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Local opposition and acceptance of a deep geological repository of radioactive waste in the Czech Republic: A frame analysis

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ABSTRACT

The article explores framing of the siting process of a deep geological repository of nuclear waste in the Czech Republic by the municipalities' representatives in the pre-selected localities. Three distinguished frames have been reconstructed. The risk frame, which connects the project with a number of predominantly environmental threats, is counter-balanced by the responsibility frame that uses the 'Not-In-My-Back-Yard' label to delegitimize the local opposition. The third frame then portrays the siting process as a display of general distrust towards political elites and state institutions. It is argued that the distinguished frames stem from a deeper ideological conflict about the nature of democratic governance and the value attributed to environment, further stressing the importance of a siting process' institutional arrangement that goes beyond technocratic solutions.

1. Introduction

The management of radioactive waste is a critical challenge to nuclear industry all-around the world (Ferreira et al., 2009; Greenberg, 2013; Herring, 2010). Although geological disposal has been accepted as a solution of the problem by most countries with nuclear energy as well as scientific community (Lidskog and Andersson, 2002; Rempe, 2007), a single definitive siting decision has been reached so far (Posiva, 2015). The challenge, as Lidskog and Andersson (2002: p. 9) point out, is to create a system of radioactive waste management that is "scientifically, politically and publicly acceptable." Generally, the siting of hazardous waste facilities is not just a technological process, but it is firmly embedded within a socio-cultural context (Futrell, 2003; Graaff, 2016; Kojo et al., 2012; Lidskog, 1993; Litmanen, 1996; Ramana, 2013), and thus can be interpreted from radically different perspectives. As Weinberg (1972) argues, such complex (socio)technological systems give rise to questions that cannot be answered only by mere scientific reasoning since they are deeply rooted in value-judgments. This directly impacts the issue of public acceptance/opposition (Greenberg, 2013; Jenkins-Smith et al., 2011; Kim et al., 2013), articulated especially at the local level (Fan, 2006; Kang and Jang, 2013; Litmanen, 1996), which is considered to be of a crucial importance for implementation of a siting plan in any democratic society (Beierle and Cayford, 2002; Lidskog and Andersson, 2002; Webler et al., 2001).

In contrast to Finland and Sweden, consolidated democracies with well-developed public participation (Hendriks et al., 2015), the Czech Republic represents a case of democratic transition (Dufek and Holzer, 2016; Mansfeldová, 2013), only marginally covered by literature so far (Ďurďovič et al., 2014; Frantál and Malý, 2017), where institutions of local democracy have been gradually negotiated and adopted (Čermák and Stachová, 2010; Vajdová et al., 2006). Notably, these institutions emerge the slowest in issues that are prone to path dependency, among which the energy industry certainly belongs (Sivek et al., 2012; Jirušek et al., 2015; Vlček and Jirušek, 2015; Vlček, 2016). As a legacy of the command, centrally-planned economy, where economic, social and environmental costs of energy conversions were outweighed by political and security-related concerns, the Czech energy industry has been governed predominantly by technicians. A long tradition in uranium mining and advanced technological know-how then contributed to a development of nuclear energy as an additional source to coal-based power generation portfolio. Since technicians have been recruited from energy industry directly into the decision-making bodies, Czech energy policy, and even more so nuclear energy policy, has habitually been decided upon by a closed, technically-oriented community. As a result, there has been only limited public discussion about the energy issues

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whatsoever (Osička and Černoch, 2017).

Although the Czech Republic belongs among countries with the highest support of nuclear energy (Eurobarometer, 2010), the question of the spent nuclear fuel permanent disposal remains to be a contested issue (Čermák et al., 2015; Černoch and Zapletalová, 2015; comp. with CVVM, 2015). Even though the siting process has now been running for more than 20 years, no substantial progress has been achieved. On the contrary, the mobilization against the project have intensified after the list of pre-selected localities[1] was published in 2003, and then again in 2014, after the geological exploration licenses were awarded (see Ďurďovič et al. (2014)). The closing deadline for the identification of the two pre-final destinations set on 2020 is further polarizing the debate between the investor (i.e. the state) and the local communities.

The article uncovers and explores ideological underpinnings of this conflict which have been obstructed largely by "Not-In-My-Backyard" labeling (Gibson, 2005; Schively, 2007; comp. with Badera and Kocoń, 2015) adopted by most of the supporters of the project. More specifically, we are interested in how different interpretations of the project are socially constructed and promoted at the local level (Kousis, 1999; della Porta and Rucht, 2002; della Porta and Piazza, 2007; Kang and Jang, 2013; Usher, 2013). In line with Futrell (2003: p. 360), we argue that the emergence of local opposition or of acceptance cannot be reduced to the activation of latent individually-held attitudes and beliefs, but is rather "an outcome of potentially complex, collective framing processes." These frames can be seen as particular understandings of reality that promote collective action. We aim to explore the framing of the contested issue from the perspective of the mayors of the respective municipalities. This includes frames which either oppose or support the project. The focus on mayors was motivated by their critical position in the decision-making process where they have a mediating position between local communities and authorized state institutions (see Botetzagias and Karamichas (2009), Özen (2009)). Moreover, they have very close and informal ties to local communities, often represent the "voice of the community", and are frequently directly involved in local opposition (and potentially also acceptance) activities.

In this context, we deal with the following question: *How is the issue of deep geological repository of radioactive waste (henceforth the issue or the project) framed from the perspective of mayors in pre-selected localities?* Since data was collected during 2014, the identified frames should be seen as snapshots of the prevailing discursive structuration of the issue.

2. Theory

Most of the literature on local opposition distances itself from the "Not-In-My-Back-Yard" (NIMBY) concept (see e.g. Burningham et al., 2006; Devine-Wright, 2005; Wolsink, 2006). The NIMBY explanation of local opposition is based on a "paradox" that while a certain project or technology is in principle supported by the majority of the population, its proposed realization is often strongly opposed by local residents (Van Der Horst, 2007). This "social gap" is explained as a result of individually rational actions where individual costs substantially overweight individual benefits which leads to a collective suboptimal outcome (Bell et al., 2005; Wolsink, 2000). Besides the NIMBY explanation there is a number of approaches that take into account a wide variety of factors that extend beyond the rationalist perspective (for review see Devine-Wright (2007)). These "post-NIMBY" approaches explain local opposition as a result of a complex interplay of various context-dependent factors (Devine-Wright, 2007; Wolsink, 2000) and tend to stress non-individual levels of explanation (Burningham et al., 2006; Futrell, 2003; Tindall, 2002).

This includes discursive construction of a contested issue which illuminates how the understanding and experiencing of environmental issues is being formed (see della Porta and Piazza (2007), Futrell (2003), Hajer (2005), Schlosberg (2013), Taylor (2000), Usher (2013)). Fan (2006) documents how the local opposition to nuclear waste repository (NWR) at Orchid Islands has been reinforced through different framings of environmental justice. Litmanen (1996: pp. 529, 533) argues that disputes over NWR in Finland were fueled by struggles over "scientific-technical, economic, and political definitions" of the radioactive waste which are "linked with different value and belief systems." Similarly, Kang and Jang (2013) in their study of the local opposition to NWR at Kyungju, South Korea, show how different framing strategies are used and embedded in a wider political discourse and value systems of stakeholders. Futrell (2003) explores frame building processes of the local opposition towards chemical-weapons disposal program and shows that it has been established as a negotiated and reasoned reaction to information uncertainty, not as a consequence of selfish or irrational claims. We build on this research (also see della Porta and Piazza (2007), Kousis (1999), Rucht (2002), Usher (2013)) by identifying the prevailing framings of the issue.

The research is meta-theoretically grounded in the constructivist tradition (see Berger and Luckmann (1991), Goffman (1974)) which assumes that reality is created, maintained and transformed chiefly through the complex processes of social construction. The social construction of meanings can be reconstructed by using frame analysis. According to Snow and Benford (1992: p. 137), frames can be understood as "interpretive schemata" which are used to "simplify and condense the 'world out there'." Frame analysis thus provides us with an understanding of meaning constructions through which "people come to embrace a particular version of reality" (Futrell, 2003: p. 364). This understanding is determined by the content of the given frame and by what is left out or suppressed. Entman (2004: p. 5) thus understands framing as "selecting and highlighting some facets of events or issues and making connections among them so as to promote a particular interpretation, evaluation, and/or solution." In this view, framing is understood as an intentional and strategic process in which a plurality of contesting actors promotes particular interpretations rather than others (Oliver and Johnston, 2000: p. 8; Van Gorp, 2007).

In this context, it is common to recognize different effects conveyed by framing processes as "frame functions" (Benford and Snow, 2000; Entman, 1993). Entman (1993) distinguishes four frame functions. First, frames define problems: they determine what the causal agent is doing and what the costs and benefits (usually measured in terms of common cultural values) of these actions are. Second, frames diagnose causes, determining the origins of a given problem and designating the potential culprit. It is typical to portray the antagonists as specific people or social groups rather than impersonal forces (see Polletta and Ho (2006)). The third function is moral judgement of the causal agents; this then creates the possibility to differentiate between "good" (us) and "bad" (the others). The last function of frames is to suggest remedies which offer a solution to the given problem. They legitimize and predict the likely effect of these solutions and at the same time delegitimize the measures of other groups (Entman, 1993). Suggesting a specific measure thus limits the number of "reasonable" solutions to a problem (Benford and Snow, 2000). In our research, the functions of moral evaluation and problem solution are kept separate while the functions of diagnosing causes and defining problems are merged together.

3. Methodology

Since our research aims to uncover the shared interpretative schemes through which actors embrace particular understandings of reality, we build on frame analysis methodology (see Lindekilde (2014), Ocelík and Osička (2014)). This approach assumes that meaning of words and other lexical units is dependent on their use (Wittgenstein,

[1] Seven locations have been selected as potential repository sites: Čertovka, Březový potok, Magdaléna, Čihadlo, Hrádek, Horka and Kraví Hora. For the map, see RAWRA (2015).

1958). In line with our previous work (Ocelík and Osička, 2014), we understand frames as ideational devices that emphasize or marginalize certain parts of discursive space.

The frames were reconstructed through the following coding procedure. First, we – based on theoretical reflection as well as repeated readings and re-coding of data – identified a set of codes which were then organized and used as a coding scheme (see Appendix B). The coding logic is instrumental, i.e. the coding does not focus on the description and quantitative processing of the text data, but it identifies more abstract concepts that attempt to capture (also tacit) meanings of the speaker's utterances (Roberts, 2000). Each code then labels a segment of text that carries a specific meaning (coding unit) and interprets it. Second, two independent coders were trained to use the coding scheme with required inter-rater reliability of Krippendorff's alpha >0.7 (Krippendorff, 2004) and intra-rater reliability level correlation coefficient $r>0.7$. These levels were achieved after 7 training sessions that were carried out during two months. Third, the coders coded the entire data corpus. The data was reduced and sorted out into code observations. Fourth, the relations between codes are identified which lead us to the reconstruction of a frame. According to the character of identified relations we further develop the meaning of the codes and specify their role in the construction of a given frame (Ocelík and Osička, 2014). Lastly, we show how the issue is framed through the definition, evaluation and solution functions. The affiliation of the respondent to the frame(s) is given by the number of observed codes that belong to particular frame(s). Thus, whereas each code belongs just to one frame,[2] each respondent can be affiliated to one or more frames. The frame is a unit of analysis; the interview responses are then units of observation.

4. Data and methods

The data collection was done using semi-standardized interviews which are commonly used for reconstruction of subjective understandings and "personal theories" of the interviewees on a particular issue (Seidman, 2013). The first part of the interview is common to all interviewees and consists of a fixed set of general and open questions aimed at personal reflection of the issue. In the second part, supplemental and probe questions are asked in order to explore interesting or unclear parts of the interview (for interview guide see Appendix G). The selection of the interviewees was based on preliminary research and expert consultations. In total, 32 interviews were conducted between February and September 2014 with all mayors who are actively involved in the issue.[3] Informed consent was received at the beginning of each interview (see Appendix F). Each interview was transcribed and imported to via R software RQDA package (Huang, 2014). The whole corpus consists of 284 standard pages; the length of an average interview is app. 8.9 standard pages. Two independent coders then coded the corpus with inter-rater reliability (Krippendorff's alfa) of 0.81 and intra-rater reliability (test-retest correlation) of 0.79, resp. 0.80 (see Appendix E). In total, 36 codes were used with 411 observations where the coders agreed (see Appendix C).

The research has not been carried out with a particular social objective, nevertheless, we do not claim a "neutral" or an "objective" position. We gather, process and interpret the data in accordance with the (meta)theoretical assumptions and procedures described in the previous Section.

[2] The two exceptions are codes *community pressure* and *waste import* that do not belong to any of the frames. The *community pressure* is consistently used by actors who otherwise have very different views of the issue. Thus it is not included in neither of the identified frames. The waste import is – by different respondents – seen either as a potential benefit, or as a potential cost.

[3] Two interviews were conducted with mayors of municipalities which were not selected as sites for a deep geological repository; however, they were actively involved in the discussion about the depository. All the other interviews were conducted in person.

5. Results

In this Section, we reconstruct and interpret the frames through which the involved actors understand the issue of deep geological repository. The frame is understood as an emerging pattern of relations among a particular set of codes that establishes a relatively consistent interpretation of the issue. This Section presents three reconstructed frames, i.e. responsibility, risk, and dysfunctional state frames.

5.1. *The Responsibility Frame:* We all want light, we all wanna use power, so we gotta find a way

The *responsibility frame*, used mainly by supporters, defines the issue through a moral and legal obligation that arises from the mere existence of nuclear waste and ultimately from the fact that we – as a society – consume electric energy produced in nuclear power plants (*cost acknowledgment*; see Appendices A and B). The existence of this burden is then the starting point which leads to a number of "inevitable" conclusions. The repository is seen as the only economically and technologically viable way to deal with the issue safely. The project is furthermore linked to the development of the energy industry and of the economy as such. Since there are no realistic alternatives, what might be questioned are the parameters of the project (such as its location or its institutional and technological design), but not the project itself. This combination of urgency and inevitability makes the project the only moral option.

> ... [T]his civilization always does some wrongs to nature and so on and you always have to find this middle ground so that it doesn't damage that much and that there're also the results. We all want light, we all wanna use power, so we gotta find a way because coal is running out, so nuclear is gonna be the only option which could provide electricity, so we have to figure out where to put that waste, sensibly, where to put it and under what circumstances ... (022: 168–171; *cost acknowledgment*)[4]

The actions of local opposition thus only transfer this responsibility and the burden of the project to the following generations. Local opposition is then evaluated as irresponsible, irrational, emotional, ignorant or manipulative (*irresponsible citizen*; see Appendices A and B). In other words, the opposition towards the project is seen as motivated by narrow self-interest, incomplete knowledge, misinformation and/or emotional ties to the locality (see Schively (2007)). This is consistent with the findings of Özen (2009: p. 418) who identified a contra-frame in which protesters are portrayed as "'traitors' who would block economic development..." The project is rendered here as a public, nation-wide, interest that contrasts with particular, selfish interests of the opponents. The responsibility frame here utilizes the NIMBY concept (*proximity*; see Appendices A and B) as expert knowledge that further delegitimizes local opposition as a detrimental social institution. This is supported by a common anti-progress and anti-scientific labeling of local opposition (see e.g. della Porta and Piazza, 2007; Özen, 2009; Schively, 2007). This irresponsibility of the opponents is further emphasized and documented by their use of "non-standard" extra-institutional political methods such as protest marches and demonstrations that disrupt established decision-making processes and the principles of representation.

> Nowadays, people chain themselves to a drill, the state and the others should put their heads together and they should all treat each other well and it shouldn't be that one will push the other around, this isn't what democracy is about. (003: 103–105; *irresponsible citizen*)

[4] A code citation includes respondent's ID, location of the citation in an interview transcript specified using line numbers, and name of the code (see Appendices B and H for more information).

In this context, local opposition is conceived as an anti-modernist social force that threatens to destabilize not only economic prosperity but also the democratic foundations of society. Seen as binary opposites, local opposition is a mirror image of the supporters of the project who are seen as responsible, rational, progressive, and well-informed people able to understand the project in a wider context. This is in line with the elite democracy approach (Schumpeter, 2010) where social and political elites elected in free elections enjoy a high degree of autonomy in relation to the voters and to civil society. Expert knowledge and powerful bureaucratic apparatus enable and entitle the elites to deal with complex problems faced by modern societies. The people then should "rule" just in the sense that they "have the opportunity of accepting or refusing the men who are to rule them" (Schumpeter, 2010: p. 285). Thus, political participation that goes beyond active and passive right to vote lacks legitimacy in this view.

> ... [I]f I was in the position of the state, I would do everything that the law allows me to do, you know. ... I would normally carry out all those surveys without asking anyone. I would only inform them. And then I would take that data from all this, 'cause a lot of questions and some of these ... like ... myths and things which can be attacked from all sides and for what, they are here because we simply don't have the information. (011: 107–111; *duty*)

Providing this understanding of democratic governance, the responsibility frame does not leave much room for questions of procedural justice. It assumes that the decision-making process should take place within the institutional framework described above. In other words, "if everything goes according to the laws," no discussion about decision-making is needed (*duty*; see Appendices A and B). Thus the legality of the decision is equated with its legitimacy. On the other hand, the distributive dimension of justice is much more articulated and emphasized. It is argued that the resulting distribution of costs and benefits of the project for the locality should not be negative. The financial compensations are considered to be the main instrument through which a distributively just arrangement can be achieved as well as an opportunity for local development.

> We would definitely not be opposed to financial compensations. If a location is set which will be surveyed, we're not going to be heroes that we don't want that money. We would be pretty dumb to do that. (008: 195–196; *compensation payment*)

This interpretation is underlined by utilitarian calculations which make it possible to quantify and compare eventual costs and benefits of different kinds, such as new employment opportunities, environmental harm, decreased property value, or community costs, as well as an anthropocentric approach to nature which attributes intrinsic value only to people and their interests (see McShane (2009)). The proposed solution is then based on promoting higher awareness about the repository project among the local communities, adequate financial compensations, and a decisive stance of the state and Radioactive Waste Repository Authority (RAWRA).

5.2. *The Risk Frame:* Here you have a virgin landscape, that's what we are here for

The *risk frame*, used mainly by opponents, is constructed through a variety of risks associated with the repository project. The security-related appeals are then based both on utilitarian, cost-benefit arguments as well as on value-based arguments. The former arguments refer mainly to decreased property value due to the stigmatization of the locality and construction-related impacts such as increased traffic, noise, air pollution and others (see Appendices A and B). The framing based on the protection of the environment or quality of life has been widely documented (e.g. della Porta and Andretta, 2002; Kaufman and Smith, 1999; Özen, 2009). Environmental harms, most importantly water loss, are mentioned both in utilitarian and value-based fashion. In other words, it is not only the well-being of the local community that is at stake, but also the intrinsic value of nature itself. The most important value-based argument then relates to place attachment (see Devine-Wright, 2009; for the Czech Republic see Frantál (2016), Svobodová et al. (2011), Svobodová and Hájek (2016)), described by Devine-Wright (2007: p. 7) as "positive emotional bonds between people and valued environments."

> Well, the people were counting on the fact that when we're poor, at least we have clean air and beautiful countryside here, clean water. And now there's the risk that the people'll lose the beautiful countryside, the clean air, and they are even threating that clean water. In this sense, I would say, it's a kind of patriotism, it's deeply rooted in the people here ... (006: 273–275; *water loss*)
>
> —
>
> ... [H]ere you have a virgin landscape, that's what we are here for, and this is one of the last places like it. And we, instead of protecting it, we stick this monstrosity here. (024: 242–243; *place attachment*)

These arguments are further supported by the knowledge of "independent" experts that supports the critical claims of the opponents. The risk frame thus rejects the dichotomy where superior expert knowledge is at the disposal of the investor, i.e. the state and political elites, whereas non-specialist ("lay") or incomplete knowledge is attributed to the opponents and local public in general (see Boswell (2009); comp. with Litmanen, 1996). On the other hand, state officials and supporters are portrayed as unprepared, disinterested and incompetent. Della Porta and Piazza (2007: p. 880) found a similar evaluation where "...'good' politics is presented as coming from bellow ... and based on local knowledge rather than the 'bureaucratic expertise' of representative institutions." This schematization is further elaborated on in the dysfunctional state frame (see next subsection).

> I'm convinced that it's business, it's about money. I don't think it has to be stored. We had a security inspector from Dukovany [a Czech nuclear power plant] here, we listen to the opinions of experts; a geologist comes here and tells us his opinion. This whole thing should be approached in a totally different way. (005: 82–84; *useless repository*)

Rather surprisingly, the frame does not provide a complex ideological alternative such as sustainable development aimed at decarbonized economy and decentralized energy industry (see della Porta and Piazza (2007), Rootes (1999), Usher (2013)). This might be partly due to the fact that nation-level, professional, ideologically embedded environmental organizations such as DUHA Movement (2016) or Calla (2010) are involved mainly in terms of support, whereas protest activities are carried out mostly by non-professional, grass-root organizations without explicit ideological or political agenda (comp. with Rootes, 2009; for classification see della Porta and Andretta (2002)). As in the case of the responsibility frame, the "other camp" of local acceptance is constructed through binary oppositions. The supporters are considered to be selfish, profit-seeking, irresponsible individuals who disregard concerns and interests of the local community (see Čapek (1993)). The opposition is then legitimized typically via referendums, petitions or extra-institutional collective actions such as protest marches or demonstrations. In contrast to the responsibility frame, political action that exceeds election participation is seen as a sign of mature civil society and as an integral part of democratic governance. This is in line with the participatory democracy approach that combines aspects of representative and direct democracy such as public assemblies and referendums (Sánchéz-Pagés and Aragonés, 2009). In contrast with the elite model, the concept of citizenship rejects the image of "the man in the street" – an uninformed and incompetent individual – and constantly stresses the ideal of self-determination (The Port Huron Statement cited in Floridia (2013)).

Since the above-mentioned risks cannot be completely avoided, the

proposed solution is that the project should be cancelled (*determination*; see Appendices A and B) or at least postponed until a safer and more efficient technological solution is available (*useless repository*; see Appendices A and B). The responsibility to preserve the localities for further generations then makes the opposition the only moral choice. This argument marginalizes the role of financial compensations which cannot outweigh the harms such as the stigmatization of the locality and the environmental damage.

5.3. The Dysfunctional State Frame: In that process, we're the least important

The *dysfunctional state frame* is built around a group of codes which are critical towards the role of the state, or rather its institutions and political elites which are involved in the siting process (*state mistrust*; see Appendices A and B). As with the previous frame, the framing based on distrust of the political system is well-supported as well (della Porta and Andretta, 2002; della Porta and Piazza, 2007; Fan, 2006; Kaufman and Smith, 1999; Özen, 2009; Rootes, 1999). In contrast to the previous two frames, the significant Other is represented by the state, not by an antagonistic opinion group. The frame draws a distinction between the disempowered local communities on the one hand and the powerful state apparatus and political elites on the other. The following quote illustrates this by describing the peripheral position of municipalities and the unilateral actions taken by the state.

> I would say that the state and RAWRA approach it in such a way that we as a municipality are the lowest on the totem pole in what they're doing, at least as I see it. That they absolutely don't take into account any of our decisions or something that they promised and never keep their word. … So in the end, they still do what they want, if you want to say that. (001: 22–26; *overriding state*)

The political elites are, again in binary oppositions, defined as egoistic, distrustful, corrupt, and detached from the people. As Botetzagias and Karamichas (2009: p. 941) state: "… citizens come to assume that they are dragged into an 'unfair' deal, or that they are being 'victimized', presumably due either to their community characteristics or to the lack of powerful allies who could shield them against the undesirable development." The state institutions are then seen as arenas controlled by political and economic interest groups and as barriers that impede local communities and prevent participation in civil society (see Özen (2009)). This is further amplified by the instability of the political environment which goes hand in hand with personal discontinuities and sudden policy changes.

> Well that's the difference between them developed countries and here, that there you've got the law and there's no way around it. Here, they come up with a law and in a year they totally change it, you see. So people have no certainty that something like this will be in that law that … if the government suddenly changes, if there's a new government which'll have different priorities and it'll say to hell with the municipalities, and we just have to put it somewhere, period. (022: 108–111; *state mistrust*)

Elements of conspiracy theories, for example that the repository is a project covertly orchestrated by a "concrete lobby", are present as well. In contrast to the responsibility frame, the dysfunctional state frame thus depicts the failure of representative governance and harshly criticizes the actions of elites (see Rootes (1999)). This brings us back to the distinction between elite and participatory models of democracy (see Fan (2006)). Therefore, as della Porta and Piazza (2007: p. 877) put it: "It is the very conception of democracy that is put under scrutiny. The demand for democracy is the demand for another type of democracy – more participatory and 'from below'." This framing resonates with a broader discourse which has been labeled as a "crisis of governance" (see e.g. Havlík and Kopeček, 2008; comp. with della Porta and Andretta, 2002). Likewise, Linek (2010) shows that trust in politics and political parties is gradually decreasing. The survey on attitudes of local communities towards the repository issue conducted in 2012 and 2014 showed similar results (Ďurďovič et al., 2014). In 2012, the state institutions were perceived as institutions that limit or even oppose the engagement of local communities, whereas municipalities were seen as organizations that promote this engagement (Ďurďovič et al., 2014). This is consistent with the findings of Kunštát (2015) where trust towards local representatives is higher than trust towards any other institution. The "Nagygate" scandal which led to the resignation of the Czech Prime Minister Petr Nečas in 2013 then linked issues of clientelism and corruption with the core of the political system (see Kupka and Mochťák (2015)). In this context, actions of RAWRA are often described as manipulative and corrupting.

> … [T]hey organize or arrange a trip to Sweden, pay for it with the RAWRA taxpayer's money, of course, or whose money that is really … and they take people, who never got further than ==, that's here, 20 clicks away … so that these so-called village nuclear experts can conclude that it looks nice. And now consider that they got lunch there, they got to go on a trip to a place where they'd never get otherwise, and when they come back, people'll ask them: What do you think, what's it gonna look like? (018: 64–68; *public corruption*)

RAWRA is described as a "buffer" which shields local people from the real decision-maker, the state, and as a "puppet" that is connected with questionable practices. The demands of the local communities, which are in an asymmetrical position, then "hit the wall of legality." The dysfunctional state frame thus emphasizes procedural justice over the questions of cost-benefit distribution. This general lack of trust is connected not only with state institutions and the project investor (RAWRA), but also with the Working Group that was established as a forum for stakeholder negotiations in 2010 (RAWRA, 2010). Interestingly, this applies both to the opponents and the supporters of the project. Whereas the supporters are dissatisfied with the unproductiveness and indecisiveness of the negotiation process, opponents mainly criticize the insufficient powers of the Working Group. The Working Group thus provides only a *pro forma* engagement of the representatives of localities and civil society and is seen as a mere façade used to legitimize state actions.

> It [the Working Group] was created so the mayors or those municipalities had a chance, so that we'd think that we can decide about it, but it's not like that … And we have no chance to influence anything there. (016: 204–205; *vain negotiation*)

This growing mistrust towards and discontent with the existing institutional arrangements then deepens the frustration of the opposition actors and pushes them towards extra-institutional forms of action (della Porta and Rucht, 2002; Özen, 2009; for overview see Hooghe and Marien (2013)). The proposed solution is based on strengthening the participation in the whole process of negotiating and selecting the site for the project; especially through the inclusion of veto power according to the Swedish model (see Andersson et al. (2006)). The legitimacy of the decision-making process is not derived from the central political authority of the state, but from the political will of the local community which is going to be affected by the project. More generally, the reconciliation of the relations between the local communities and the investor (i.e. RAWRA and the state) and subsequent building of trust is being mentioned.

> In the entire process, we are the last to have a say. This cannot be true, can it? To be the last when that project directly concerns us? They are going to outvote us. So the will of the state or of RAWRA – there's no will to listen on their part … In that process, we're the least important, we're the ones to be affected by it, and we'll be the last to have a say in it, we'll have a referendum here, and the people

Table 1
Reconstructed frames: summary. *Source*: Authors[a].

	Functions		
	Definition	Evaluation	Solution
Frame I	By consuming electricity we produce a burden of spent nuclear fuel The repository is the only feasible solution	We have a moral obligation to deal with this burden The opposition is irresponsible, selfish, and emotional The opposition just passes the responsibility to next generations	The state should take responsibility, make a decision and compensate the selected locality
Frame II	The siting process is linked with a number of risks There are alternative solutions of the problem	We have a moral obligation to protect the localities for next generations The local communities are in a disadvantaged position	The siting process must be stopped or at least slowed down
Frame III	The state is not able to deal with the problem competently and legitimately	Localities are not effectively engaged in the siting process The Working Group is just a facade that legitimize the actions of the state There is a lack of trust among stakeholders	The participation of local communities and civil society should be strengthened

[a] Frames I, II, III correspond to the responsibility frame, the risk frame, and the dysfunctional state frame.

will express their opinions. And? This is a joke! (005: 140–148; *participation*)

6. Conclusions and policy implications

The research objective was to reconstruct how the repository issue is framed from the perspective of the mayors in the pre-selected localities. It has been shown that three distinctive frames are used (for summary, see Table 1). These three frames are not mutually exclusive which means that actors can be embedded in more than one of these frame. The embeddedness of the actors in the identified frames is given by the number of codes from the respective frames that actors use. The codes listed under the risk frame appear to be the most frequent (see Appendix C). Overall, however, the three frames tend to be represented evenly, with each frame constituting approximately one third of the codes observed (see Table 2). The issue is seen as a complex one and the mayors typically acknowledge the arguments related to all three frames (see Appendix A).

The supplemental analysis based on chi-square tests of independence showed that the main difference is, rather unsurprisingly, between mayors who do not oppose the project and those who oppose it (for details see Appendix D). The "non-opponents" are more likely affiliated with the responsibility frame, whereas the opponents are more likely affiliated with the risk and dysfunctional state frames. According to our interpretation, the responsibility and risk frames are to a large extent based on contradictory notions about the value of the environment and about the nature of democratic governance. In this manner, the frames are structured along deeper ideological distinctions (comp. with Fan, 2006; Kang and Jang, 2013; Litmanen, 1996; Sovacool and Dworking, 2015). These distinctions then affect how likely is a given actor to accept or to reject a given frame.

In the responsibility frame, the repository project is seen as a "problem-solving" activity (Cox, 1981). A clearly defined politico-legal framework is taken for granted, in which an essentially technological problem must be solved efficiently and safely. This framework, which constitutes the procedural basis for decision-making, is given by the elite democracy model which emphasizes expert knowledge and the majoritarian principle. Since nuclear energy technology is considered one of the most complex expert systems (Giddens, 1991), the decisions about the project should be, at the substantial level, based, if possible, solely on expert knowledge. In the case of the repository, expert knowledge is held by the investor, (i.e. RAWRA) and specialized state agencies (such as the State Office for Nuclear Safety and the State Mining Administration). The status of nuclear energy is further strengthened by its comparatively high public support (see CVVM (2015)). The responsibility here is a consumer's responsibility who ought to pay for his consumption. Thus the public good is viewed in a utilitarian manner as a policy or a project that *on average* benefits the entire society. On the other hand, the risk frame is based on the possibility of an *alternative solution* (della Porta and Piazza, 2007); it challenges the status quo. The politico-legal framework is questioned, the contested issue is not seen technically as a problem to be solved, but rather in ethical terms. The key question is: How is it possible to address the issue without unnecessary damage to the environment and while respecting the concerns of local communities? Here, the responsibility is the responsibility of an (engaged) citizen who ought to question authority. Nuclear energy is then seen as a Beckian "inconceivable risk" which cannot be adequately evaluated and controlled (see Beck (1992)) rather than as a trusted "expert system" (see Botetzagias and Karamichas (2009)). These concerns are reinforced by the unprecedented time horizon of the project and by the potentially disastrous consequences, which additionally increase the sense of risk (Slovic et al., 1979). The latter effect is further strengthened by impacts of nuclear accidents, such as Chernobyl and Fukushima Daiichi, that significantly decrease public acceptance (Eiser et al., 1989; Siegrist and Visschers, 2013), especially among communities that live in proximity of nuclear facilities (Huang et al., 2013).

The inability of the current institutional framework to accommodate this conflict is captured by the dysfunctional state frame. The frame emphasizes institutional deficiencies, mainly in the context of the inextricable connection between the political regime and abusive practices such as clientelism and corruption (Kupka and Mochťák, 2015). This fundamental distrust then scales down to the level of individual projects which are perceived as part of the "big game" of politico-economic interest groups. The dysfunctionality of participatory mechanisms such as the Working Group further deepens the frustration of local communities' representatives and strengthens their detachment from the institutional framework. This dispute over the engagement of local communities is embedded within the spirited debate about the role of civil society and citizenship that has been going

Table 2
Frame affiliations according to code observations. *Source*: Authors.

Frame	Code observations	Code observations (%)
Responsibility	137	33.33
Risk	158	38.44
Dysfunctional state	116	28.22
Total	411	99.99

on since the 1990s, a debate that reflects the distinction between the elite and participatory models of democracy mentioned above (see Navrátil (2013), Pontuso (2002)). The gradual strengthening of the non-electoral political participation in the Czech Republic confronts the closed opportunity structure of the political system (Mička et al., 2015; for comparative perspective see Vráblíková, 2014) also at the local level (see Navrátil and Císař (2013)). The presence of the dysfunctional state frame then clearly points to the importance of an institutional arrangement of such projects (comp. with Čermák et al., 2015; Badera and Kocoń, 2014) as well as to the inadequateness of the technocratic problem-solving approach.

Based on this, we do not expect that standard institutions and practices – such as information campaigns, propagation of scientific and technocratic expertise, public hearings, or moral appeals – are going to be efficient in consensus building (see Kang and Jang (2013)). The decision-making process should be rather more attentive to "contestation of discourses in the public sphere" (Dryzek, 2000: p. 162). To paraphrase Hajer (2005), the point is to show how frames construct a particular problem. This includes explication of normative positions and resulting recognition that all stakeholders act upon certain ideological orientations, not only on "purely technical" or "expert" knowledge. Thus, the decision-making should move away from political or technocratic authority-based policy implementation to more participative and deliberative procedures where "policy is constructed through exchanges of ideas and values among participants" (Kang and Jang, 2013: p. 57). In general, it is argued that institutional trust, a key condition of effective policy making, is rooted in a complex web of interpersonal interactions that generate social capital and thus facilitate civic engagement and political participation (Putnam, 1993; Almond and Verba, 1963). In this context, institutions such as civic panels or community assemblies providing informed and dialogue-based platforms that supplement the work of local authorities on important long-term issues (see Ďurďovič (2016)) might be considered for implementation. This should go hand-in-hand with empowering local communities through shared decision-making. Since democracy can be seen as "both an open-ended project and an essentially contested concept" (Dryzek, 2000: p. 160), there is a room – especially in the mentioned context of the "crisis of governance" – for such inclusive institutional innovation and experimentation. The concept of participative decision-making as sketched above seems to be a reasonable starting point for such an endeavor.

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Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.enpol.2017.03.025.

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