948. ISSN: 0301-4797
 22. Vojtechová, H.; Steinerová, L. (2013). Critical Evaluation of Knowledge and Experience from RISCOP Implementation and Proposal Changes in the Communication Strategy in the Czech Republic. IPPA Project Deliverable 2.1 + 2.2. Available at: <http://www.ippaproject.eu/> (accessed 2014-03-26)
 23. Vojtechová, H. (2009). Evaluation, testing and application of participatory approaches in the Czech Republic. Application of the RISCOP model in the Czech Republic. ARGONA project Deliverable D14. Available at: <http://www.argonaproject.eu/> (accessed 2014-03-26)