

The Use of Legally-Imposed and Locally-Negotiated Incentive Approaches in the Siting of Nuclear Waste Management Facilities: Comparing Stakeholders' Views in the Czech Republic, Poland and Slovenia – 13534

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ABSTRACT

The purpose here is to contribute to the discussion surrounding the use of community benefits (also known as added value) in radioactive waste facility siting programmes. These are becoming more widely used following a series of programme failures around the world, due in the main to a lack of local involvement. A number of different models for the use of community benefits and why they may or may not assist a siting process exist in the literature, based on either a voluntary market approach or one involving coercion by a state authority or developer. Review of real-life examples suggests that two main approaches to the use of benefits exist, a 'legally-mandated' approach where details are laid down in legislation, and a 'locally-negotiated' approach where the details are agreed by the parties through discussions. As part of the European Commission supported IPPA project (Implementing Public Participation Approaches in Radioactive Waste Disposal), stakeholder groups in three participant countries, the Czech Republic, Poland and Slovenia, all of which currently utilise the 'legally-mandated' approach to the provision of community benefits, were invited to respond to a series of questions designed to explore their attitudes and thoughts about the two approaches and related issues such as trust in the institutions and the legal framework. Some initial results and conclusions are presented, although this work is continuing and will be reported at the end of the IPPA project in 2013.

INTRODUCTION

Incentive and community benefit packages (also referred to as 'added value') are becoming a common element in many site selection strategies for nuclear waste management facilities [see practices reported in 1, 2, 3, 4, 5, 6, 7]. For example, in Sweden and Finland, an incentive/benefit approach, negotiated at the local level between the proposed host municipalities and the nuclear industry, was used as part of siting processes for a spent nuclear fuel repository. The so-called 'Vuojoki Agreement' was signed in Finland in 1999 and the 'Added Value Agreement' was signed in Sweden in 2009 [7, 8, 9]. These agreements represent the 'locally-negotiated' incentive approach. However, in a number of countries a different approach is applied, referred to here as the 'legally-imposed' approach.

The objective of this paper is to present an initial analysis of stakeholders' views on these two approaches to planning incentive implementation. Theoretical starting points are the different approaches to fairness in siting introduced by Joanne Linnerooth-Bayer [10] and the clusters of policy tools in siting introduced by Daniel Aldrich [11]. Their ideas are outlined and are being taken account of in analysis of the two approaches to planning incentive and community benefit packages.

The approaches are defined in the paper as follows:

- (1) The 'Legally-imposed approach': here the type of incentives and benefits, their amount and any associated preconditions are mainly determined beforehand in legislation.
- (2) The 'Locally-negotiated approach': here the type of incentives and benefits, their amount and any associated preconditions are negotiated between the key players at the local level without a legislative procedure. They are then subject to formal agreement between the negotiating parties.

The main questions posed were as follows: what are the stakeholders' views for and against the 'locally-negotiated' approach? Who do the stakeholders think should be involved in determining the content of a locally-negotiated approach? The results presented are intended to contribute to the ongoing discussion in a number of countries concerning the role of benefits and incentives in a site selection strategy.

The research data consists of stakeholders' responses to a survey focused on the use of added value (community benefits) and incentives in siting nuclear waste management facilities conducted as part of the EU-supported IPPA project. In the paper the added value approach is defined broadly, referring to the use in a nuclear waste disposal facility siting program of social and economic benefits, compensation, local empowerment measures and other incentives to encourage involvement of possible host communities. A more limited way of defining added value was introduced by the Nuclear Energy Agency (NEA) in 2007. This drew a distinction between local benefits which have been available traditionally from a radioactive waste management facility and benefits which go beyond these and that may help improve the quality of life in the region. Thus, NEA [12] suggested that added value is limited to cultural and amenity values only.

The survey involved use of a questionnaire developed as part of the IPPA project in three countries: the Czech Republic, Poland and Slovenia. All these countries currently apply a legally-imposed incentive approach [7]. The details of the measures and the current phase of nuclear waste management in these countries are briefly described in the paper.

The target audiences for the questionnaires were the stakeholders represented in the national stakeholder groups established to discuss site selection for a nuclear waste repository in their country. In the Czech Republic this was the 'National Working Group for Dialog on Repository' established in November 2010 to address site selection for a high-level waste repository. In Poland it was the 'RISCOM Reference Group' established in July 2011 to discuss site selection for a low and intermediate level waste repository. In Slovenia it was the newly-established IPPA 'Stakeholder Group', which held its first meeting in October 2011. A total of 105 questionnaires were sent to the stakeholders between November 2011 and January 2012. 43 questionnaires were returned, resulting in a total response rate of 41% (10/29 in the Czech Republic, 11/14 in Poland and in 23/64 in Slovenia) [13, 14, 15].

The structure of the paper is as follows. Section Two introduces the theoretical approach to siting approaches from the literature. Section Three focuses on description of the method, i.e. the questionnaire conducted in the IPPA project. Section Four briefly introduces the current use of benefits in relation to radioactive waste management in the Czech Republic, Poland and Slovenia. Results are discussed in Section Five and some initial conclusions about issues such as confidence, trust and the use of the different approaches are presented in Section Six.

THEORETICAL FRAMEWORK

Daniel Aldrich [11] introduces a categorization of dominant state strategies for tools for solving socio-political problems such as the siting of a hazardous waste facility. Aldrich states that the choice of dominant strategies is a function of the characteristics of potential and actual opposition from civil society. The two extremes of the state strategies are 'coercion' and 'soft social control' (See Table I). The former is based on coercion derived from the state's monopoly over force and the latter on capturing hearts and minds through persuasion, i.e. education, side payments and subsidies seeking to compensate local communities. In theory the results through coercion are achieved immediately and the means applied are deemed efficient and cost-effective whereas softer control strategies are based on changing citizens' views and preferences which is often more time consuming and the results more uncertain.

TABLE I. Clusters of policy tools (Source: [11] p.56)

| Type of policy tool | Goal | Mode of power | Examples |
|----------------------------|--|----------------------|---|
| Coercion | Punish resistance | Hard | Police coercion, land expropriation, cutting grants |
| Hard social control | Block citizen mobilisation, set agenda | Semi-hard | Closing licensing hearings, making NGO registration difficult |
| Incentives | Reward cooperation | Soft | Offering subsidies, side payments and grants |
| Soft social control | Change preferences | Soft | Education, habituation, awards ceremonies |

Aldrich's theoretical approach emphasizes the interaction between the government and citizenry as he investigates the ways in which the characteristics of civil society impact the state's choice of tools. Aldrich argues that the core determinant of state policy instruments is the strength of relevant groups within a society over time.[11] He states that governments encountering strong resistance over time develop more subtle and sophisticated techniques for handling confrontation than states with weaker, more passive citizenries. Thus coerced solutions are likely to be used when long-term opposition from civil society is weak although state agencies initially manage potential conflict by avoiding confrontation whenever possible [11].

Another view on siting approaches is introduced by Joanne Linnerooth-Bayer. She argues that views on fairness are closely related to the forms of social organization and social solidarities. She envisages three different approaches to fairness in siting hazardous waste facilities, which are based on three modes of social organization, i.e. hierarchy, market and egalitarian. These modes of social organization reflect the different ways to establish shared values for the conduct of community procedures and the distribution of rights, goods and burdens. The approaches Linnerooth-Bayer outlines are hierarchical approach, voluntary market approach and egalitarian approach. She notes that the descriptions are only general characteristics of generic approaches, but they help to explain the contradictory views on fair process and outcome that are observed in siting controversies [10].

The first two approaches – hierarchical and the voluntary market – are adopted here to serve as a framework for analysing the survey responses regarding incentives and benefits for repository siting in the three case study countries. The third, egalitarian approach introduced by Linnerooth-Bayer is not considered as real life experience seems to suggest that the hierarchical and voluntary market approaches are the dominant ones [7]. But as mentioned above, the approaches are only general in their characteristics. For example, it could be argued that the approach taken in Sweden includes egalitarian characters as the 'loser' (the municipality of Oskarshamn) gets most (75%) of the benefits promised in the 'Added Value Agreement' [9]. Linnerooth-Bayer [10] also develops a hybrid, more robust approach which aims at reflecting the local cultural plurality, i.e. deserving respect and standing for each view of fairness (i.e. hierarchy, market and egalitarian). Our aim with the simplified framework used here and focused on the two likely approaches highlights the extremes, but egalitarian features, such as responsibility [10], are discussed in the conclusions.

The Hierarchical Authoritarian Approach

The corner stone of the hierarchical approach is the right of the central government to impose a facility on a community. This refers to coercion, which is effectively a state monopoly in the siting process [11]. In this approach, central governments and public representatives act as trustees for the interests of the society at large. In the questionnaire the respondents were asked whether they have confidence in the main actors involved in the nuclear waste policy development in their countries and confidence in the legislation regarding nuclear waste management in their countries. Thus the condition for the public legitimacy of the approach is public trust in the responsible institutions and persons, but also more generally in the norms and basic authority structures. Trust is needed at different levels of the political system.[10] The approach appeals to those who trust their government but also its network of experts to make choices in society's best interests [10].

This purely hierarchical approach is in reality no longer practical due to the emergence of strong public reactions to siting proposals. The extreme mode of the approach is also known as DAD – decide, announce and defend. For example, past siting failures using this approach can be seen in Canada, Italy, Switzerland, the UK and elsewhere. Linnerooth-Bayer [10] notes that the hierarchical approach may also be consultative and even innovative in involving the public, which refers to the use of tools based on a semi-hard or even soft mode of power [11, Table 1]. However the important point is that in the hierarchical approach the final decision rests ultimately with the licensing authorities at the state or federal level. This is the case also in Finland and Sweden, although they are described here as examples of the 'locally-negotiated approach' as the municipalities in both countries are vested with the right of veto, meaning that the hierarchical system cannot overrule the municipal decision on siting the repository.

The coercive and hierarchical approach is referred to in this paper as the 'legally-imposed approach'. This refers to an approach in which the type of incentives and benefits, their amount and any associated preconditions are mainly determined beforehand in legislation.

The Voluntary Market Approach

According to Linnerooth-Bayer [10] an underlying assumption of the voluntary market approach is that communities will agree to host a facility if the residents consider that their personal benefits from the facility outweigh their risks and costs. This is also the basic assumption of economic compensation theory [16]. According to Frey, Oberholzer-Gee, and Eichenberger [17] conventional economic analysis assumes that offers of monetary compensation increase the willingness to accept otherwise unwanted projects. To win the support of a prospective host community, the compensation has to be large enough to offset the net disutility imposed by the project. In the voluntary approach compensation is viewed as the key to community consent. Thus negotiated mechanisms for transfers from the developer to the community are central elements of the voluntary market approach. Linnerooth-Bayer [10] states that unless the 'loser' can be compensated for bearing the risks, few joint gains are possible.

The market approach is countered by arguments which propose that bargaining for health and safety is illegitimate. It is also argued that the market approach perpetuates the rich-poor divide and furthermore supports exploitative and unsustainable technologies [10]. In the questionnaire the respondents were asked whether the use of benefits can make the host community too dependent on the nuclear industry and whether the added value approach causes serious moral problems (Table II, p.10).

Although declining public trust in experts is seen as one reason for the dearth of success through the hierarchical approach, Linnerooth-Bayer [10] notes that the voluntary approach appears to have worked in those cases where the local population trusts its local officials and power brokers to negotiate agreements

in their interest. This was the case in the municipality of Eurajoki in Finland [8]. Thus the voluntary approach is only indirectly dependent on residents' personal cost benefit assessments and appears to be more dependent on the assessments of local politicians. It is vital to understand that the local government entity has the decision authority but that it also has to be trusted by the residents.

In this paper the 'locally-negotiated approach' is taken to be one in which the type of incentives and benefits, their amount and any associated preconditions are negotiated between the key players at the local level without a legislative procedure. Examples of this approach are the benefit packages negotiated in Finland and Sweden [9]. In Finland the host municipality also receives an annual property tax levied on the nuclear facilities, based on legislation. Thus the municipality of Eurajoki has gained both from legally-imposed (property tax) and locally-negotiated benefits (the Vuojoki Agreement).

DESCRIPTION OF METHOD

In each case study country of the IPPA project, i.e. the Czech Republic, Poland and Slovenia, the questionnaire consisted of two parts: part one comprised questions on different issues of public participation (elaborated by the Öko-Institut, Germany); the questions in part two focused on stakeholders' perceptions of an added value approach in the context of nuclear waste management, elaborated by the University of Tampere (Finland) in cooperation with Galson Sciences (UK). The questionnaires were translated from English to Czech, Polish and Slovenian and then the stakeholders' responses were translated back into English by Öko-Institut. Results concerning public participation are reported in three country reports [15, 13, 14].

The respondents to the questionnaires were members of national stakeholders groups established to discuss siting of nuclear waste repository in their particular country. The composition of the stakeholder groups and their role in nuclear waste policy varied in each country, which made comparison demanding.

The first questionnaire was circulated in the Czech Republic in November 2011 [15]. A questionnaire was sent to all Working Group¹ members via e-mail with an accompanying letter which stated the background and the objectives of the survey. It was followed by an electronic reminder some weeks later [15]. In Poland the questionnaire was sent to all members of the Reference Group² in January 2012 via e-mail. It was also presented and discussed during the second meeting of the group in March 2012, in order to encourage as high a response rate as possible [13]. This somewhat different method is one obvious explanation why the response rate in Poland was higher than in the Czech Republic and Slovenia. According to feedback from the respondents, some of the questions were considered to be slightly ambiguous, and the presentation helped to clarify them.

In Slovenia a questionnaire was sent to all participants who were invited to the first meeting³ of potential stakeholders in November 2011 in Ljubljana. The aim of the meeting was to restart communication after an interruption of two years following the cessation of a number of Partnerships formed during the siting process for a LLW repository and an earlier EU project (Cowam in Practice). For this purpose all stakeholders who were involved in the previous Local Partnerships, or the National Stakeholder Group, plus some more potentially interested stakeholders, were contacted. In total 64 people were invited to the first meeting of whom 24 attended. The questionnaire was sent to all by mail with the invitation to the

¹ The mission of the Working Group in the Czech Republic was introduced as follows: "*to define acceptable ways and criteria for selecting suitable locality for a deep repository and establish a transparent process of deep repository siting that would adequately respect the public interests*" [18].

² The mission of the Reference Group in Poland was introduced as follows: "*can organize a dialogue in Poland concerning near surface repository site selection and the possibilities for geological disposal*" [19].

³ The meeting was organized within the IPPA project.

meeting and later – additionally - electronically by e-mail. Simultaneously, the survey was announced at the meeting [14].

Response Rates

In the Czech Republic the questionnaire was sent to all 28 members of the Working Group. Of these only 9 were returned, which corresponds to a rather low response rate of 31.0%. Additionally it should be pointed out that several respondents did not answer all the questions. The questionnaire was completed by 5 of 12 representatives of community governments, 2 of 7 representatives of national governmental organizations/agencies, 1 of 2 representatives of national non-governmental organizations (NGOs) and 1 of 6 representatives of local NGOs [15].

In Poland 11 responses were received from 10 of the 12 institutions represented in the Reference Group. In total 14 questionnaires were sent⁴, thus the response rate was 78.6% (11/14). This was the highest response rate in the three case study countries, although the Reference Group in Poland only started its activities recently. However, it should be recognized that again, not of all the questions were answered by several respondents [13]. Furthermore the fact that neither non-governmental ecological organizations nor representatives of possible host communities for the repository (Rózan as an exception) were represented in the Reference Group [19] has to be taken into account when looking at the results.

In Slovenia, a total of 64 questionnaires were circulated. Of these 23 were returned but two were blank. This corresponds to a response rate of 32.8% (21/64) [14]. However, it should be noted that this compares to the number of stakeholders who attended the first meeting⁵ on November 11th 2011 within the IPPA project. Altogether 64 stakeholders had been invited to the meeting but only 24 attended. Furthermore it has to be considered that this meeting was the first time that Slovenian stakeholders were invited to take part in any meetings following the two-year interruption of the previous participation process. It is also worth mentioning that the invitations to this meeting, and also to the meetings of the National Stakeholder Group in the past, were intentionally sent to a wide circle of people in order to make contact with as many stakeholders as possible [14].

BRIEF DESCRIPTIONS OF RADIOACTIVE WASTE MANAGEMENT AND CURRENT INCENTIVE APPROACHES IN THE THREE SURVEYED COUNTRIES

The Czech Republic

There are two nuclear power plants in the Czech Republic. 4 Soviet designed VVER-440 PWR's are in operation at Dukovany, and 2 VVER-1000 units at Temelin, near Ceske Budejovice in Western Bohemia. There are three operating repositories for LLW from Dukovany (on-site), institutional wastes (Richard II) and NORM wastes (Hostim).

The local communities around the 3 repositories each receive annual payments from the National Waste Fund. These are paid in accordance with the 1997 Atomic Act. A recent amendment to the Act, originally proposed by the National Working Group on Dialogue, has raised the annual funding level to 4 million Czech Crowns (around €156,000).

⁴ Some institutions were represented in the Reference Group by more than one individual

⁵ The meeting took place in Ljubljana which is approx. 100 km away from Krško and Brežice, which might have hindered some stakeholders' ability to attend the meeting.

Poland

Poland originally had four 440 MWe Russian VVER-440 units under construction in the 1980s at Zarnowiec, but these were cancelled in 1990 and the components sold. However, the Polish cabinet decided early in 2005 that the country should move immediately to introduce nuclear power, with at least two plants being proposed, and an initial plant to be in operation soon after 2020. The Ministry of Economy set out a new nuclear power program in November 2010, and this was approved by government in January 2011. Under the current schedule site selection will not be finalized before the end of 2013.

Institutional wastes from nuclear activities in Poland have been managed at the National Radioactive Waste Repository (NRWR) at Rozan since 1961. Since 2000, by the provision of Article 57 of the new Atomic Law, the Rozan community has been receiving an annual payment from the national budget. The value of this payment is around €2,120,000, which makes up about 50% of the total annual budget of the Rozan community.

Slovenia

The Republic of Slovenia has a small nuclear programme, consisting of one operating nuclear power plant at Krško, jointly owned by Croatia, one research reactor and one central storage facility for radioactive waste from small producers.

In 2009 a site near the village of Vrbina, in Krško, was selected for development of a LLW repository. At the end of 2003, a Decree on the 'Criteria for the Determination of the Compensatory Amount due to the Limited Use of the Environment in the Area of a Nuclear Facility' was adopted. It outlined the financial compensation available to relevant local communities hosting a range of nuclear facilities. The payments were scaled according to the type of facility, with a LLW/ILW repository attracting 65% of a base payment of €4.317 million per year, i.e. €2.8 million, to be paid following the issue of a site licence.

An amendment to the Decree was issued in 2008, altering the payment scaling system. The amount available for the repository was changed to two payments of 54% (i.e. 108%) of a revised base payment of €4.7 million (revised to €4.82 in 2009), effectively doubling the amount available to Vrbina to €5.6 million. Payments began in January 2010.

DISCUSSION OF RESULTS

Acceptance of a Tailored 'Added Value Approach'

In the questionnaire the respondents were asked the following: "*Would you prefer the use of an 'added value approach' in which all measures would be based on a multi-party negotiation as part of the site selection process for a SNF/a new LILW/ any future repository in your country?*" The respondents were given three options "*Yes, because ...*", "*Only in part, because ...*" and "*No, because ...*" with a request to give their arguments in their own words.

In the Czech Republic six respondents out of seven (86%) answered "yes" and one respondent (14%) "no". Two respondents out of nine did not answer this question. Positive attitudes were explained with varied arguments. Firstly, added value was perceived as compensation, for example for farmers for the decreasing competitiveness and sale-ability of their products, and for the host community for bearing "*all possible loads connected with construction, operation and mainly with psychological impact on the life of local people*". Secondly, added value was seen as a tool or an option for improvement of regional

attractiveness and further development: “*a financial as well as human potential for further development of communities*”. Thirdly, added value approach was justified by reference to equity. Fourthly, it was seen as a possible way of influencing local opinions. The only negative argument was based on a moral aspect. The respondent emphasized that “*The level of impact on nature and on the life of local inhabitants cannot be compensate for by anything*”.

In Poland eight respondents out of ten (80%) would accept an added value approach based on multi-party negotiations as part of siting whilst the remaining two respondents were only partly in favour. They hesitated because there were no clear rules for using ‘added value’ and as the approach may strain the national budget. None of the Polish respondents opposed the use of a tailored added value approach, but one respondent did not answer. Arguments given by the respondents varied. Firstly, the arguments referred to a certain kind of realism as the host community was seen to be interested only in financial benefits. It was also argued that added value is already used but not discussed. The experiences from the Rózan community⁶ were also mentioned. Secondly, two respondents referred to public engagement. The argument was that the added value approach would help the public to feel more involved and give them more power in decision making and that the approach would enable the local community to engage in the debate. Two respondents argued for increased knowledge of nuclear techniques and for a comprehensive analysis which they hoped would assist negotiations and decision-making.

In Slovenia 11 out of 19 respondents (58%) agreed with use of an added value approach based on multi-party negotiations in siting any future repository in their country. Thus in Slovenia the majority of respondents were more critical of the suggested approach compared to the Czech (86% agreed) and the Polish (80% agreed) respondents. However, according to those respondents with a positive opinion of the approach, added value “*is the way the world is going*” and thus siting “*processes which do not favour this [added value] approach are not successful*”. Another respondent noted that “*some form of compensation is needed in every case*”. In Slovenia 5 respondents out of 19 (26%) agreed only in part because “*there is not enough confidence in this approach*” or because “*an agreement is not always possible*”.

A legal basis, which limits the possible outcomes with added value, was also considered desirable by one respondent, who wrote that “[a] *majority of the public must be committed to achieving this added value, to maximize the legitimacy of the selection of the affected location or locations*”. Thus, fairness and equity were deemed important in allocating added value. On the other hand more critical voices were raised too, and one respondent argued that “*compensation money should be excluded from negotiations, particularly negotiations over environmental and safety matters*”.

Three respondents out of 19 (16%) disagreed with the use of an added value approach. Their argument was that compensation cannot be applied in siting, but that it is necessary to define site selection criteria and openly verify and publish these. Another argument concerned location. According to this view “*[t]he low and intermediate level radioactive waste repository does not belong in urban environment – it needs to be placed far from any settlements, where there is no need for a debate over added value*”.

Actors Involved in Determining the Content of an ‘Added Value Approach’

In the questionnaires the respondents were asked the following: “*Which actors do you think should take part in determining the content of an ‘added value approach’ for a possible host community in your country? Please, name the most important actors from your point of view!*”

In the Czech Republic the mayor, local government or community were mentioned five times (out of a total of nine responses) as actors who should be involved in determining the content of an added value

⁶ A LLW disposal facility is located in Rózan.

approach. Ministries (such as the Ministry of Finance) or other state representatives were mentioned four times, and the waste management organisation (RAWRA) was mentioned twice. Other stakeholders that should be involved, according to the Czech respondents, were owners of large properties and local entrepreneurs, experts and representatives of ecological organisations. These were all mentioned once. Three respondents (out of nine) did not answer the question.

In Poland 9 respondents (out of 11) thought that the authorities at the local level should be involved in negotiations on the content of an added value approach. These respondents referred to the local community, representatives of the local community, the local council, local bodies and the local community administration. Furthermore, local people with authority and the groups most affected were also mentioned. Local entrepreneurs who sell their products and services outside the community were mentioned once.

The national level was mentioned by 5 respondents, with the Ministry of Economy the most frequently mentioned actor. The Ministry of Economy is responsible in Poland for national policies on radioactive waste and management of spent nuclear fuel, as well as for policies on siting and constructing of repositories. In addition, the potential investor/operator of the repository was mentioned by 5 respondents.

Four respondents deemed experts as actors who should take part in determining the content of an added value approach in Poland. The National Atomic Energy Agency and the Radioactive Waste Utilisation Plant (ZUOP in Polish) were mentioned by name, but the respondents had differing views on identifying other experts. Whilst involvement of experts appointed by NGOs was seen as important, at the same time it was emphasized that experts in the field of environmental protection should be independent of the “green” interest groups.

In Slovenia, local level actors were mentioned most frequently, with 18 respondents out of 21 referring to the local level in their responses. Respondents referred both to representatives of the local people and the local authorities but also directly to the local population. In the open answers the need to involve lay people in this kind of a negotiation process was indicated clearly. One Slovenian respondent noted that participation of local people in negotiations directly is not possible, but continued that *“a majority of the people should first choose the representatives they trust and these must then keep them [local people] informed with updates throughout the process. A good example of this is local community assemblies, which are already provided for under the Local Self-Governance Act but rarely organized in Slovenia.”* The idea was that municipal authorities should not necessarily be the only negotiators in an added value approach. Municipal authorities were criticized as they belong to one of the political parties, and are therefore not trusted by many people in Slovenia.

The national level actors (referring to actors such as government, state, national authorities) were the next most frequently mentioned. Overall, national level actors were mentioned by ten respondents out of 21. The waste management organisation (ARAO) was mentioned by name by 2 Slovenian respondents and experts and research institutions by 3 respondents. NGOs were mentioned by 4 respondents, whilst industry, investors and the waste producers were mentioned three times. Interestingly, mediators were mentioned once as actors who should be involved, although not even raised as issue in the responses from the Czech Republic and Poland. 2 Slovenian respondents out of 21 did not answer this question.

Stakeholders’ Confidence in the Main Actors and Relevant Legislation

Table II presents the results regarding statements included in the questionnaire. Some interesting observations can be drawn although the reader has to take into account the fact that in the Czech Republic the questionnaire was focused on stakeholders’ opinions regarding the siting of a spent nuclear fuel (SNF) repository, whereas in Poland and in Slovenia the questions concerned a LLW/ILW repository. As the

number of respondents (N in Table II) in each country is very low, any general conclusions cannot be drawn. The results do provide tentative indications regarding the differences between stakeholder groups in the three countries.

TABLE II. Opinions of the Czech, Polish and Slovenian stakeholders on various statements (%).

| Statements | Country | N | 1 totally agree | 2 | 3 | 4 | 5 totally disagree |
|---|----------------------|----|-----------------------|----|----|----|--------------------------|
| 1. I am confident that the disposal of spent nuclear fuel as proposed is safe in my country. | Czech Republic WG | 9 | 22 | 33 | 22 | 0 | 22 |
| 1. ... of LILW ... | Poland RG | 10 | 60 | 10 | 10 | 20 | 0 |
| 1. ... of LILW ... | Slovenia SG | 20 | 15 | 15 | 25 | 20 | 25 |
| 2. I have confidence in the main actors involved in nuclear waste policy development in my country. | Czech Republic WG | 8 | 25 | 12 | 12 | 38 | 12 |
| 2. The same as above | Poland RG | 11 | 55 | 18 | 0 | 18 | 9 |
| 2. The same as above | Slovenia SG | 21 | 5 | 24 | 14 | 38 | 19 |
| 3. I have confidence in the legislation regarding nuclear waste management in my country. | Czech Republic WG | 8 | 12 | 25 | 12 | 25 | 25 |
| 3. The same as above | Poland RG | 11 | 55 | 27 | 0 | 9 | 9 |
| 3. The same as above | Slovenia SG | 21 | 10 | 38 | 19 | 14 | 19 |
| 4. I think that content of an added value approach for use in siting a SNF repository should be negotiated with the host community, not laid down in legislation. | Czech Republic WG | 8 | 63 | 12 | 0 | 12 | 12 |
| 4. ... a new LILW ... | Poland RG | 11 | 46 | 27 | 27 | 0 | 0 |
| 4. ... any future repository ... | Slovenia SG | 21 | 62 | 10 | 19 | 5 | 5 |
| 5. Benefits to a host community can make it too dependent on nuclear industry and thus endanger objective evaluation of safety issues at a local level. | Czech Republic WG | 7 | 14 | 29 | 29 | 14 | 14 |
| 5. The same as above | Poland WG | 11 | 0 | 18 | 27 | 18 | 37 |
| 5. The same as above | Slovenia SG | 21 | 24 | 29 | 24 | 0 | 24 |
| 6. I think that use of an added value approach in siting SNF repository causes serious moral problems. | Czech Republic RG | 7 | 14 | 72 | 14 | 0 | 0 |
| 6. ... siting a new LILW ... | Poland WG | 11 | 18 | 0 | 18 | 27 | 37 |
| 6. ... siting a repository ... | Slovenia SG | 20 | 25 | 25 | 20 | 20 | 10 |
| 7. Some types of benefits should be included in any added value approach for siting a SNF repository | Czech Republic WG | 8 | 88 | 0 | 0 | 0 | 12 |
| 7. Some types of benefits should be included in be included in siting a new LILW repository | Poland RG | 10 | 9 | 55 | 18 | 9 | 0 |
| 7. Some types of community benefits should be included in a siting process for a repository. | Slovenia SG | 21 | 33 | 29 | 14 | 10 | 14 |
| 8. The communities hosting the existing LLW repositories in Czech Republic receive annual payments according to the existing legislation. I consider that a similar system of payments could act as an incentive to communities to consider hosting a SNF repository. | Czech Republic WG | 7 | 86 | 0 | 0 | 0 | 14 |
| 8. The community hosting the existing repository at Rozan receives annual payments according to the existing legislation. I consider that a similar system of payments could act as an incentive to communities to consider hosting a new LILW repository. | Poland RG | 11 | 46 | 27 | 9 | 18 | 0 |
| 8. I am happy with the annual payments that will be made to the communities in relation to the LILW repository, according to the existing legislation, and consider that they will be used to add value to the community and enhance its well-being. | Slovenia SG | 19 | 5 | 21 | 26 | 21 | 26 |
| 9. I consider that a similar system of payments could act as an incentive for communities to consider hosting any future repository. | Slovenia SG | 20 | 25 | 15 | 25 | 15 | 20 |

Respondents were asked about their confidence in the main actors involved in nuclear waste policy development in their country. The Czech and Slovenian respondents expressed more distrust of the main actors than did the Polish respondents. In Poland most of the respondents (8 out of 11) expressed confidence whereas in the Czech Republic (4 out of 8) and Slovenia (12 out of 21) more expressed a lack of confidence. The results tend to reflect the composition of the national stakeholder groups. In Poland NGOs did not take part in the work of the Reference Group.

The same tendency can be seen in the reactions to another statement regarding confidence in the legislation governing nuclear waste management. In Poland over 80% of the respondents (9 out of 11) replied that they have confidence, but in the Czech Republic 50% of the respondents (4 out of 8) did not. In Slovenia responses indicate somewhat more confidence in the legislation than in the Czech Republic but less than in Poland as 48% (10 out of 21) of Slovenian respondents lacked confidence.

A further statement examined the respondents' support for a 'locally-negotiated' incentive approach. The statement was as follows: *"I think that content of an added value approach for use in siting a SNF/a new LILW/any future repository should be negotiated with the host community, not laid down in legislation."* In the Czech Republic opinions were less unanimous than in Poland, although the number of those who totally agreed was higher in the Czech Republic (63%, i.e. 5 out of 8) than in Poland (45%, i.e. 5 out of 11). In Poland nobody disagreed with the statement. In Slovenia 62% (13 out of 21) totally agreed and only 5% (1 out of 19) totally disagreed.

As regards the statement that: *"Benefits to a host community can make it too dependent on nuclear industry and thus endanger objective evaluation of safety issues at a local level"*, 52% (11 out of 21) of the respondents in Slovenia agreed. Various opinions regarding possible economic dependency of the host municipality on the nuclear industry were expressed by the respondents from the Czech Working Group. In Poland, a majority, i.e. 55%, (6 out of 11) of the respondents disagreed with the statement. They felt that there was no danger of the host community becoming too dependent and that objective evaluation of safety would not be endangered.

Similar tendencies indicating more reservations among the Czech and Slovenian stakeholders are seen when their responses are compared with the Polish responses to a suggestion that use of an added value approach in siting any type of repository causes serious moral problems. In the Czech Republic 86% (6 out of 7) and in Slovenia 50% (10 out of 20) agreed, whereas in Poland 64% (7 out of 11) of the respondents disagreed.

Respondents were also asked their opinions regarding the existing legally-imposed incentive policy in their country and whether a similar system should be used in the ongoing nuclear waste repository siting process. For example in the Czech Republic the statement was as follows: *"The communities hosting the existing LLW repositories in Czech Republic receive annual payments according to the existing legislation. I consider that a similar system of payments could act as an incentive to communities to consider hosting a SNF repository."* Responses to this were almost unanimous: 86% (6 out of 7) totally agreed with the statement. Only one respondent totally disagreed. In Poland stakeholders' opinions were more varied, although over 70% (8 out of 11) agreed with a similar statement, suggesting there was slightly more hesitation regarding the legally-imposed incentive approach than is the case in the Czech Republic. As in Slovenia payments are also allocated to the neighboring villages, the wording of the statement was slightly different. There, 47% of the respondents disagreed (9 out of 19) and only 26% agreed with the statement. Stakeholders' opinions varied considerably when they were asked to consider whether a similar system of payments (as in the current annual payment) could act as an incentive for communities to consider hosting any future repository.

If compared to the findings regarding the ‘locally-negotiated’ approach (statement no 4) it seems that in the Czech Republic both the ‘locally-negotiated’ and the ‘legally-imposed’ approach are supported by the respondents, although at the same time a high proportion (86%, 6 out of 7) agreed that use of an added value approach in siting a SNF repository causes serious moral problems. In Poland nobody disagreed with the statement.

CONCLUSIONS

The results presented in this paper are the initial outcome of an ongoing process of investigation in the Czech Republic, Poland and Slovenia. They are therefore still tentative at this stage and will be developed during the remaining lifetime of the IPPA project. Further discussions are proposed with the relevant stakeholder groups in order to clarify and explore some of the opinions expressed.

In the meantime, however, it is possible to draw some overall conclusions based on the results of the questionnaires. Although each of the countries involved currently utilises the ‘legally-mandated’ approach to the provision of community benefits, there does appear to be a desire for greater use of a ‘locally-negotiated’ approach and the involvement of local actors in the process. That said, there was also a desire to have any approach based around the principles of fairness and equity, with the use of a legal framework if that was what was necessary to ensure this. The results therefore seem to suggest that the coercive model of Aldrich tends, in real life, to require ‘softening’ by a voluntary market approach in order to make progress. Legal controls offer a framework in which to operate, but within it negotiation seems to be a preferred method, with local conditions providing an additional perspective.

The challenge is to develop a mixed approach that provides flexibility in taking into account the local interests but which at the same time ensures for the local actors long-term guarantees on implementation of the negotiated approach and its benefits. In future, focus in developing new approaches should be on examining what kinds of guarantees and control mechanisms are desired by the local stakeholders. Involvement and empowerment are certainly the starting points. One example of a possible path towards a tailored ‘legally-mandated’ approach is the role of the Czech Working Group as a kind of advisory body in preparing and updating national legislation, i.e. the Atomic Act.⁷ This indicates, as Linnerooth-Bayer [10] has noted, that the hierarchical approach may also be consultative. Furthermore this refers to the use of policy tools based on a semi-hard or even soft mode of power, depending on the degree of influence given to the stakeholders.

Interestingly, when asked about their levels of confidence in the actors likely to be involved in any negotiations on added value measures, many respondents expressed a lack of confidence in local politicians, and were concerned about their impartiality and ability to move beyond political positions. There was a clear suggestion that an essential aspect of local negotiation was that those involved should represent all the community, not just the decision-making authorities. This indicates the importance of reflecting the local cultural plurality, i.e. deserving of respect and representing all views, being a representation of fairness as suggested by Linnerooth-Bayer [10]. Earlier, Gerrard [20] had stated that the culture of a local community is a determinative issue in the success or failure of facility siting.

This issue of confidence and trust in the various actors appeared to be a common thread running through the responses, with only Polish stakeholders expressing any degree of confidence. The mistrust appeared greater in the Czech Republic and Slovenia where siting processes have been in train for some time, as opposed to Poland where one is only just beginning. In the case of Poland the result perhaps also reflects

⁷ This was discussed in one round table of the NEA Forum on Stakeholder Confidence, held at Karlovy Vary in the Czech Republic on 24–26 October 2012.

the fact that NGOs did not join the Reference Group. Clearly if the members of a community do not have confidence in those involved in any process, whether it be legally mandated or open to negotiation, it is likely to be very difficult to convince them that a facility can be safe, irrespective of the use of added value measures. This tends to support the findings in the literature, namely that many believe that bargaining for health and safety is illegitimate, and suggests that development of trust and confidence in the process actors should be seen as just as important as the make-up of any added value benefit package.

REFERENCES

1. P. J. Richardson, *A Review of Benefits Offered to Volunteer Communities for Siting Nuclear Waste Facilities*. M 1996 C, Published by the Swedish National Co-ordinator for Nuclear Waste Disposal (1998).
2. P. Richardson, R. Wylie and S. Haraldsen, Theme 1: Affected communities and sustainable territorial development programme encompassing Radioactive waste Management, *Brief 3: Community Benefits and Support Packages*, Cowam in Practice, Contract Number: FP6/036455, Report D2-5 B (2009). Available at: http://www.cowam.com/IMG/pdf_D2-5_B_-_Community_Support.pdf
3. M. Kojo and P. Richardson, *The role of compensation in nuclear waste facility siting. A literature review and real life examples*. ARGONA Arenas for Risk Governance, Contract Number: FP6-036413, Deliverable D16b (2009). Available at: <http://www.argonaproject.eu/docs/argona-del16b-compensation.pdf>
4. P. J. Richardson, *Community Benefits and Geological Disposal: An International Review*. Galson Sciences Report prepared for the West Cumbria MRWS Partnership, October (2010).
5. A. Bergmans, *International Benchmarking of Community Benefits Related to Facilities for Radioactive Waste Management*, NIROND 2010–01 E, Report commissioned by EDRAM, Ondraf/Niras (2010).
6. Nuclear Energy Agency (NEA), *Partnering for Long-Term Management of Radioactive Waste*. Evolution and current practice in thirteen countries, NEA No 6823, Nuclear Energy Agency Organisation for Economic Co-Operation and Development, Paris (2010).
7. M. Kojo and P. Richardson, *The Added Value Approach – clarifying the key concepts*, Contract Number: 269849, IPPA Deliverable, D4.1 (2012). Available at: http://www.ippaproject.eu/sites/default/files/deliverables/IPPA-Deliverable-4_1-the-added-value-approach%20.pdf
8. M. Kojo, *The Revival of Nuclear Power Policy in Finland*, pp. 161–191, M. KOJO and T. LITMANEN Eds., Palgrave Macmillan, Basingstoke (2009).
9. M. Kojo and P. Richardson, “The Added-Value Approach in Siting Nuclear Waste Facilities,” *RadWaste Solutions*, 19, 1 January-April (2012).
10. J. Linnerooth-Bayer, *Managing Conflict in Facility Siting. An International Comparison*, 36–62, H. S. LESBIREL and D. SHAW, Eds., Edward Elgar, Cheltenham, UK Northampton, MA (2005).
11. D. P. Aldrich, *Site Fights. Divisive Facilities and Civil Society in Japan and the West*. Cornell University Press, Ithaca and London (2008).
12. Nuclear Energy Agency, *Fostering a Durable Relationship Between a Waste Management Facility and its Host Community. Adding Value Through Design and Process*, NEA No. 6176, Nuclear Energy Agency Organisation for Economic Co-Operation and Development, Paris (2007).
13. A. Minhans, V. Ustohalova and B. Kallenbach-Herbert, *Report on the results of the questionnaire about the participatory process for a radioactive waste repository for low and medium level radioactive waste (LILW) in Poland*, IPPA Deliverable 5.1 Contract Number: 269849, Öko-Institut, Germany (2012a). Available at: http://www.ippaproject.eu/sites/default/files/deliverables/IPPA_Deliverable-5-1-1-Oeko-Institut_ReportPoland.pdf
14. A. Minhans, V. Ustohalova and B. Kallenbach-Herbert, *Short report about the results of the*

- questionnaire on the participatory process for a radioactive waste repository for low and intermediate level waste (LILW) in Slovenia*, IPPA Deliverable 5.1, Contract Number: 269849, Öko-Institut, Germany (2012b). Available at:
http://www.ippaproject.eu/sites/default/files/deliverables/IPPA_Deliverable-5-1-2-Oeko-Institut_ReportSlovenia.pdf
15. V. Ustohalova, A. Minhans and B. Kallenbach-Herbert, *Short report about the results of the questionnaire on the participatory process for a radioactive waste repository for high-level waste (HLW) in the Czech Republic*. IPPA Deliverable 5.1 (Contract Number: 269849) Öko-Institut, Germany (2012). Available at:
http://www.ippaproject.eu/sites/default/files/deliverables/IPPA_Deliverable-5-1-3-Oeko-Institut_ReportCzechRepublic.pdf
16. K. E. Portney, “The potential of the theory of compensation for mitigating public opposition to hazardous waste treatment facility siting: some evidence from five Massachusetts communities,” *Policy Studies Journal*, 14, 1 (1985).
17. B. S. Frey, F. Oberholzer-Gee and R. Eichenberger, “The Old Lady Visits Your Backyard: A Tale of Morals and Markets,” *Journal of Political Economy*, 104, 6 (1996).
18. V. Sumberova and H. Vojtechova, *Critical evaluation of transparency and public participation in the process of deep geological repository siting in the Czech Republic* IPPA Deliverable 2.1, Contract Number: 269849 (2011). Available at:
http://www.ippaproject.eu/sites/default/files/deliverables/IPPA-Deliverable-2_1-NRI.pdf
19. IPPA D6.3 (2012) *IPPA Report from the first Workshop in Poland*. Project Deliverable 6.3, IPPA FP7-269849. Available at:
http://www.ippaproject.eu/sites/default/files/deliverables/IPPA_Deliverable-6-3-ReportPoland-WS1.pdf
20. M. B. Gerrard, *Whose Backyard, Whose Risk. Fear and Fairness in Toxic and Nuclear Waste Siting*, The MIT Press, Cambridge, Massachusetts, London, England (1994).

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