ABSTRACT

The siting and construction of new nuclear facilities presents a great challenge, since it is a complex and demanding project. Nuclear power plant is a highly specific works for the siting and construction. The Republic of Slovenia has no established legislative practice and experience under the current legislation, as the existing Krško Nuclear Power Plant was built at the time of other social and economic conditions and within a completely different legislative framework. On the territory of the Republic of Slovenia only major infrastructural facilities of national importance, such as motorways, hydroelectric power plants, transmission lines, gas pipelines, etc., have been sited until now. The procedures for the siting and construction of such works are long-lasting, so the question arises about the actual timing of the construction of the new nuclear power plant, and whether the existing procedure of siting and construction can be reduced in any way. This is particularly important because of the way of approaching to the implementation of financing of such a project and the selection of the supplier. The question is also relevant because of the sensitivity of the topic related to safety and because of related public consensus on the acceptability of construction of such facilities.

In the article, and later on in the discussion, we would like to identify and discuss those aspects of Slovenian legislation which are likely to cause problems in the process of obtaining permits for the siting and construction of nuclear power plant. As the symposium takes place in international frameworks, we would like to learn more about foreign practices.

1 INTRODUCTION

The fact is that energy needs are increasing every year. Despite the construction of new hydroelectric power plants and other facilities for the production of electric energy in Slovenia, the expected electricity needs are unlikely to be met. This can be avoided by siting of nuclear facilities in the Slovenian area. Although many questions about the use of nuclear energy for commercial purposes arise, experience shows that the energy generated using this form of energy production is safe and relatively clean for the environment, and evidence exists that it helps to reduce global warming. Slovenia is also committed to achieving certain goals in the fields of climate changes and energy safety. For this reason, it is reasonable to
support this kind of energy and allow investors to invest for this purpose. A step in this
direction is presented in this article, which opens the discussion to improve our legal system.

A review of the intertwining of current Slovenian legislative framework seeks to
identify those aspects of the existing legislation in all fields (strategic decision-making,
environmental protection, nature protection, water protection, nuclear safety, power industry,
etc..) causing eventual problems in the process of siting nuclear facilities, in order to open the
discussion of key obstacles impeding the process of siting a nuclear power plant.

Notwithstanding the current legal system in our country, we are facing numerous
administrative obstacles, which make the procedures of siting of facilities long-lasting. To
begin a procedure, it is important, above all, to make a clear and unambiguous decision about
whether or not Slovenia will site a nuclear facility. This is the decision that will launch a
wide-ranging debate which will have a decisive impact on the success of the project.

2 PURPOSE AND OBJECTIVES

The purpose of this article is to examine the current Slovenian legislative framework
concerning the procedure of siting of nuclear facilities and to identify the problems and
obstacles arising from the current legislation. Similarly to other countries of the European
Union that have developed their own nuclear programmes, Slovenia also has regulated the
field legislation in terms of nuclear safety, which is in line with European and worldwide
directives governing these fields.

Nuclear law is embedded in our legal system and as such it is intertwined with the
legislation related to: development and strategic planning, spatial planning, power industry,
climate changes, environmental protection, nature protection, water management, performing
nuclear activities, radiation safety and liability for nuclear damage, public procurement,
construction of facilities and the operation of facilities, procedures for decision-making at the
governmental or parliamentary level, the provisions for participation of the public in decision-
making processes, etc.

Increasingly, it is being noted that particular acts in the legislation are uncoordinated,
that the procedures are duplicated and that the time frames to obtain certain permits are much
too long.

The aim of the article is to stimulate thought and discussion on the adequacy of the
current legislative framework for siting and construction of major national facilities and on
any amendments to the current legislation that would enable fast, efficient and transparent
implementation of key national projects.

3 HYPOTHESIS

“Quick and efficient siting of nuclear facilities will be possible only on the assumption
that a special legislation is adopted for the construction of nuclear facilities.”

4 LEGAL OBSTACLES

4.1 General

As mentioned above, the siting of nuclear power plants is a lengthy process, requiring a
lot of effort to reach a general consensus, since we come across various interests intertwined
at various levels and in various fields when dealing with siting procedures. In reality, the fact
is that every process is clearly defined in the field legislation, but the procedures and legislation acts of different fields are not coordinated. They are current legislative bases, which are not consistently coordinated and they may allow for different interpretations of requirements and courses of procedures, the documents being uncoordinated or “non-simultaneously” tied (phases of documents of different acts do not coincide).

Those are, therefore, the circumstances that can only be mitigated by means of changing and amending the laws, and not eliminated. So, the timeliness of decisions taken in leading, especially strategic, documents of the Republic of Slovenia, non-guaranteed financial resources, lengthy public procurements (lengthy processes and appeals within the processes), lengthy processes to obtain directives from certain responsible entities in the spatial planning, etc., are coming to the forefront.

The problem is not only in the legislation, but also in the specificity of nuclear power plants, which is reflected in the selection of the location, the specifics of the selection of the supplier, as well as the safety criteria.

Considering that the planned new power plant is being sited at the location near the existing nuclear power plant, the issue, in terms of strategic siting, arises about whether this will be a “new” nuclear power plant, for which a legal basis has to be provided in strategic spatial planning documents and the strategic assessment process must be carried out, or merely a “second block” of the existing power plant, where there will be only a “complementation of the range of activities” of the Krško Nuclear Power Plant, and, consequently, the siting procedure can be carried out much faster.

The selection of the supplier was not of greatest importance in most projects of siting of national infrastructure works. The only exception are nuclear facilities, for which this procedure is essential, since the investment as well as the process of siting of a power plant depend on it. Considering the current legislation, it is necessary, for an efficient siting procedure, to get all the technical details and specifications from the supplier in the earliest phase of the procedure, i.e. at the stage of ideal project preparation, which is prepared as an expert basis for the preparation of a proposal of the National Spatial Plan.

The third specific is represented by the safety criteria. These are the criteria for assessing the suitability of the location which are taken from international safety standards (the so-called IAEA standard NS-R-3). In determining the location of a nuclear facility the standards of the following areas have to be taken into account: soil geology, environmental impact assessment, hydrogeological characteristics, water resources for cooling systems, geochemical characteristics, seismic activity, permeability, erosion, meteorological disasters (strong winds, precipitation, extreme temperatures,...), and human factors (explosion, fire, airplane crash). Besides, it is necessary to take into account the environmental impact assessment at the specified location.

Below are, considering the specifics of the siting of nuclear power plants, presented the key legislative frameworks and processes taking place in the siting process, the relations between various legislative frameworks, and obstacles that appear in these processes.

4.2 Strategic (national) decision-making and the issues

4.2.1 Development planning and strategic planning by the Republic of Slovenia

The Republic of Slovenia has adopted the Slovenian Development Strategy for the period 2006–2013 (SRS), which is gradually running out. In January 2013, the Decision to launch preparations of the Slovenian Development Strategy for the period 2014–2020, herein
after SRS, was adopted. The Slovenian Development Strategy (SRS) is the main strategic development document that provides the orientation for the country’s development in individual time periods. From this perspective, it is essential that the new SRS includes the possibility of siting a nuclear facility.

4.2.2 Climate changes

The construction of nuclear power plants is in the programmatic documents not planned as a measure to reduce greenhouse gases emissions, although this possibility has been pointed out several times. The National Action Plan for Energy Efficiency for the period 2008–2016 refers to the Resolution on National Development Projects for the period 2007–2023 (ReNRP), which foresees the construction of nuclear power plants. The Resolution also foresees the preparation of a new Operational Programme for Reducing Greenhouse Gases Emissions for the period 2013–2020. It would be reasonable to include into this new programme also the possibility of siting a nuclear facility as one of the options for achieving the goals of the environmental policy.

4.2.3 Power industry policy

The basic document for the power industry policy is the National Energy Programme, which is adopted by the National Assembly of the Republic of Slovenia. In view of the goals and the role of the National Energy Programme according to the valid legislation, the siting of nuclear facilities has to be included in this programme, at least as one of the variant options.

Currently, the valid text of the programme is presented in the Resolution on National Energy Programme (ReNEP), adopted in 2004, which does not foresee the construction of a new nuclear power plant or any substantial increase in the share of nuclear energy, although it does considerably emphasise the need for quality and reliability of electric energy supply, e.g. in the statement that the country will favour those power plants which will uphold the public interest by reliably supplying the country with electric energy. The project of NPP Krško 2 is supported also by the findings regarding the environmental pressures and key environmental challenges coming from the impact of power industry activities on climate changes and use of natural resources.

The draft of the new National Energy Programme is being prepared. Among its goals in the field of nuclear energy is also the goal to contribute to reliable, long-term stable and low-carbon supply of electricity with further long-term exploitation of nuclear energy in Slovenia, by constructing a new nuclear power plant. In order to achieve this goal, the Government of the Republic of Slovenia should, as a matter of priority, provide supporting background for the building of a sustainable repository for low and intermediate level waste at the location Vrbina in Krško and for further long-term exploitation of nuclear energy in Slovenia by constructing a new power plant (a third-generation nuclear power plant which meets the state-of-the-art internationally recognised technology) at the location near the existing nuclear power plant. As the key element of this supporting background for the achievement of the goal, the draft National Energy Programme identifies quality, timely and transparent decision regarding construction of the new nuclear power plant at the location near the existing nuclear power plant and stimulating the development of supporting activities in the field of nuclear energy, which will enable quality and safe operation of the existing power plant, as well as greater synergic effects the building of a new power plant will bring to the domestic economy.
4.3 Lack of harmonisation between individual acts involved in the siting

4.3.1 Spatial planning

Currently valid acts regarding the strategic spatial planning at the national level are the Spatial Development Strategy of Slovenia (SPRS) and the Spatial Order of Slovenia (PRS), both from 2004. According to the Spatial Development Strategy of Slovenia (SPRS), the NPP Krško will remain in operation. Modernisation and renewal programs will ensure safe plant operation and create conditions for its possible life extension. The Decree does not explicitly foresee the expansion of the existing nuclear power plant or the construction of a new nuclear power facility, although it does not explicitly rule out such projects.

The Spatial Planning Act (ZPNačrt) says that the National Strategic Spatial Plan (DSPN) should be prepared instead of the Spatial Development Strategy of Slovenia (SPRS), but until now it has not been adopted. The Spatial Planning Act says that the National Strategic Spatial Plan should determine the concept of spatial development of national significance in a way that adjusts the development needs derived from the national development documents to environmental requirements. The siting of NPP Krško 2 should be foreseen already in the National Strategic Spatial Plan. The Ionising Radiation Protection and Nuclear Safety Act (Article 64) also implicitly states that the planning of a nuclear facility should be based on the national strategic spatial act.

4.3.2 Environmental protection

The Environment Protection Act (ZVO-1) says that the procedure for preparing a plan, a programme or another general act, as well as its changes, the implementations of which may significantly affect the environment should include performing of a comprehensive environmental impact assessment, which establishes and assesses impacts on the environment and verifies whether requirements regarding environmental protection, preservation of nature, protection of human health and cultural heritage are met in the plan, and obtaining, from the Ministry, of the certificate regarding the acceptability of its implementation with respect to the environment. The key point for the acceptability of the comprehensive environmental impact assessment from the perspective of environmental protection is the environmental report. The Spatial Planning Act excludes the implementation of the comprehensive environmental impact assessment for the National Strategic Spatial Plan, although the impacts on the achievement of environmental goals are assessed in the report on the impacts of implementation of the National Strategic Spatial Plan. The strategic environmental impact assessment will thus have to be implemented in the process of preparing and adopting of the National Energy Programme – if it involves the possibility of constructing specific power facilities – and in the process of adopting of the National Spatial Plan (DPN) for the project of NPP Krško 2 (this is explicitly required also by the Ionising Radiation Protection and Nuclear Safety Act). The implementation of the strategic environmental impact assessment in the process of adopting the National Spatial Plan is, in a more detailed manner, regulated by the Act Regarding the Siting of Spatial Arrangements of National Significance in Physical Space. The environmental report must be developed in the phase of preparation of the study of the proposed spatial arrangements variants.

According to the Ionising Radiation Protection and Nuclear Safety Act, the selection of area for spatial planning of a nuclear facility is carried out on the basis of a special safety analysis (PVA). The special safety analysis is the basic document for selecting the most suitable solution from the study of variants. It serves as a basis for evaluating all factors at the planned site which can influence facility’s nuclear safety during its lifespan, as well as
impacts on population and environment due to its operation (while the results of evaluation in the special safety analysis report are input data for preparing the Environmental report). The Slovenian Nuclear Safety Administration in the phase of preparing the National Spatial Plan issues directives containing detailed contents and scope of the special safety analysis.

Among the activities for which the environmental impacts assessment is always obligatory is also planning for a nuclear power plant or other nuclear reactor. Also, according to the Ionising Radiation Protection and Nuclear Safety Act, a facility with radiation impacts or nuclear facility requires obtaining of the Environmental Protection Consent in line with the provisions of the Environment Protection Act. The conditions, scope and contents of the Environmental Impact Statement – in the part referring to radiation and nuclear safety – are determined on the basis of the proposal by the Slovenian Nuclear Safety Administration.

The Environmental Protection Consent is confirmed by the Slovenian Environment Agency by an administrative decision. According to the Ionising Radiation Protection and Nuclear Safety Act, the Slovenian Nuclear Safety Administration should be asked for a prior consent on radiation and nuclear safety with proposals of conditions in the Environmental Protection Consent determining, primarily, the levels of allowed exposure of environment to the ionising radiation, the boundaries of area with restricted use due to the implementation of radiation and nuclear safety measures in such area, and other prescribed conditions of nuclear and radiation safety.

The plan for NPP Krško 2 foresees a cooling system with a cooling tower which is among the structures for which, according to the Article 82 of the Environment Protection Act, the applicant must obtain the environmental protection permit.

According to the provisions of the Espoo convention, the party which plans activities that can be a source of transboundary impacts (including a nuclear power plant or other nuclear reactor) should inform any other party which may be affected by the activity and enable it to participate in the process of environmental impact assessment. In terms of the environment, the transboundary impact assessment is also a problem that represents an additional obstacle. When making decisions, Slovenia thus has to take into account written opinions and comments of another country as much as possible. Since the decision about the nuclear facility is, after all, a political decision of a sovereign country, a neighbouring country cannot legally prevent the planned activity. It can, however, demand strict compliance to the regulations and initiate the processes under EU bodies or bodies of the relevant international conventions due to breach of obligations in regard to informing about transboundary impacts or due to inappropriate implementation of the transboundary consultation.

### 4.3.3 Nuclear Safety

The planning of new NPPs should take into account the EU regulations, the safety provisions of the International Atomic Energy Agency (IAEA) and the Western European Nuclear Regulators Association (WENRA).

The existing legal regulations in the field of nuclear safety in the Republic of Slovenia shall also be complied with, and according to them the procedure for obtaining of permits should include the preparation of the special safety analysis and the safety report. Both are prepared under the procedure for environmental assessment, which can introduce certain issues in regard to competences of different bodies involved in the overall procedure.

The greatest problem, regarding these matters, is in the fact that Slovenia does not have a regulation or a prescribed procedure, criteria and conditions for determining the parameters to which technology and facilities should comply. Prescribed project parameters would
considerably facilitate the procedure of consent acquisition and, above all, shorten the procedure itself, as the spatial planning stakeholders would in the phase of opinions/consents merely check whether the design meets the requirements and conditions. These conditions are, currently, to be determined during the preparation of the National Spatial Plan.

4.3.4 Water management

The NPP Krško 2 will, like the existing NPP, need the appropriate water right (by a decree) to use the water from the Sava River. The water right can be obtained on the basis of a water permit or concession, in accordance with the Water Act. As it goes for the use of water for technological purposes, the operator of the NPP Krško 2 will have to obtain a water permit to be issued by the Slovenian Environment Agency. The operator of the NPP Krško 2 will also have to pay water usage fee, proportionate to the scope of water right. The investor for the NPP Krško 2 will also need the water consent, as issued by the Slovenian Environment Agency.

4.3.5 Construction of Facilities

The Construction Act regulates architectural design with design documentation, obtaining of project conditions and consents, the procedure for issuance of the construction permit and the construction process itself, as well as trial operation and the permit of use. Since the NPP Krško 2 is a facility of national significance, the issuing of the construction permit for it will be the competence of the Ministry of Infrastructure and Spatial Planning. The following three aspects in the procedure for preparing the project documentation and obtaining of the construction permit are important in regard to the time course of the investment.

- The general administrative procedure has the provisions to include side-participants in the process. The procedure can include any person claiming to protect a legal interest, which can delay the process.

- The right to build, since the investor should, before acquiring the building permit, own all land at which construction is foreseen. This may take time since the construction of a nuclear facility is an extensive project which requires the acquisition of many plots (the location itself, transferring infrastructure, the area of limited use...).

- The license to use is issued by the Ministry of Infrastructure and Spatial Planning after the completed construction by the decree on trial operation and by carrying out initial measurements of operational monitoring in line with the Environment Protection Act and the Ionising Radiation Protection and Nuclear Safety Act.

In this procedure, the relation between the required administrative decisions in connection with test operation as issued according to the Construction Act and as issued according to the Ionising Radiation Protection and Nuclear Safety Act is not quite clear.

4.3.6 Provisions for participation of the public

Involvement of the public in procedures for the siting and construction of facilities is of key importance, especially in the phase of making key decisions and spatial planning. The public should be, also on the basis of European and Slovenian legislation, included in the process of spatial planning in the earliest possible phase, when different possibilities are still open. The public should be presented with all information which is required for their active
participation, not only the information about the planned project, but also the possibilities they have as participants in the procedures.

In this manner a lot of time can be saved and major delays due to the public’s opposition or social unacceptability of a certain project avoided. In order for the cooperation of the public to produce constructive results, the principles of communication need to be applied, which are not prescribed by the legislation. Also, additional parallel ways of communicating, as well as communication with all stakeholders, must be taken into account, which would increase the efficiency of the procedure itself.

Provisions for the public participation are prescribed by international conventions and the EU directives which are a part of Slovenian legal order, namely: the Aarhus Convention on access to information, public participation in decisions and access to justice in environmental matters; the Espoo Convention on environmental impact assessment in a transboundary context; the Directive 2003/35/ES establishing the participation of the public with proposition of certain plans and programmes related to the environment; the Directive ES of 27th June 1985 on the assessment of the effects of certain public and private projects on the environment; the Directive 2003/4/ES on public access to environmental information.

The provisions regarding the public participation in the siting process are in the Republic of Slovenia stated in the Act on the Access to Information of Public Character, the Environment Protection Act, the Ionising Radiation Protection and Nuclear Safety Act, the Media Act, the Spatial Planning Act and the Act Regarding the Siting of Spatial Arrangements of National Significance in Physical Space.

5 SUMMARY FINDINGS

Based on the breakdown of the existing legislation and the problems that may arise during the siting procedure due to non-harmonised legislation, various simulations of process of siting the NPP 2 Krško have been prepared for the project needs. When preparing the simulations of the siting procedure, different scenarios have been imagined, taking into account the extent of changes in the existing legislation as well as the specifics of the siting of nuclear power plants (safety criteria and the supplier selection). Simulations have been prepared on the assumptions that the preliminary procedure of strategic siting needs not to be carried out before the siting procedure, because the location is already determined and the new NPP 2 will only complement the activities of the existing NPP, and that the strategic decision on nuclear power plant has been taken, at the national level, in at least one of the strategic documents. The starting point of the simulations of siting presents the simulation according to the current legislation, without any changes or amendments. Depending on the specifics of the NPP siting, different scenarios of procedure proceedings have been constructed, either in the case of changes and amendments to certain provisions and articles of the current legislation, or in the case of a new special legislation for siting and construction of nuclear facilities. During the preparation of simulations the impact of the supplier selection on the siting procedure has been examined, as well as when in the siting procedure the supplier selection should be included.

Simulations of the process of siting a nuclear power plant, from the strategic decision to the operation, have shown that a new special legislation for nuclear facilities would not shorten the siting process. Its implementation would even prolong the procedure, as it brings about also a much longer time of introducing it into practice. In the first years after the adoption also numerous complications may be expected, since the competent bodies and other users of the law would need more time to study the new legislation and the preparation of its application, which would prolong the preparation process. In addition, compared with the
changing and amending the legislation, the adoption of a new legislation is professionally and procedurally very complex, meaning that the beginning of the NPP 2 siting would be linked to the date of adoption of the new law. As demonstrated in the simulation of the process, it is much more efficient and rational to change, supplement and harmonise the existing legislation, where necessary, and adapt the siting procedures to the specifics of the construction of nuclear power plants.

Based on the findings we refute the preliminary hypothesis, since it has been shown that fast and efficient siting of nuclear facilities (nuclear power plants) can be achieved with minimal changes in the current legislation.

REFERENCES


