Bianka Enikő KOCSIS*

Certain Water Law aspects related to the development of the Nuclear Power Plant of Paks**

Abstract

The ongoing Paks II investment in Hungary means a significant use of environment. Water is one of the components of the environment affected by this investment. For this reason, it is topical to examine certain rules of the Water Framework Directive in connection with this topic. Probably, the investment may have serious impacts on water of the Danube, since according to the plans it will be used to the refrigeration of the new blocks. According to this, the study examines a concrete provision of the abovementioned directive, the fulfilment of the obligation on achieving good state of surface and groundwater. This study based on the first and second instance environmental permits – after the analysation of these documents, it can be concluded, that the investment will not endanger the abovementioned provision on quality of water in case of proper implementation of the plans. Beside examination of the related legal provisions, method of historical analysation is also used in this study.
Keywords: nuclear law, water law, investment law, Hungarian Nuclear Power Plant of Paks

1. Introduction

At present one of the most important investments of the Hungarian energy sector[1] is the development of the Nuclear Power Plant of Paks (the so called Paks II. investment/project) – several news deal with it nowadays. It is one of the greatest industrial investment of this decade in our country. It has several reasons – for example Nuclear Power Plant of Paks[2] has a significant role in electricity supply of Hungary, since more than 50% of the production[3] depends on it. However the currently operating blocks will be stopped between 2032 and 2037, for this reason the lack in electricity production must be recovered (this necessity is also enhanced by the reason, that according to statistics, in the future the demand on electricity will be increased with 1% yearly in Hungary[4], according to the exact numbers[5] until 2027 5500 megawatts,

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[1] In connection with legal regulation of the energy sector see especially: Olajos & Szilágyi Sz 2012.; Bányai 2014; Bányai & Fodor 2013; Szilágyi Sz 2012; Szilágyi Sz 2014.
[2] In connection with legal regulation of nuclear energy see more details: Szilágyi J E 2010.
[3] See more details about sustainability of the production, and necessity of the development: Csák 2013; Fodor 2013.
[4] Aszódi 2016.
[5] Eck 2018, 2.

until 2032 7000 megawatts new electricity production capacity will be needed to established in our country.)

MVM Paks II Nuclear Power Plant Development Private Limited Company[6] has not started the exact construction yet, since a complex investment like this, requires a very difficult permitting procedure, and several permits (during this procedure) – number of them can be estimated as 6000[7]. Up to now the project has more than 300 permits – among them the most important ones[8] are the site permit, the pre-connection permit, the environmental permit (which is one of the focus points of this study), and the water licence in principle (which is another focus point of this study), therefore the next substantial step will be the acquisition of the construction permit.

Operating of a nuclear power plant makes numerous impact on the environment, which legal analysation could be interesting. Such research areas are the followings: (a) air protection, (b) noise protection, (c) rules on Natura 2000 areas, (d) other topics related on nature conservation, (e) water protection, (f) etc. However because of the complexity and difficulty of these areas, in this study I will not examine all of them, I will focus only on water protection. Inside this topic I will deal with the *Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy*[9] (the so-called Water Framework Directive). Among the rules of the Directive[10] duty on achievement of good status of surface waters and groundwaters connects the most properly to the topic of this study. Since it is needed to the correct examination of the topic of water protection, another significant point of this study is the water licence procedure.

In my research my hypothesis is the following: Paks II. investment does not endanger the good status of water of the Danube, and thus it does not harm related rules of the VKI.

I will start my study with examination of theoretical and legal background of environmental permitting procedure, in order to check the correctness of my hypothesis. After that I will summarize the exact permitting procedure of the Paks II. investment. Afterwards I will check whether certain parts of the environmental impact assessment study are in harmony with the abovementioned rules of the water framework directive. Finally, I will review some parts of the water licence procedure – I will deal with the related legal regulation and the present status of the project alike. Thus in my research I would like to find the answers of the following questions: (a) Has the environmental impact assessment study got parts on examining whether the good status of water of the Danube is in safe? (b) Were there any comments in connection with good status of water of the Danube during the first or second instance environmental permitting procedure? (c) What kind of comments were submitted?

[6] In further: investor.
[7] Zsiga 2018.
[8] Zsiga 2018.
[9] In further: VKI (Water Framework Directive).
[10] See more details about examination of the Directive: Gayer 2007; Padisák, Ács, Borics, Buczkó & Grigorszky 2006; Wágner 2004.

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(d) With regard to the comments, were the first and second instance permissions legal?
(e) What are the potential risk factors during the water licence procedure?

To sum it up, in my research I intend to review and evaluate related regulations and legal documents of the investment, moreover I will use the method of historical analysation.

2. General rules of environmental permitting, and its procedure during the Paks II. investment

I have already examined the theoretical and legal background of environmental permitting,[11] and the environmental permitting procedure of Paks II. investment[12] in one of my former studies,[13] therefore in the present study I will not analyse these topics in details, I will enhance only some significant elements of it.

According to the Act LIII of 1995 on the General Rules of Environmental Protection[14] the ongoing Paks II. investment means the use of the environment[15] thus the exact construction works can be started only after acquiring the environmental permit.[16] This is an integrated permit given by the environmental protection authority (types of it are the followings: (a) environmental permit given in an environmental impact assessment procedure, (b) integrated pollution prevention and control permit, (c) environmental operating permit), a sectorial permit, or any other authority's permit issued on the basis of administration resolution of the environmental protection authority.[17] According to the related Government Decree,[18] development of the Nuclear Power Plant of Paks needs an integrated environmental permit, namely an environmental impact assessment[19] procedure.[20]

[11] See further information in connection with history of environmental impact assessment: Fodor 1996; Bándi 1989; Radnai 1994.
[12] See further documents related to the environmental impact assessment of the Paks II. investment on the homepage of MVM Paks II., under the following reference: MVM Paks II. Zrt. c.
[13] Kocsis 2017.
[14] In further: Kvt (Act on General Rules of Environmental Protection).
[15]According to Point 9. 4. § of the Kvt., use of the environment means an activity involving the utilization or loading of the environment or a component thereof that is subject to an official licence.
[16] From the viewpoint of the topic the importance of it is the following. The new blocks will be refrigerated by water of the Danube, which could affect on heat load and water quality of this river seriously, for this reason it is one of the most important parts of the environmental impact assessment (and it also have some connections with rules of the VKI).
[17] Horváth 2011, 55.
[18] Governmental Decree No. 314/2005 (XII.25.) regarding the procedures of environmental impact assessment and the single procedure of authorization of utilization of the environment, Annexes 1-2.
[19] See further rules on KHV: Csák 2008, 57–64.
[20] In further: KHV (environmental impact assessment).

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Environmental impact assessment of the Paks II. investment was a really long procedure, it took for approximately five years, as you can see in the figure hereinafter (see Figure No. 1.). One of the reasons of this long duration, is that a long time is needed to make the environmental impact assessment study,[21] to make the necessary examinations, and statistics, furthermore public consultations and public hearings also must be made in Hungarian and international level as well. Another reason of this long duration was the frequent activity of the 'greens'. Although the investment got the I. instance permit on 29.09.2016, after less than a month the Energiaklub Szakpolitikai Intézet és Módszertani Központ Egyesület and the Greenpeace Magyarország Egyesület appealed against this decision at Pest County Government Office (they referred some shortcomings of the document).[22] However the Government Office approved the I. instance decision (18.04.2017.). Nevertheless, on 26th of May the two abovementioned 'green' organizations appealed again at the Administrative and Labour Court of Szekszárd. Since it would had been appealed at Pécs District Office of Baranya County Governent Office, it arrived 30 days later at the Administrative and Labour Court of Pécs, thus it rejected the appeal without hearing on 5.10.2017.[23]

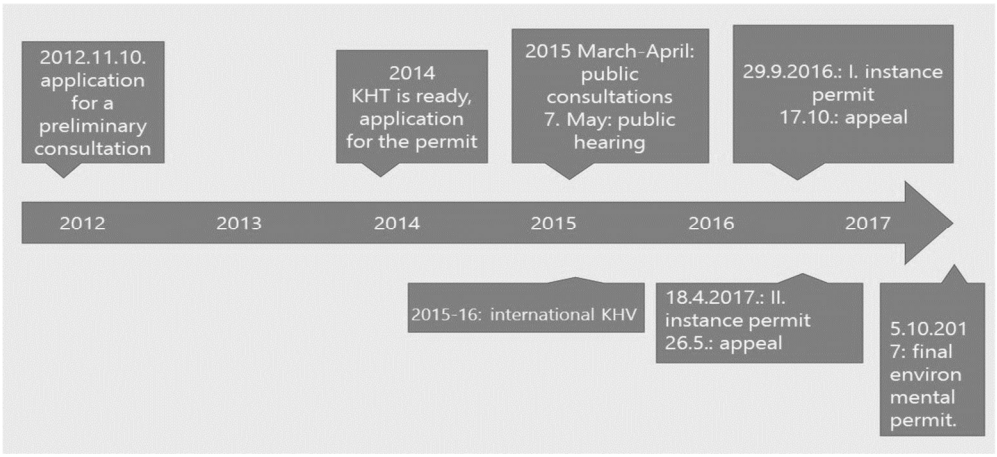

Figure No. 1.
Environmental impact assessment procedure of the Paks II. investment[24]

[21] In further: KHT (environmental impact assessment study).
[22] See further information: Koritár 2016.
[23] Demokrata 2017.
[24] Own figure made on the basis of No. 78-140/2016. Decision of Baranya County Government Office (in further: I. instance permit).

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3. Legal analysation of certain parts of the Paks II. KHT from the aspect of the Water Framework Directive

First of all, we have to enhance, that one of the most important environmental objective of the VKI is to achieve the good status of surface waters and groundwaters. Hungary would had to achieve this goal until 2015, but the deadline could be lengthened in certain cases. Nevertheless, the final deadline is 2027; however in an exceptional case, when the natural conditions are obstacles of achieving this objective, this goal is not compulsory. In 2010 the Hungarian water basin management plan[25] was set out in order to achieve this objective. This VGT was examined by the Committee during the procedure of drafting the Water Strategy of the European Union.[26] Since during this procedure the Committee gave some country specified recommendations in order to the effective execution of the water basin management plans. In case of Hungary several positive evaluation were set in the document, however some significant shortcomings were enhanced too, like reliability of status reviews, reasonableness of applying exemptions, and financing uncertainties.[27]

Thus from water protection aspect one of the most important viewpoints which must be taken into consideration under the investment is not to jeopardise the achievement of good status of surface waters and groundwaters.

For this reason during the environmental impact assessment of Paks II, in the course of examining the quality of the Danube and other neighbouring surface waters, the following documents were taken into consideration, and been harmonised with the KHT: (a) Governmental Decree No. 314/2005 (XII.25.) regarding the procedures of environmental impact assessment and the single procedure of authorization of utilization of the environment; (b) No. 2000/60/EC Water Framework Directive, the Hungarian National Water Basin Management Plan; (c) KvVM Decree No. 31/2004 (XII. 30.), moreover (d) results of former researches of the field; (e) No. 8588-32/2012 DdKTVF official opinion conceived during the preliminary consultation; (f) results of examinations of biological elements.[28]

The KHT of Paks II. has a separated part on Water quality assessment of the Danube and other surface waters pursuant to the Water Framework Directive (Part 12.). The concrete examination which was made from 2012 until 2013, covered the *Dunaföldvár-Baja* section of the Danube, and the followings: (a) *Kondor-tó*; (b) *Halász-tavak*; (c) *Faddi-Holt-Duna*; (d) *Tolnai-Északi-Holt-Duna*; (e) *Sió-csatorna*.[29] Parallelism with the VKI was examined by the following methods: (a) test methods of physical and chemical parameters in water; (b) phytoplankton testing; (c) phytobenthos testing; (d) macrophyte testing; (e) assessment of macroscopic aquatic invertebrates (macrozoobenthos); (f) assessment of fishes.[30]

[25] In further: VGT (Water Basin Management Plan).
[26] See further information related on this topic: Szilágyi J E 2013.
[27] Szilágyi J E 2014, 74.
[28] MVM Paks II. Zrt. b, 139.
[29] MVM Paks II. Zrt d, 16–17.
[30] MVM Paks II. Zrt d, 22–39.

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According to the KHT these are the potential impact factors during the construction period with regard to the examined waters: (a) groundwater extracted during groundwater depression; (b) treated municipal wastewater discharge; (c) the erection of a recuperation hydropower plant.[31] As a result the KHT set that the nature of these impact factors is short term, poor, low significance, which can be avoided by monitoring, giving a proposed duration to take the suggested measures, and establishing buffer capacity on Danube wildlife.[32]

According to the KHT impact factors in the period of standard operation are as follows: (a) water extraction from the Danube; (b) discharge of warmed up cooling water into the Danube; (c) discharge of purified process waste water; (d) discharge of purified municipal wastewater; (e) discharge of purified rainwater into the Danube.[33] The nature of these impact factors is long term, medium strength or poor, and low significance. Only cooling water discharge heat load was classified as 'high significance' – to manage it the KHT set the following suggested measures: (a) auxiliary cooling as necessary; (b) in low water stage summer periods standard operating maintenance, shut down.[34]

To sum it up, according to the KHT, from water protection aspect the most significant impact factor during the operation of the nuclear power plant is its thermal discharge. Related restrictions are set in Annex I to Directive 2006/44/EC of the European Parliament and the Council: (a) in the case of cyprinid waters, the temperature measured downstream of a point of thermal discharge (at the edge of the mixing zone) must not exceed the unaffected temperature by more than 3°C; (b) thermal discharges must not cause the temperature downstream of the point of thermal discharge (at the edge of the mixing zone) to exceed 28°C. According to Hungary the general rules are set forth in Government Decree 220/2004. (VII.21.) on the protection of surface water quality and Decree 28/2004. (XII.25.) KvVM on the emission limits of water pollutants and the rules governing the application of these limits. The limit values for the thermal load of the aquatic environment must be specified based on independent analysis, taking into account the sensitivity and load bearing capacity of the recipient water, with a view to preserve the desirable chemical and ecological balances. No limitation is given on heat emission and exposure to heat in Decree 10/2010. (VIII.18.) VM on surface water contamination limits and the rules governing their application. Table I of Annex 4 in Decree 6/2002. (XI.5.) of the Minister of Transport and Water Management (KvVM) on the contamination of surface waters designated as drinking water sources or reserves as well as surface waters protected for fish sets the related limits. To this date, only a few surface waters have been categorized; these are listed in Annex 7 to Decree No. 6/2002. (XI.5.) of the Minister of Transport and Water Management.

[31] MVM Paks II. Zrt d, 206.
[32] MVM Paks II. Zrt d, 213.
[33] MVM Paks II. Zrt d, 214.
[34] MVM Paks II. Zrt d, 255.

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The Danube is not included here, thus according to the relevant statute (as of June 7, 2014),[35] it does not qualify as a fish water. The classification of the Danube, or some of its sections, as a fish water of some type should be based on ecological impact assessment studies.[36]

High priority facilities, and more specifically, nuclear power plants, are subject to a special regulation set forth in Decree 15/2001. (VI.6.) of the Minister for the Environment on the emission of radioactive elements to the air and to waters during the application of nuclear power, and on their control. According to (1) subparagraph of article 10. *"At high priority sites the following rules must be observed for protecting surface waters and water bearing formations against thermal contamination: (a) the temperature difference between the water to be discharged and the recipient water must not exceed 11°C, or 14°C if the temperature of the recipient water is less than +4°C; (b) the temperature of the recipient water measured anywhere in a section 500 meters downstream of the point of discharge must not exceed 30°C."* Based on (1) subparagraph of Article 66 of Kvt, other heat load limits required for protecting water quality are determined by the supervisory authority in the course of licensing the use of the environment.[37]

During the environmental permitting procedure several comments were submitted in connection with achievement of good status of surface waters and groundwaters (exactly on water of the Danube). Among them the most important ones are as follows: (a) during the I. instance permitting procedure a comment was submitted on that as a result of the KHT, the Danube does not belong to fresh waters. According to the comment, goal of the user of the environment was to avoid the 1,5-5 ^{0}C temperature change limit on fish species.[38] (b) During the II. instance permitting procedure several comments were submitted on water quality of the Danube by the Greenpeace and the Energiaklub. Among them two comments must be emphasized: (b/1) comment on lack of flood bed management plan; (b/2) thermal and nuclear discharge on Danube may harm the regulations of the VKI and the VGT on duty to maintain the good status of surface waters and groundwaters.[39]

Despite the abovementioned comments, first and second instance permits were legal. That can be reasoned by the followings (in line with the comments above): (a) The KHT does not set that the Danube does not belong to fresh waters. However because of the abovementioned justification it does not belong to fishy waters, therefore its legal regulation is not compulsory on the investment.[40] From this aspect the environmental permit is irrefragable. But in my opinion the KHT should have a brief analysation on alteration of the investment if Danube would appear in this legal list, and it would become fishy water.

[35] According to the current version of the Decree, Danube does also not belong to fishy waters.
[36] MVM Paks II. Zrt. b, 59.
[37] MVM Paks II. Zrt. b, 60.
[38] I. inst. permit, 98.
[39] No. PE-KTF/203-40/2017. Decision of Pest County Government Office (in further: II. instance permit), 21.
[40] I. inst. permit, 98–99.

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Since it could be possible that by the effect of environmental changes or activity of environmentalist Danube will belong to fishy waters, and changing of this legal categorization would have serious effects on the investment, ad absurdum it could be an obstacle of it, and it would have serious impacts on Hungary's energy supply as well. (b/1) The flood bed management plan is not a requirement of the environmental permit, it is required to made in the construction period of the investment. Moreover, although it is not part of the KHT, the I. instance authority drew the investor's attention to its posterior necessity.[41] (b/2) The KHT sets that liquid radioactive wastewaters will be managed separately.[42] Furthermore wastewaters emerged during operation of the nuclear power plant shall be discharged after strict chemical and radiological qualification. Thus effect of these emission will be irrelevant from radiation protection.[43] Consequently, according to the KHT good status of water of the Danube is not threatened by radioactive emissions. Moreover, according to the concerned authority, harm of VKI shall not be settled, because this Directive does not contain regulation on radiation protection.[44] (However in my opinion, although the VKI does not contain regulation on radiation protection, the investor shall take all the necessary measures to achieve and maintain good status of the Danube, and not to threaten its wildlife, since that is the goal of the Directive. Beyond this, behaviour of the investor is also reasonable, since it could lengthen the procedure, and ad absurdum it could be an obstacle of the investment.) Moreover the KHT comprises methods on thermal discharge of the Danube and results of the examinations, analysation of aggregated effects of the operating and the new blocks – and according to the concerned authority it is sufficient.[45]

4. Water licence procedure

As I mentioned at the beginning of the study, one of the reasons of development of nuclear power plant of Paks, is the technical obsoletion, and termination of the operating permit. Thus, in order to the effective and safe energy production, reactors of Paks II will be constructed by the most developed technology, these are the so called generation 3+ reactor blocks. According to the plans, Paks II. will be consisted of VVER-1200 type blocks developed by Russia, they will operate by pressurized water technology. Presentation of this technology is not an objective of the study (see it briefly in figure no. 2.), but it is important to note, that as the name intimates it, it is operating by water – water is needed to refrigerate the power plant, end to produce steam, which is required to energy production.[46]

[41] II. inst. permit, 26.
[42] II. inst. permit, 26.
[43] II. inst. permit, 49.
[44] II. inst. permit, 49.
[45] II. inst. permit, 51.
[46] Zsiga 2018.

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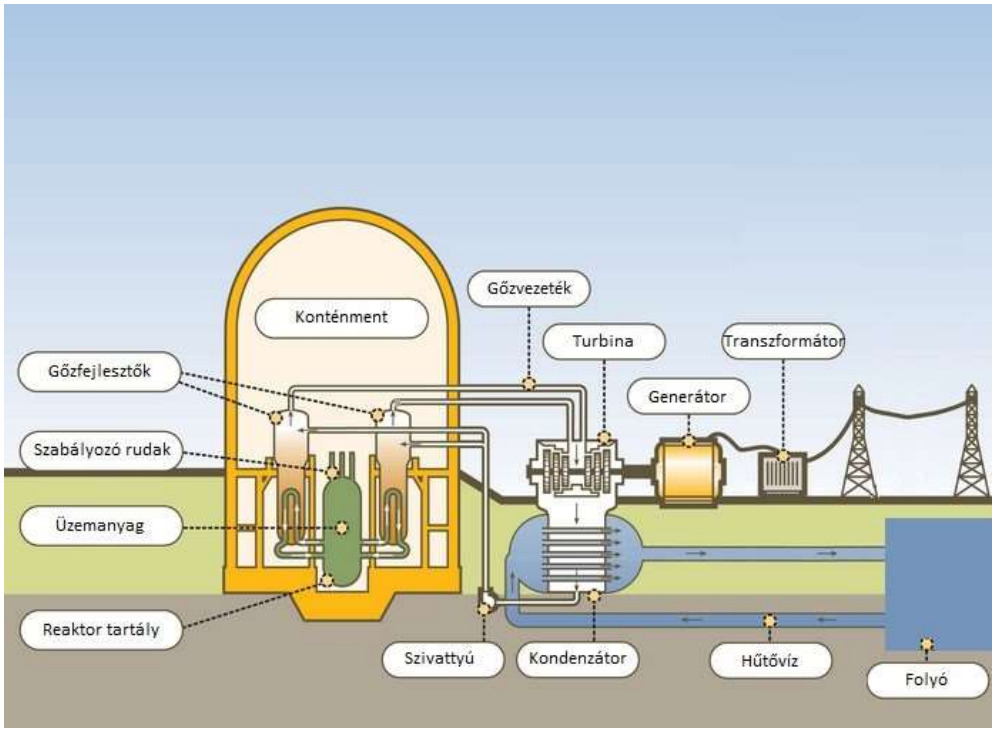

Figure No. 2.
Flowsheet of operation of the VVER-1200 type blocks[47]

Because of the location of the power plant, and the flow regime of the river, Danube is the most practical solution for it.[48] However this activity requires hydraulic facility, and use of water, which is subject to authorization according to subparagraph (1) of article 28/A of Act LVII of 1995 on Water Management.[49]

Abovementioned paragraph of the Vt. sets the periods of water licence procedure as well. These are as follows: (a) water licence in principle; (b) establishing permit; (c) operating permit; (d) termination permit (although this type of the permits does not related on establishing, or operating, but it is important to assess, that termination is also subject to authorisation – with regard to environmental interests[50]); (e) special permit is needed to use hydrocarbon extraction target water facilities to extract thermal water – this permit is also issued by the water authority.

[47] Original Figure: Zsiga 2018.
[48] Before construction of the Nuclear Power Plant of Paks several other field were examined – eg. near the Tisza, however it were not suitable because of the low flow regime of the Tisza. – Portfolio 2017.
[49] In further: Vt. (Act on Water Management).
[50] See further rules on termination § 4/A of Decree No. 72 of 1996 (V. 22.) of the Government on water rights and duties of the water authority.

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At this present from the aspect of the Paks II. investment, the first three permitting period[51] has importance.

According to the legal regulation, acquisition of *water licence in principle* is not required to an investment like this, this is only an option.[52] This kind of licence sets technical solutions and conditions of the planned water management objective in general, thus it does not authorize to do the exact water work, construct water facilities, or use water.[53] One of the key features of the water licence in principle, that its content is binding to the water authority during the establishing permit procedure (if the legal regulation and the conditions on which the decision based on do not change).[54]

MVM Paks II. Zrt. applied for water licence in principle at Fejér County Disaster Management Directorate on 13. 12. 2014.[55] After that, the Zrt. was called for additional information, and it gave it, therefore the company acquired the licence on 12.06.2017.[56]

With regard to the present status of the project we have to emphasize the subparagraph (6) of article 2 of the abovementioned Governmental Decree. It settles: *„water licence in principle is in effect until acquisition of the establishing permit of the declared water work or water facility, but maximum for a two-year-period. Its effect can be lengthened once with one year, if the conditions on which the licence is based did not change."* Therefore, the water licence in principle is in effect until 2019, or in case of lengthen until 2020. According to the original plan, construction permit must be applied for in September of 2018, however it has not been applied yet (one of its reasons is the long examinations of the EU).[57] If it will be applied for in 2019, the licence will be in effect. However, in case of further continuance, the licence will not be in effect, when the investment will get the establishing permit. From the viewpoint of law, it is not an obstacle for the investment, since water licence in principle is not a condition for the establishing permit. Nevertheless, content of the licence will not binding for the water authority – and it could cause some difficulties, and more continuance. Although it is just a hypothetic situation, but it worse to draw attention to that, because continuance of the investment may cause higher costs. For example, if the construction will not be finished until 15.03.2026, Hungary must start the repayment of the loan came from Russia before finishing the project.[58] In my opinion, as a result of this process, Hungary may be forced to take additional loan because of the higher costs.

[51] However in the future there will be a termination permit procedure too, but it does not connected closely to this topic, therefore this study does not examine it in details.
[52] § 28/A (2) of Gov. Decree 72/1996. (V.22.).
[53] § 2 (1) of Gov. Decree 72/1996. (V.22.).
[54] § 2 (4) of Gov. Decree 72/1996. (V.22.).
[55] Aszódi 2015.
[56] Eck 2018, 28.
[57] Világgazdaság 2018.
[58] The reason of it is the regulation of the Article 3 of the Act XXIV of 2014.

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In the procedure of water licence the next step is acquisition of the *establishing permit* after the water licence in principle. Acquisition of this permit is compulsory – according to the related Government Decree, this duty is on the investor, owner, or asset manager.[59] Beside giving other rights and duties, this kind of permit authorises its owner to do the declared water work, or to build the declared water facility.[60] Its effect has a declared duration, however under certain conditions it can be lengthened.[61]

According to the current status of the Paks II investment, next step of the project will be the application for construction permit. This is a really significant 'permit package' of the project, since by the acquisition of that the exact physical construction can be started. Thus water establishing permit procedure will be a part of this period, therefore its documents have not been accessed by the public yet.

Operating permit can be acquired in the third period of water licence procedure. It is necessary to the operation of the declared water facility, or use of water. This permit shall be applied by the person, who is subjected to the rights and duties arising from operation of the water facility or use of water.[62] In this permitting period especially the followings[63] must be examined: (a) fulfilment of prescriptions set in the establishing permit and in the plans; (b) results of the trial operation with regard to prescriptions of Governmental Decree No. a 72/1996. (V. 22.), and the establishing permit; (c) in case of water work utilities, operating rules and other related legal prescriptions; (d) details on observing the legal prescriptions on use of water; (e) in case of water facility built on groundwaters, technical documentation settled in special legal regulation. Content of operating permit is also declared in the related Governmental Decree. According to this regulation, these are the minimum compulsory elements of the permit (depending on the subject of the procedure, and the features of the facility): *„(a) the declared water facility, and use of water; (b) conditions of operation, rights and duties arising from it; (c) legal title of operation – when the entitled person of the establishing permit and the operating permit is not the same; (d) effect of the permit; (e) legal duty or exemption on payment of water resource fee regarding to use of water."*[64] In its decision water authority shall evaluate especially water management function of the facility, technical parameters, and other conditions related on operation set in the permit.[65]

[59] § 3 (1) of Gov. Decree 72/1996. (V.22.).
[60] § 3 (6) of Gov. Decree 72/1996. (V.22.).
[61] § 3 (7) of Gov. Decree 72/1996. (V.22.).
[62] § 5 (1) of Gov. Decree 72/1996. (V.22.).
[63] § 5 (3) of Gov. Decree 72/1996. (V.22.).
[64] § 5 (4) of Gov. Decree 72/1996. (V.22.).
[65] § 5 (5) of Gov. Decree 72/1996. (V.22.).

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5. Conclusions

Accordingly, my hypothesis (Paks II investment does not endanger the good status of water of the Danube, and thus it does not harm related rules of the VKI) is justified. In my study I examined the following questions: (a) Has the environmental impact assessment study got parts on examining whether the good status of water of the Danube is in safe? (b) Were there any comments in connection with good status of water of the Danube during the first or second instance environmental permitting procedure? (c) What kind of comments were submitted? (d) With regard to the comments, were the first and second instance permissions legal? (e) What are the potential risk factors during the water licence procedure?

To sum it up, environmental impact assessment study of the Paks II investment analyses maintenance of good status of water of the Danube in details. Especially Chapters 11. (Modelling of the Danube river morphology and Danube heat load) and 12. (Water quality assessment of the Danube and other surface waters pursuant to the Water Framework Directive) of the environmental impact assessment study[66] deal with this topic. During the procedure of environmental permitting (during the first and second instance procedures alike) several comments were submitted related on good status of water of the Danube. These are the most important topics (a) classification of water of the Danube (fresh water, fishy water), (b) flood bed management plan, (c) effects of radioactive emissions, thermal discharges related on water of the Danube. Despite of the submitted comments first and second instance permits were legal alike – the environmental impact study has no serious shortcomings, and it does not harm the examined regulations of the Water Framework Directive.

However one of the statements of the study (which is related on the first comment) must be enhanced here as a conclusion. Since in my opinion the KHT should have a brief analysation on alteration of the investment if Danube would appear in this legal list, and it would become fishy water. Since it could be possible that by the effect of environmental changes or activity of environmentalist Danube will belong to fishy waters, and changing of this legal categorization would have serious effects on the investment, ad absurdum it could be an obstacle of it, and it would have serious impacts on Hungary's energy supply as well. Furthermore this legal alteration may cause extra costs as well.[67]

Chapter 12 of the KHT examines the correspondence with the VKI. This chapter declares several impact factors in constructional and standard operation period alike. However these factors do not threaten the Danube and other waters in case of taking the suggested measures.

[66] Parts of the environmental impact study, and the simplified public summary can be found under the link mentioned in the bibliography: MVM Paks II. Zrt. a.

[67] These costs are able to increase costs of the whole investment as well, and it could take effects on return of the investment. It is an important element of the topic of state aids examined by the European Commission.

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Another great topic of this study is the water licence procedure, thus it analyses its periods in details (which are compulsory in case of Paks II as well) – these are the followings: (a) water licence in principle; (b) establishing permit; (c) operating permit. According to the current status of the project, it has already acquired the water licence in principle, at present documentation of application for establishing permit is being made, and approximately in 2020 the investor will apply for the operating permit too.

According to this process, another statement of the study must be emphasized here. Since with regard to legal regulations, the water licence in principle is in effect until 2019, or in case of lengthen until 2020. According to the original plan, construction permit must be applied for in September of 2018, however it has not been applied yet (one of its reasons is the long examinations of the EU). If it will be applied for in 2019, the licence will be in effect. However, in case of further continuance, the licence will not be in effect, when the investment will get the establishing permit. From the viewpoint of law, it is not an obstacle for the investment, since water licence in principle is not a condition for the establishing permit. Nevertheless, content of the licence will not binding for the water authority – and it could cause some difficulties, and more continuance. Although it is just a hypothetic situation, but it worse to draw attention to that, because continuance of the investment may cause higher costs. For example, if the construction will not be finished until 15.03.2026, Hungary must start the repayment of the loan came from Russia before finishing the project. In my opinion, as a result of this process, Hungary may be forced to take additional loan because of the higher costs.

To summarize the results of the study, in case of correct procedures of the future periods of the investment, it does not threaten the achievement of good status of water of the Danube (and other neighbouring surface and groundwaters).

However, this study raises several other research topics – for example the abovementioned environmental protection fields (in connection with the environmental permitting procedure): (a) air protection; (b) noise protection; (c) rules on Natura 2000 areas; (d) other nature conservation related topics; (e) etc. More important topic is the effect of problems of the abovementioned fields on each other, and on the whole investment (form legal aspect). Are there any general consequences which can be useful in the future (with regard to further development of Nuclear Power Plant of Paks, or construction/development of other power plants in Hungary, or from international aspects)? Finally it would be worth to examine environmental permitting procedures on development of nuclear power plants in foreign countries[68] (e.g. Finland, Poland, Slovakia, etc.).

[68] See a similar topic: Fodor 2010.

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