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AVADA

JOURNAL OF SECURITY AND SUSTAINABILITY ISSUES
ISSN 2029-7017 print/ISSN 2029-7025 online
2016 September Volume 6 Number 1
http://dx.doi.org/10.9770/jssi.2016.6.1(2)

TOWARDS SUSTAINABLE DEVELOPMENT: TACKLING RELATIONS BETWEEN ENERGY SECURITY AND SOCIAL COHESION

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Received 23 February 2016; accepted 27 May 2016

Abstract. The shifted research gaze in energy security studies leads to formulation of new question – is it possible to talk not only about objective indicators of material deprivation and poverty caused by the lack of energy security, but take into account indicators from socio-cultural dimension? By analyzing solely objective processes and considering economic and political reasons as well as consequences of energy security do we not forget to analyze less visible but not less important aspects of norms, values and power relations, for example how energy security is related to social exclusion? Social exclusion in the paper is defined as process in which the minimum quality of life is not available for the individual or conditions that increase insecurity, shame, psychological discomfort, lack of confidence, lack of self respect and dignity. The ambition of this article is to contribute to consistency of theoretical discussion by tackling energy security to social exclusion as well as by setting methodological guidelines for the assesment of energy security impact on social exclusion. Based on various theories and research models the methodological framework is being laid down in the paper which would encompass such questions as - how public interest is recognized and represented in energy security policy; how (and if at all) the interest of smaller social groups (environmentalists, pensioners, poor, etc.) is defined and represented; whether energy security policy acknowledges interest of poor, deprived and disenfranchised individuals or addresses solely to active and powerful (from consumption point of view) individuals; how existing energy security policy treats and fosters to feel vulnerable groups?

Keywords: energy security, social exclusion, social justice, public interest, social groups, methodology.

Reference to this paper should be made as follows: Genys, D. 2016. Towards sustainable development: tackling relations between energy security and social cohesion, Journal of Security and Sustainability Issues 6(1): 27–36. DOI: http://dx.doi.org/10.9770/jssi.2016.6.1(2)

JEL Classification: Q4**,** 0O

1. Introduction

In probably the most popular definition of energy security from early ninenties the goal of energy security is defined as to ensure reliable supply of energy resources at affordable prices without compromising the most important national values and objectives (Yergin 1988: 111). More recent concept of energy security emphasizes the ability of the system to resist possible interference arising due to technologic, natural, economic, socio-political and geo-political reasons (Augutis *et al.* 2013). In the latest academic literature on energy security we can see the shift of the focus from reliability of supply towards sustainable development (Cherp, Jewel 2011; Sovacool *et al.* 2014; Ang *et al.* 2015; Vosylius *et al.* 2013; Baublys *et al.* 2015). Energy security being closely related to economy with no doubt has a huge impact on society but there is still lack of evidence on the effect of energy security upon society.

One thing is to talk about the projects that improve energy security from strategic point of view which usefulness is defined by experts opinion and politicians decisions, or to talk about its cost which is usually related to market prices, but another is to investigate the impact of the specific project in a broader social context, i.e., whether it would be useful and atractive for different social groups? Based on previous research (Augutis *et al.* 2014, 2015; Leonavicius, Genys 2014) we can draw an assumption, that even though the concrete project is strategicaly usefull and economicaly beneficial it might not necessarily contribute to the increase of energy security if it has diverse and unequal impact on different groups. Democratic societies are diverse societies and different social groups have different understanding of what security mean for them. Thus the implementation of energy security policy is related both with economic efficiency as well as inefficiency and financial burden upon society.

Sociologists analyzing social exclusion accurately notice that material deprivation, which is ussually defined as inability to satisfy essential goods (such as decent living conditions – heat, cold/hot water, housing, etc – as well as decent level of quality of life), impoverishes life of the people. However, material deprivation shouldn‘t be considered as the only indicator of misery. It is important to understand that misery comes from experience arising from social structures which foster oppression and pain (Bourdieu 1999: 4). The notion of social exclusion encourages interpreting exclusion not only as a consequence of material deprivation, but as a result of multiple social circumstances.

Having in mind notions from risk society (Leonavičius, Genys 2011), governmentality (Leonavičius 2013:19 in Augutis 2013) and social cohesion (Genys, Krikštolaitis 2015) theories point of view we could move forward and start analyzing not only the perceptions or consequences of energy security, but also research how it affects social relations, behavior and even feelings of various social groups. The shifted research gaze leads to formulation of new question – is it possible to talk not only about objective indicators of material deprivation and poverty (as a result of insufficient energy security), but link it to sociocultural dimension in energy security? The aim of this article is to contribute to consistency of theoretical discussion offering new angle by linking energy security to social exclusion as well as to set methodological guidelines for the assesment of energy security impact on social exclusion.

The article consists of three main parts. After the introductory remarks, the first part presents the interrelations between energy security and public interest, energy economy and social exclusion, as well as discusses the existing tensions in Lithuania. The second continues conceptual discussion by linking energy security to social exclusion and elaborating conceptual dimensions. The third part offers concrete theoretical framework and presents operationalization of empirical variables. Lastly, the article ends with concluding remarks.

2. Energy security between objective reality and subjective perception

The implementation of energy policy is based on the rationality of society and its trust in public interest (Dean 2010). Meanwhile discourse studies suggest that some groups of society lack information about energy security issues and this hinders the implementation of smooth policy (Genys 2014). Exploring the distinction between strategic planning and public risk perception it is useful to take into account the contrast between objective and subjective risk origin. According to risk society theory (Beck 1992, 1998; Elliott 2002) they are two sides of the same coin, where dialectics exists in between and this is where the state of risk society emerge. The peculiarities of objective and subjective risk origin and it‘s dialectics have been elaborated elsewhere (Leonavicius, Genys 2012). In this particular context is important to notice that strategic planning usually is based on objective processes of risk origin and it‘s estimation calculations (Molis, Gliebutė 2012). Meanwhile public perception relies more on constructive risk origin. Previous research showed that even though from objective point of view the possibility of risk is minimum, public perception might be inadequate because constructivistic processes might exaggerate risk and impact public perception (Augutis *et al.* 2014: 19). And vice-verce: even though the posibility of particular risk from objectivistic point of view might be big due to constructivistic processes its posibility in public perception might be reduced. Thus the role of public perception in energy security implementation context might be ambivalent. On the one hand it might serve as energy security vulnerability while in other as resilience.

In recent history of energy security in Lithuania we could find enough examples when expectations of the experts and public will went in different directions. The most ilustrative examples when society wasn‘t persuede or even declined particular energy projects implemented by the government are Visaginas nuclear power plant (even though government put a lot of efforts in advertising the advantages of the project, during the public referendum society said no for the further development of this project); shale gas fracking (even though it should have increased Lithuania's energy independence from Russia and reduce gas costs that are the strategic goals some parts of society remained happy after *Chevron's* withdrawal); renovation of multi-apartment houses (even though it is one of the most important project to cope with energy inefficiency in Lithuania, throughout the 2005-2012 years (when the renovation program was established) there were renovated only 479 houses (about 1.8%) (according to Public Company "Housing Energy Efficiency Agency"). It is clear that **p**ublic perception of energy security is not defined only by objective reality that determines people's choices by its risks and threats. The reality and public attitude may considerably vary, and sociologists (Slovic 1987; Giddens 1999) seek to explain the discrepancy between expert risk assessment and public risk perception. Obvioulsy people with different levels of education, values, knowledge about energy obviously will interpret energy problems in a different way.

Why a variety of state energy policy activities are misunderstood or unaccepted by a part of population could be explained from another popular – governmentality – theory point of view (Augutis *et al.* 2014). In order to make certain energy policy (e.g. shale gas extraction, Visaginas nuclear power plant, renovation of multi-apartment houses and other projects), it is necessary to present to the population positive information with particular emphasis for particular social group (that is concerning them). In the meantime, the results of the public poll[1] show that most of the society members have vague understanding about the present-day policy of Lithuanian energy policy. 18.3% of the respondents agreed or absolutely agreed with the statement "I am very well informed about the energy problems".

Energy threats and risks can be treated as a specific way of shaping and controlling the opinions of inhabitants steering the society behavior in certain direction. It becomes especially relevant when the society is not sufficiently informed. Usually threats and risks calculated for energy sector are related with potential population group choices, therefore, when presenting specific suggestions it is possible to indirectly force them to make different decisions (e.g. support for the renovation of multi-apartment houses). Governance is considering more and more the rationality of interest groups, but it is hard to use it if the inhabitants think that energy policy makers do not represent the interests of society or the policy is homogenous and do not take into account the differences of society. For example the concern (possible security problems in the Visaginas nuclear power plant or ecological issues of shale gas extraction) of certain population groups can be used in governmentality technologies by offering different opportunities and stressing the welfare for individuals if they use these opportunities. But the research show that major part of society does not agree that Visaginas nuclear power plant is safe or does not have the necessary information[2]. Governmentality theory relies on assumption that energy risk is of constructivist nature; therefore, it becomes the constituent part of the governing of society. The theory urges to recognize and understand the perception differences among various social groups and target it in the construction of the smooth (energy) policy.

Energy independence or simply energy security is identified as the primary goal in the official documents of Lithuania (National Energy (Energy Independence) Strategy 2012). Meanwhile the results of the already mentioned public poll reveal that for society the most important aspect of energy security is price (89.7% *important* or *very important*). The majority of Lithuanian society agree the energy independency from other countries is important (important or very important - 71.8% agreed) aspect of energy security, 68.7% mentioned that "the state should be concern with and do more about cheap energy instead of energy security", and only 30.8% agreed that "the state should be concern with energy independence despite the requirement for bigger invest-

[1] Here and hereinafter are used the results of public polls carried out in 2013 (by public opinion analysis agency "Vilmorus"), N-2002, and in 2014 public poll was repeated with smaller sample amount, N-1002.

[2] "I think that the project of Visaginas NPP will be safe" - 40,2% Totally disagree/ disagree, 23,7% Agree/totally agree, 36 Don't know/unanswered; "I think that the project of Visaginas NPP will be economically beneficial for Lithuania" - 37,2% Totally disagree/ disagree, 26,8% Agree/totally agree, 36 Don't know/unanswered; "I think that the project of Visaginas NPP will cause new problems for the Country" 17,82% Totally disagree/ disagree, 48,1% Agree/totally agree, 34,1 Don't know/unanswered.

ments" (Augutis *et al.* 2015: 23). Even though it is almost impossible to ensure the supply of cheap energy without achieving independence of energy sector from monopolistic system, hence the society does not intend to support this goal at the expenses of personal wealth.

Energy security obviously correlate with economic benefit (Feng *et al.* 2009; Gasparatos, Gadda 2009; Kaygusuz 2012; DeCarolis *et al.* 2012; Travkina, Tvaronavičienė 2015) and the efficiency of particular energy projects suppose to produce economic payback, but it doesn't portray the complexity of possible effect of energy security towards society. The economic aspects do not necessarily become key elements for smooth energy security. Even if particular project looks good in official plans it might remain only a plan if society will not be persuaded its usefulnes or the implementation will be covered by shadows and doubts. There were numerous public debates discussing and arguing the official price, wishful price, real-expected price, whether it is beneficial and who will enjoy the benefit of each particular project to be implemented in Lithuania since the declaration of Independence. Despite this huge public concern it is difficult to assess the efficiency of some particular investments (made by the government). This applies for the development of solar energy, VNPP, and even such successful project as LNGT. The question that always remains relevant for society is - whether we are not paying for energy security too much? Even though the concrete project is strategicaly usefull it might not necessarily contribute to the increase of energy security if the society oposes to its implementation. Even if concrete project is economically beneficial and usefull for the state it still might be too pricy for society and therefore serve as economic burden (for society) which foster fragmentation.

Some contradictions that face Lithuanian energy policy were elaborated in other papers (Leonavičius, Genys 2014; Leonavičius, Genys, Krikštolaitis 2015). Such contradictions (especially the parallel between strategic interest of the country to become energy independence and public interest for cheaper energy) helps not only to identify the differences among various social groups on perception of energy security, but also reveal the potential fragmentation and decrease of social cohesion in society. It is important to identify the size of such potential, i.e., whether society understand, aproave and support the official goals of the government and to analyze what kind of effect on social groups with different income has the government's pursue of energy security (by installing particular energy projects).

Economic differentiation is quite vivid in Lithuania (Lisauskaitė 2010; Zabarauskaitė, Blažienė 2012), therefore energy prices have different effect on different social groups. The welfare of large part of Lithuanian society depends on centralized supply of energy resources (gas, electricity, district heating), poor quality of energy infrastructure, inability to take individual decisions, and especially prices (Leonavičius, Genys 2014). It is obvious, that part of society with lower income is particularly vulnerable not only because of increasing energy prices, disruption in supply or other risks of the energy system, but also because of the growing financial burden that occurs due to the quest for energy security. Therefore, the cost for energy security (the same as labor market, low income, unemployment, health care and etc.) might become the reason for increase of social exclusion.

3. Energy security as risk for social exclusion?

On the one hand the efficiency of energy security is dependent on social exclusion (i.e., whether society is fragmented or on the contrary - mobilized for realization of particular projects). On the other, the energy security itself can contribute to the increasing or decreasing level of social exclusion (i.e., whether particular projects address the interest of all social groups and fosters involvement).

Usually energy security is expensive necessity thus it is important to consolidate society for the common goal. And on the contrary, if society does not approve particular projects and is not mobilized for the particular goal or if the actual effect of energy security pursue have controversial consequences on society it is difficult to achieve it even if the economic side of the project is beneficial. The economic rationality of energy security does not necessarily become key element for smooth energy security policy. Democratic societies are diverse societies and different social groups have different imagination of what rationality mean for them.

The efficiency of energy security from sustainable development point of view should be linked to two aspects: 1) its capacity to balance possible opositions between its aim and public attitude to it; 2) the actual effect of the pursue of energy security policy and its impact on public behavior, i.e., state interest vs. public concern, development of security scenarios vs. public support for concrete projects, efficiency and balance between investments vs. social justice. The concept of social exclusion helps to understand the life experiences stemming from multiple forms of deprivation and inequality experienced by people in different places of the social hierarchy. It also reveals the reduced abilities of participation in society, consumption, mobility, integration and influence of particular individuals or social groups (Taket *et al.* 2009: 3).

There are plenty of various conceptualization (Taket *et al.* 2009; Jehoel-Gijsbers, Vrooman 2007; Duhaime *et al.* 2004; Martin 2004) and operationalization (Burchardt, Le Grand, Piachaud 2009; Chan *et al.* 2006; Rajulton, Ravanera, Beaujot 2007) differences of social exclusion. The most important aspects of social exclusion usually are distinguished the following: participation, consumption, mobility, access to services, integration, influence and recognition. Four main dimensions are distinguished in the analysis of social exclusion: consumption (ability to buy goods and services), production (participation in activities that are considered economically and socially valuable), political participation (participation in decision-making at local and national level) and social interaction (relationships with family, friends and the community). Deprivation of any of these dimensions can lead to social exclusion (Burchardt, Le Grand, Piachaud 2009: 31).

Social exclusion is similarly conceptualized by another group researchers, who say that social exclusion, consists of „multiple dynamic processes driven by unequal power relations between the four (economic, politic, social and cultural) main dimensions that have different impact on individual or group, community, nation or global scale (Popay *et al.* 2008: 2).

Such interpretation is similar to theoretical framework of social cohesion offered by J. Jenson (1998) and P. Bernard (1999) and their suggested six analytical dimensions. Social exclusion as result of the lack of resources or its high prices and inability of some people to acquire them or because of that it affects dignity and position in social hierarchy or creates obstacle for some people to participate and maintain normal social relations, has an impact not only on quality of life but also affects public perception of social justices and social cohesion (Levitas *et al.* 2007: 9).

There are two main directions of how social exclusion is being studied in Lithuania: one direction focus on economical aspects of social exclusion and on social groups that experience the qonsequences of exclusion the most; while other direction focus on the phenomena of social exclusion, comparison research, main reasons of exclusion formation as well as possible preventation models (Tereškinas, Bučaitė-Vilkė 2015: 22). In this paper social exclusion is interpreted as process (i.e., related to risk factors that might increase the possibility of social exclusion) which encompass three levels: individual (micro), community (meso) and societal (macro). This is relevant in this case due to complexity of analyzing object (energy security policy) which is constantly balancing throughout all three levels.

The analysis of energy security from social exclusion point of view is suplemented by sociocultural aspect. It includes such dimensions as insufficient social integration (energy security impact on participation in formal/ informal social networks (including leisure activities) and social support as well as social isolation) and insufficient cultural integration (miss- compliance with norms and values of active citizenship, i.e., indifferences for interest representation, alienation from energy security policy, miss-interpretation of social justices, abuse of the state privilege for poor, etc.).

Tracing the relations between energy security and social exclusion, it can be said that the pursuit of energy security is associated with social justice which could operationalized by the following questions: how public interest is recognized, defined and represented in energy security policy? How (and if at all) the interest of smaller social groups (environmentalists, pensioners, poor, etc.) is recognized, defined and represented? Whether energy security policy acknowledges interest of poor, deprived and disenfranchised individuals or ad-

dresses solely active and powerful (from consumption point of view) individuals? Finally, how existing energy security policy treats and fosters to feel vulnerable groups?

4. Conceptual framework and operational guidelines

In this paper the conceptual framework is build and operational guidelines is set based on different social exclusion/cohesion models, proposed by such authors as Burchardt, Le Grand, Piachaud (2009), Popay et al (2008), Jenson (1998), Bernard (1999). For operational guidelines we use the integrated conceptual scheme of social cohesion provided by Bernard (1999) in which we incorporate the insights of above presented authors. This particular model has been chosen because of it holistic approach encompassing all important dimensions. The model is based on two activity spheres: firstly - (economic, political and socio-cultural); and secondly, on the formal - subjective/attitudinal (how people perceive them) and substantial/behavioral (how people act) relations. These two theoretical facets lead to the conceptualization of the following dimensions: affiliation/isolation, insertion/exclusion, participation/passivity, acceptance/rejection, legitimacy/illegitimacy and equality/inequality.

Such conceptual framework needs modification because in this case it is used not to test social exclusion/cohesion in general but to analyse the impact of energy security on social exclusion. In the assesment of the level of social exclusion/cohesion usually are used both subjective and objective metrics wich cover formal/attitudinal as well as substantial/behavioural nature of relations. It helps to identify the relation between attitudinal and behavioral aspects of society towards energy security. The conceptual dichotomies between formal / attitudinal and substantial / behavioural nature of relation and sets the guidelines for analogical empirical items of each dimension for energy security research is summurized in Table 1.

The formulation of particular questions might vary and depend on the general aim of researcher. The important thing is to accumulate sufficient amount of questions in order the indicators of each dimension would decently represent the impact of energy security on social cohesion. Therefore, in empirical research, before further analysis it would be useful to assess the reliability of internal indicator set within a questionnaire (i.e. to calculate Cronbach alpha coefficient). Needles to say that during the operationalization process (suggesting concrete empirical items) the peculiarities of social organization tradition should be taken into account[3].

As it was mentioned before the operationalization of empirical variables is based on presented theoretical framework, the analogies of empirical variables for energy security were elaborated by the author of this paper.

Economic sphere. The items of formal/atittudinal dimensions suppose to help to identify the attitude of society towards existing insertion/exclusion mechanisms. Meanwhile the items of substantial/behavioural dimensions suppose to reveal the existing equality/inequality ballance of society in reality. The analogy of empirical items from energy security impact on society point of view are prescripted in the following way: the items of formal/atittudinal dimension covers various questions with aim to reveal the societal attitude towards the evaluation of the burden of energy security as well as its social justice and evaluation of public opinion of particular projects. The items of substantial/behavioural dimensions cover various questions with the aim to reveal the economic burden experianced by the society, its impact to the distances (economic and social) between different groups of society and the aproaval of concrete projects.

Political sphere. The items of formal/atittudinal dimensions suppose to help to identify society trust in various governmental institutions and organizations, it legitimacy and efficiency in representing public interest. Meanwhile the items of substantial/behavioural suppose to reveals factual participation and activity of society in democratic governance. The analogy of empirical items from energy security impact on society point of view are prescripted in the following way: the items of formal/atittudinal dimension cover various questions with aim to reveal societal trust in various organizations and institutions as well as private companies (including

[3] Over the years different traditions of social cohesion have evolved in different countries. Comparative analysis (Green, Janmaat, Cheng 2011) of contemporary societies identifies three distinctive types - known as 'liberal,' 'social market' and 'social democratic' - of social cohesion. Which emphasize different aspects of cohesion growth as well as exclusion increase. It is crucial to grasp such aspect as market freedom and role of civil society as well as institutional embedding when trying to set empirical indicators.

foreign) related with energy security and atittude towards safety of concrete energy projects. The items of substantial/behavioural dimensions cover various questions with aim to reveal factual society‘s civic activity and involvement as well as their knowledge about various aspects of energy security.

Sociocultural sphere. The items of formal/atittudinal dimensions suppose to help to identify the attitude of society towards openness and respect for diversity. Meanwhile the items of substantial/behavioural suppose to reveal the dominated values and their diversity through the belonging of the society to various organizations. The analogy of empirical items from energy security impact on society point of view are prescripted in the following way: the items of formal/atittudinal dimensions cover various questions with aim to reveal public perception of social justices of energy security and readiness to contribute to public interest in energy security as well as perception of energy security (whether it is based on self interest or societal interest). The items of substantial/behavioural dimensions cover various questions with the aim to analyze whether the existing effect of energy system on society maintains the possibility to remain autonomous and ability to individually defend onself from energy threats.

Table 1: Integrated conceptual scheme of social cohesion analysis (based on Bernard’s model).

Sphere	Nature of relations	
	Formal / attitudinal	Substantial / behavioural
Economic	Insertion/exclusion	Equality/inequality
	The formal/attitudinal items of economic dimension should cover questions with aim to reveal the societal attitude towards the evaluation of the burden of energy security as well as its social justice and evaluation of public opinion of particular projects.	The substantial/behavioural items of economic dimension should cover various questions with the aim to reveal the real economic burden experianced by the society, its impact to the distances (economic and social) between different groups of society and the aproaval of concrete projects.
Suggested empirical items for energy security research	Atittude to social justice of energy politics Atittude to beneficiancy of energy projects Importance of particular energy security projects	Approaval of particular energy projects Individual energy expenses Ration between income and energy expenses
Political	Legitimacy/illegitimacy	Participation/passivity
	The formal/attitudinal items of political dimension should cover various questions with aim to reveal societal trust in various organizations and institutions as well as private companies (including foreign) related with energy security, assigned responsibility and atittude towards safety of concrete energy projects.	The substantial/behavioural items of political dimension should cover various questions with aim to reveal factual society‘s civic activity and involvement as well as their knowledge about various aspects of energy security.
Suggested empirical items for energy security research	Trust in governmental organizations; national energy organizations; foreign energy companies; international organizations Atitude to goals of energy security policy Evaluation of safety of energy projects	Individual participation in democratic affairs Individual participation, personal awareness and knowledge on energy affairs (eg., strategy formation, interest representation, etc.) Assigned responsibility (evaluation of interest representation of particular actors)
Sociocultural	Acceptance/rejection	Affiliation/isolation
	The formal/attitudinal items of sociocultural dimension should cover various questions with aim to reveal public perception of social justices of energy security politics and personal readiness to contribute to public interest in energy security as well as perception of energy security (whether it is based on self interest or societal interest).	The substantial/behavioural items of sociocultural dimension should cover various questions with the aim to analyze whether the existing effect of energy system on society maintains the possibility to remain autonomous and ability to individually defend onself from energy threats.
Suggested empirical items for energy security research	General perception of energy security Personal will to contribute to energy security Satisfaction with energy security facilities Conflict potential (reasons for social protests in energy security context and the form of protest)	Effect of energy policy on individual (quantitative aspects) Kind of effect of energy policy on individual (qualitative aspects) Individual accessibility for energy services (independence possibility, confidence in self-protection)

Resume

Such research would provide an opportunity to explore three (economic, political and socio-cultural) dimensions in more details and analyze the contribution of each aspect of energy security on social exclusion. Depending on the aim of the research it would be possible to identify specific social groups which have most diverse opinion or which suffer from particular aspects of energy security the most. The importance and usefulness of such methodology however might be more appropriate for young democracies and developing countries where inequalities between various social groups are more vivid. And on the contrary in countries where dominates equality most probably disproportion between strategic interest and public support would be less likely present.

In the analysis of energy security impact on social exclusion it is important to take into account not only the efficiency (strategic or economic) of concrete energy project itself, but also its impact on social exclusion/cohesion. In the quest for strategic long term goals sometimes it is inevitable to raise the price of energy, but from sustainable development point of view this might lead to the fragmentation of society and even to the growth of anxiety. To compensate this negative side it is important to gain as much public support as possible. As we have seen, large part of Lithuanian population understands the importance of energy security and the need to protect from possible risks. However public opinion results indicate the insuficiency of such support. For successful implementation of energy security policy and optimization of the level of social cohesion it is inevitable to take care of both favorable public opinion and the positive impact of particular projects on society.

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