



Republika Srbija

MINISTARSTVO ENERGETIKE,
RAZVOJA I ZAŠTITE ŽIVOTNE SREDINE

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za razvoj



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Resilient nations.*

CONSTRUCTION OF PLANTS AND ELECTRICITY /HEAT GENERATION FROM HYDRO-GEOTHERMAL SOURCES IN THE REPUBLIC OF SERBIA

Guide for Investors

IZGRADNJA POSTROJENJA I PROIZVODNJA ELEKTRIČNE/TOPLLOTNE ENERGIJE IZ HIDROGEOTERMALNIH IZVORA U REPUBLICI SRBIJI

Vodič za investitore

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English

Srpski



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Guide for Investors

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Foreword

Serbia's significant renewable energy potential is still not sufficiently exploited due to a number of reasons that cause a lack of investment activity in renewable energy sector. The Government of the Republic of Serbia has recently accepted the Decision of the Ministerial Council of Energy Community on the promotion of the use of renewable energy by means of transposition of the EU Directive 2009/28/EC on renewable energy. This decision sets an ambitious goal for Serbia to increase the share of renewable energy in gross final energy consumption to 27% by 2020, with respect to baseline of 21.2% in 2009, which will lead to intensive investment activities in the sector in the forthcoming period.

Based on the Agreement for the provision of support services with the Ministry of Energy, Development and Environmental Protection under the auspices of the "Policy Advice on Renewable Energy Sources" project, in 2012 UNDP Serbia focused on promoting investments in renewable energy sector by updating and revising four existing, yet outdated, guides for investors in renewable energy facilities and by elaborating two new guides:

- CONSTRUCTION OF PLANTS AND ELECTRICITY/HEAT GENERATION FROM BIOMASS IN THE REPUBLIC OF SERBIA
 - CONSTRUCTION OF PLANTS AND ELECTRICITY GENERATION IN SMALL HYDROPOWER PLANTS IN THE REPUBLIC OF SERBIA
 - CONSTRUCTION OF PLANTS AND ELECTRICITY GENERATION IN WIND POWER PLANTS IN THE REPUBLIC OF SERBIA
-

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- **CONSTRUCTION OF PLANTS AND ELECTRICITY/HEAT GENERATION FROM HYDRO-GEOTHERMAL SOURCES IN THE REPUBLIC OF SERBIA**
 - **CONSTRUCTION OF PLANTS AND ELECTRICITY GENERATION IN SOLAR POWER PLANTS IN THE REPUBLIC OF SERBIA**
 - **CONSTRUCTION OF THE SOLAR HEATING SYSTEMS IN THE REPUBLIC OF SERBIA**

All guides, with the exception of one, are bilingual and exist in two versions. Six elaborated guides describe in details very complex and comprehensive procedure for constructing energy facilities and performing economic activity of energy generation from renewable sources. The detailed guides are intended primarily for investors and project developers, but also for officials in different competent institutions since the legal procedure is typically cross-sectoral. In five less detailed guides the comprehensive matter is described in a simple and illustrative manner with an idea to bring it closer to the wide range of stakeholders.

The objective of the guides is to encourage and assist the investors interested in Serbian renewable energy sector, but also to identify through a thorough analysis weaknesses and inconsistencies of the legal procedure and to encourage competent institutions to perform legal and institutional improvements. We sincerely hope that the guides will trigger constructive dialogue between numerous stakeholders and thus contribute to their better awareness and mutual understanding, which should ultimately result in favourable environment for investments in renewable energy.

Energy from Geothermal Sources

- Geothermal energy is heat accumulated in dry rocks and fluids of the Earth's crust, as a consequence of constant radiation of heat from the Earth's inner core.
 - Geothermal energy can be:
 - hydro-geothermal energy - accumulated in fluids (water and gases) and
 - petro-geothermal energy - accumulated in solid rocks
-

Hydro-geothermal Energy

- Hydro-geothermal energy is one of the forms of renewable energy sources
 - Hydro-geothermal energy can be used directly, as well as for the generation of heat and electricity
-

Note

It should be underlined that this Guide refers to geothermal plants and that it describes procedures towards competent authorities and institutions, but that certain elements of these procedures, as well as enforcement of certain procedures depends on the size of the structure, site where the structure is constructed, specific power generation technology and other characteristics of the structure for exploitation of geothermal energy.

Plant Classification

- **Energy law**
 - plants fuelled with renewable energy sources - hydro geothermal energy
 - power plants using the combined cycle
- **Rulebook on Criteria for Issuing Energy Permits, Contents of the Application, and Procedure for Issuing Energy Permits**
 - plants for electricity generation of rated capacity from 1 to 10 MW
 - plants for electricity generation of rated capacity over 10 MW
 - plants for production of heat with installed capacity of over 1 MW

Plant Classification

- **Law on Planning and Construction**
 - plants producing energy from renewable energy sources – jurisdiction of the Ministry in charge of civil engineering affairs, or the Autonomous Province
 - combined heat-and-power plants of a capacity below 10 MW – jurisdiction of local self-government units (exceptions)
- **Decree on Requirements for Obtaining Privileged Electricity Producer Status**
 - power plants using geothermal energy in the production process
 - plants (facilities) with combined production, simultaneously producing electricity and heat using fossil fuels (coal or natural gas), waste technological gases with organic fraction or fossil fuels combined with some renewable energy source, waste or waste technological gases with organic fraction.
- **Decree on the List of Projects for which Environmental Impact Assessment (EIA) Study is mandatory and the List of Projects for which EIA Study may be required, makes the following distinction:**
 - Plants having or exceeding the capacity of 50 MW (List I) – for which the Environmental Impact Assessment Study is mandatory, and
 - Plants having the capacity of 1 - 50 MW (List II) – for which the Environmental Impact Assessment Study may be required.

Note

Note: For plants of capacity under 1 MW the impact assessment study may be required if these plants will be constructed in a protected cultural asset or in the protected environs of outstanding cultural assets and in other areas for special use

Relevant Legislation

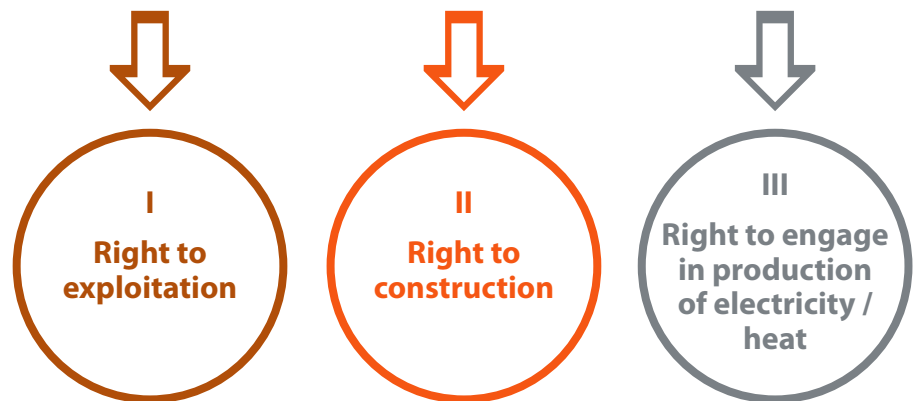
- Energy Law (Official Gazette of the RoS, Nos. 57/11, 80/11, 93/12 and 124/12)
 - Law on Mining and Geological Explorations ("Official Gazette of the RoS No. 88/11)
 - Decision on the Energy Sector Development Strategy of the Republic of Serbia by 2015 (Official Gazette of the RoS, No. 44/05)
 - Decree on the Implementation Program of the Energy Sector Development Strategy of the Republic of Serbia by 2015 for the Period from 2007-2012 (Official Gazette of the RoS, Nos. 17/07, 73/07, 99/09 and 27/10)
 - Law on Planning and Construction (Official Gazette of the RoS, Nos. 72/09, 81/09, 24/11) and 121/12
 - Law on the Spatial Plan of the Republic of Serbia from 2010 to 2020 (Official Gazette of the RoS, No. 88/10).
 - Law on Environmental Protection (Official Gazette of the RoS, Nos. 135/04 and 36/09)
 - Law on Waters (Official Gazette of the RoS, Nos. 30/10 and 93/12).
 - Law on Forests (Official Gazette of the RoS, Nos 30/10 and 93/12)
 - Law on Environmental Impact Assessment (Official Gazette of the RoS, Nos. 135/04 and 36/09)
 - Law on Integrated Pollution Prevention and Control (Official Gazette of the RoS, No. 135/04).
 - and other laws and bylaws...
-

Competent Institutions

- Ministry of Energy, Development and Environmental Protection of the Republic of Serbia – MEDEP
- Local self-government unit - LSU
- Energy Agency - EA
- Republic Geodetic Authority - RGA
- Ministry of Agriculture, Forestry and Water Management – MAFWM
- Ministry of Natural Resources, Mining and Spatial Planning - MNRMSPP
- Republic Hydrometeorological Service - RHMS
- Electric Power Grid of Serbia- EPGS
- Electric Power Industry of Serbia- EPS
- and other institutions relevant in the specific case

Generation of Energy from Hydro-geothermal Resources

The Investor should acquire the following rights:





Acquiring the Right to Explore and Utilize Hydro-Geothermal Resources

I-1 Geological Explorations

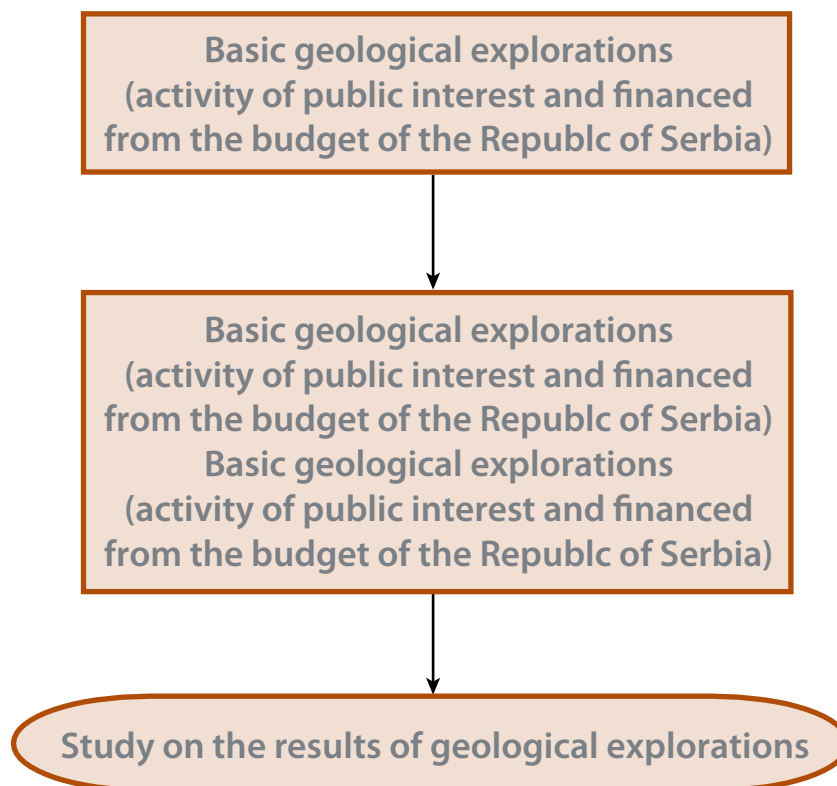
- Design of Geological Explorations
- Approval of Geological Explorations
- Clasification of the Ground Waters and Geothermal Resources

I-2 Utilization of Hydro-Geothermal Energy

- Approval of Exploitation of Mineral Raw Materials
- Approval of Execution of Mining Works
- Mining Facilities and Operation Permit
- License on Mining Rights

I-1

Geological Explorations



Study contains:

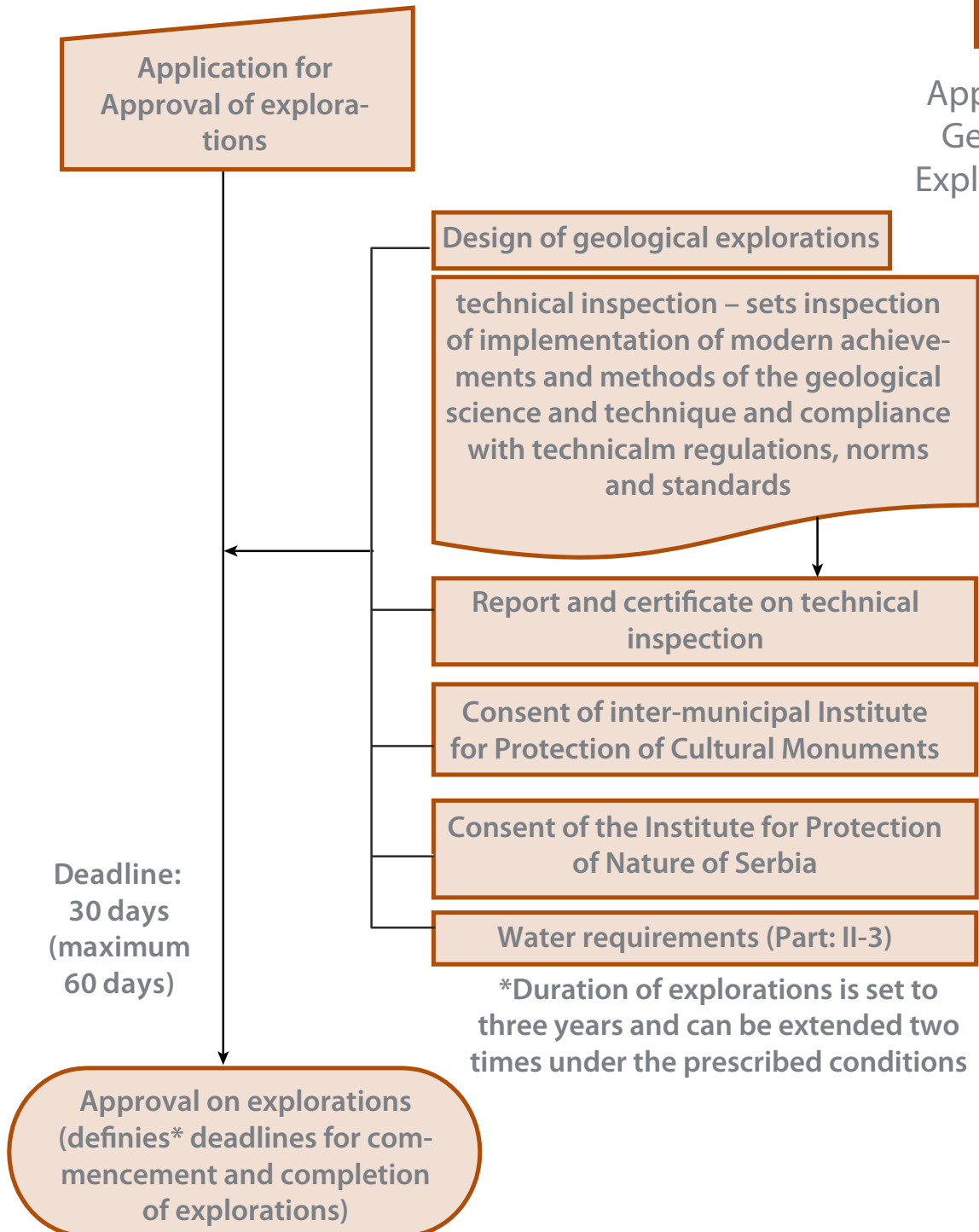
- 1) data on geological and hydrogeological features of the reservoir;
- 2) data on executed exploratory works;
- 3) exploration methods;
- 4) quality of geothermal waters;
- 5) calculation of reserves;
- 6) technical-economical evaluation of the exploitation atc..

Note

Geological explorations are aimed at establishing the hydrogeological potential of the reservoir

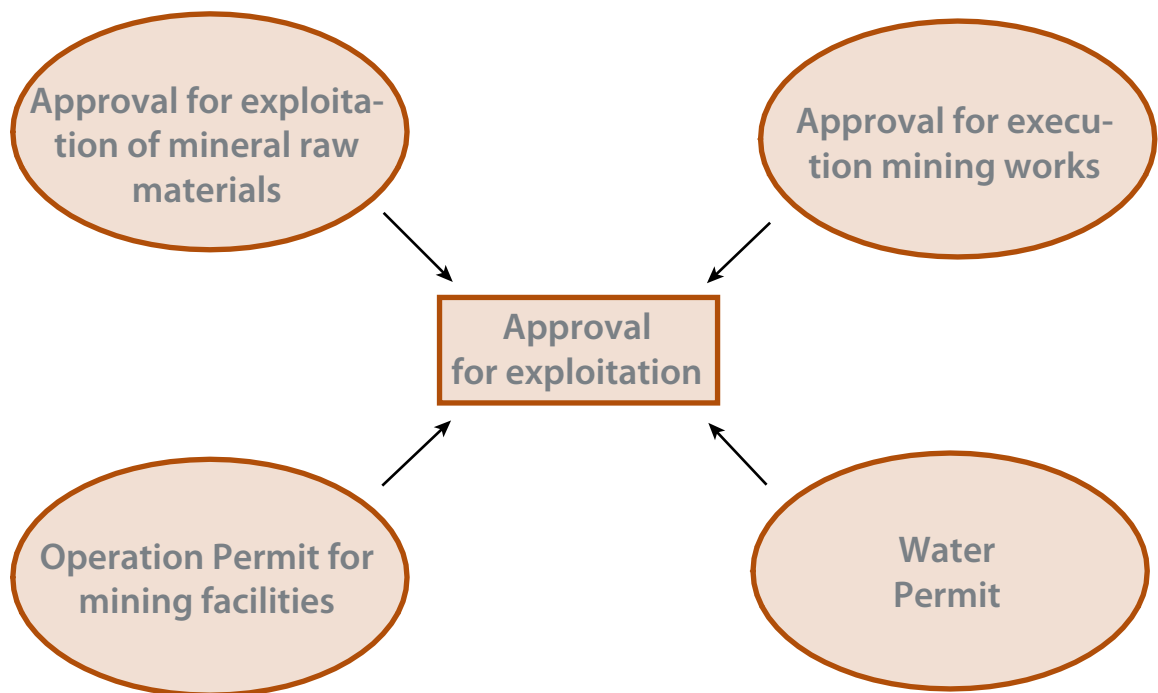
I-1

Approval of Geological Explorations



I-2

Exploitation of Hydro-geothermal Energy

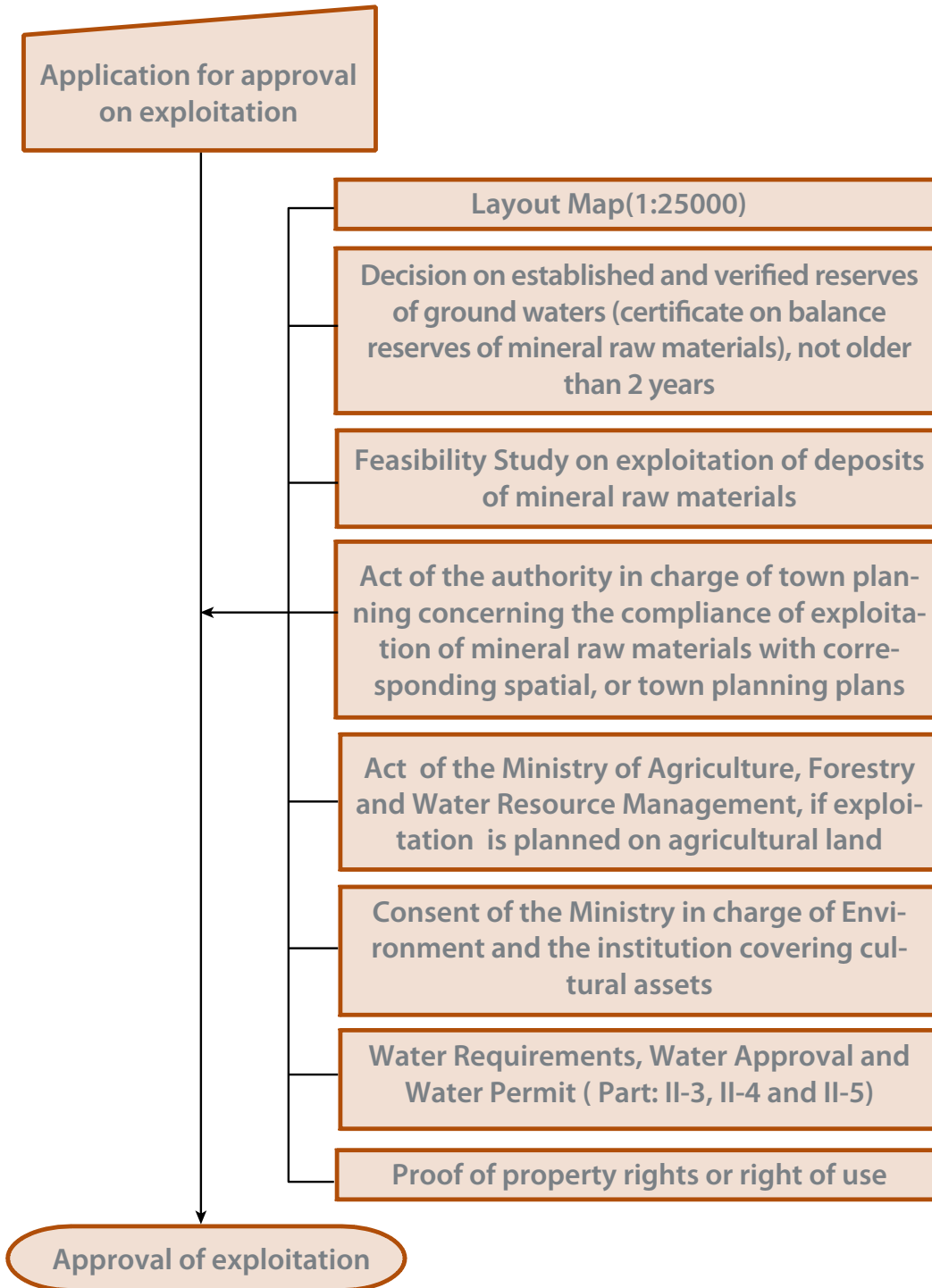


Note

As exploitation of hydro geothermal energy are considered execution of mining works in preparation, drilling, exploitation and utilization of hydro-geothermal resources

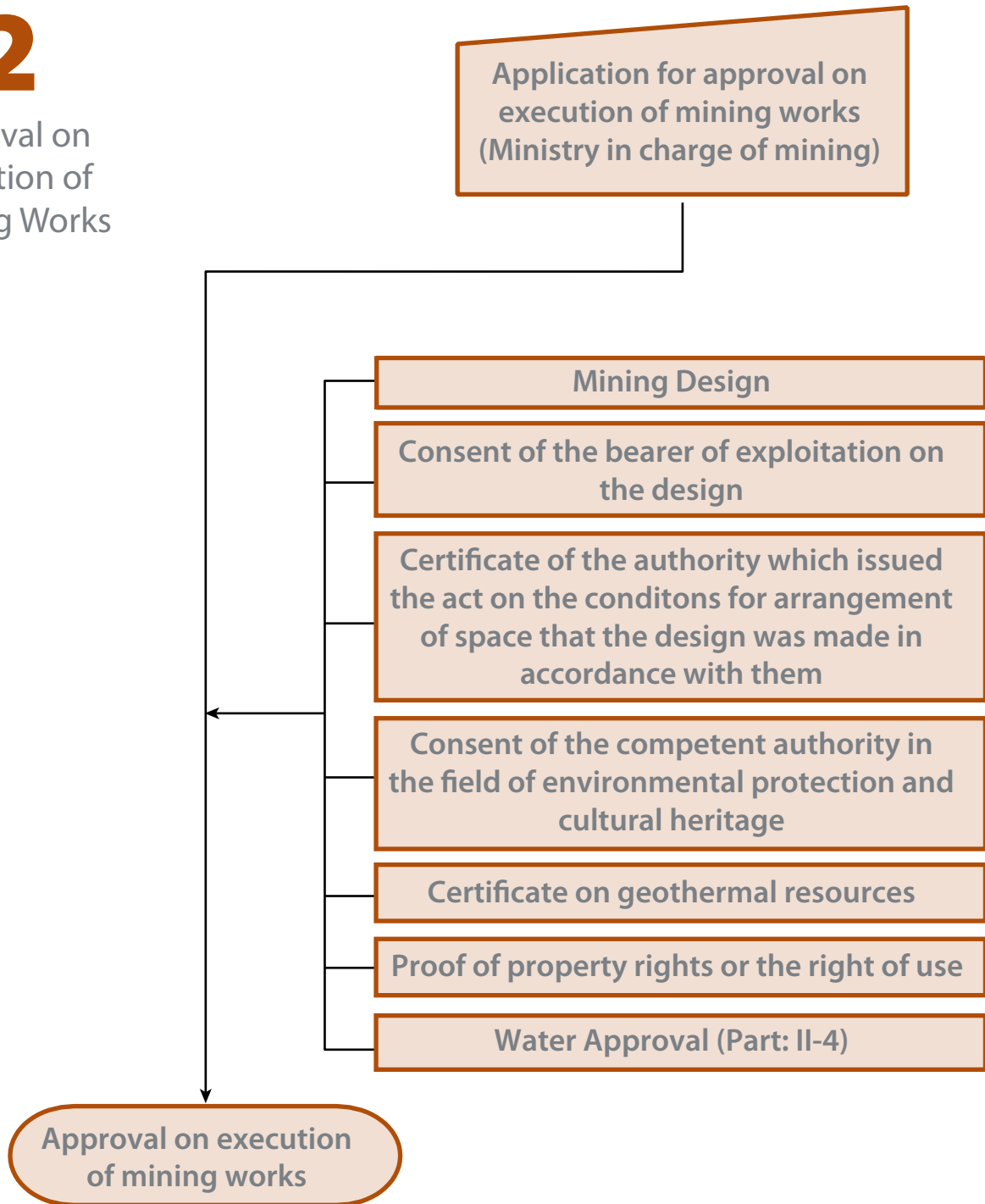
I-2

Approval on Exploitation of Mineral Raw Materials



I-2

Approval on Execution of Mining Works

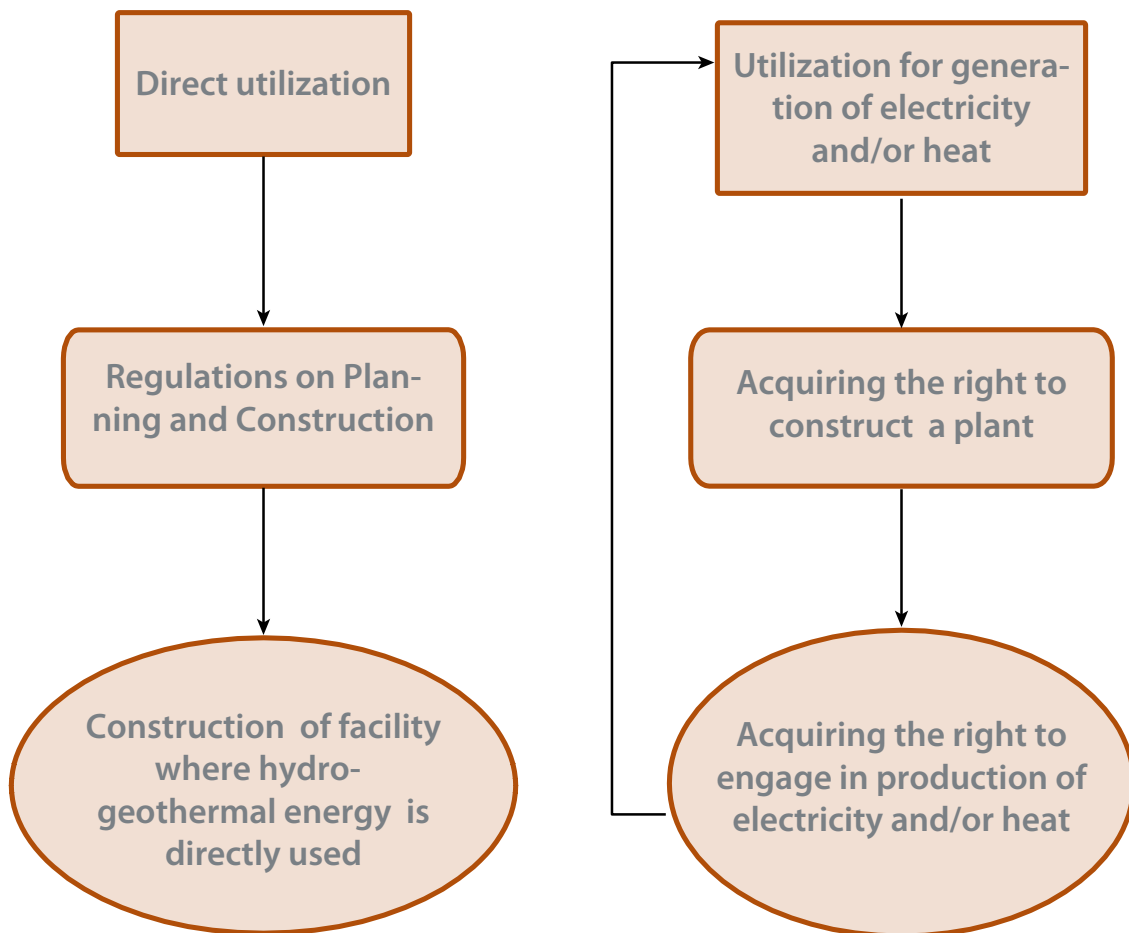


I-3

Mining Facilities

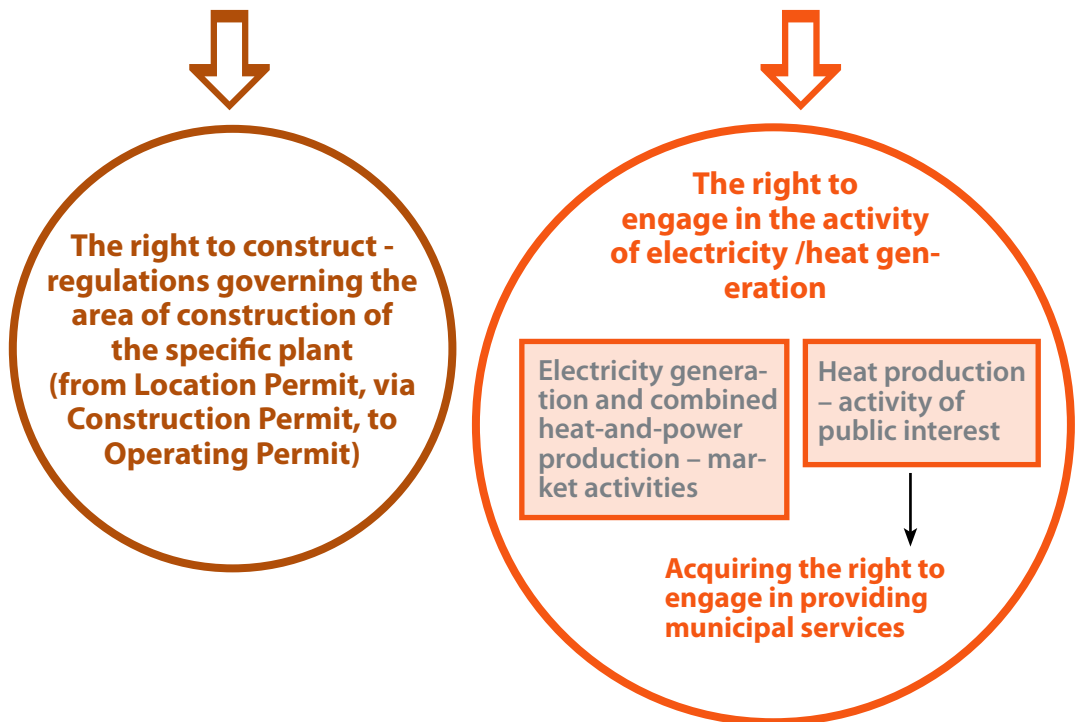
- Mining facilities are directly related to the technological process of exploration, exploitation and transportation of ground waters in the exploitation field, as well as the plants and equipments for exploitation of geothermal resources or other mineral raw materials via piping system and wells
- Operating Permit for mining facilities is a decision issued by the Ministry in charge mining affairs, approving the use of a mining facility or part thereof

Utilization of Hydro-geothermal Energy



Geothermal Plants

The investor shall acquire the following:





Acquiring the Right to Construct a Power Plant

II-1 Obtaining Information on Location

II-2 Obtaining the Energy Permit

Preparation of Pre-feasibility Study with the General Design
Resolving of Property Right Relations / Allotment and Re-allotment
Collection of conditions for designing

II-3 Obtaining the Location Permit*

Development of the Feasibility Study with Conceptual Design / Main Design
Preparation of the Environmental Impact Assessment Study

II-4 Obtaining the Construction Permit

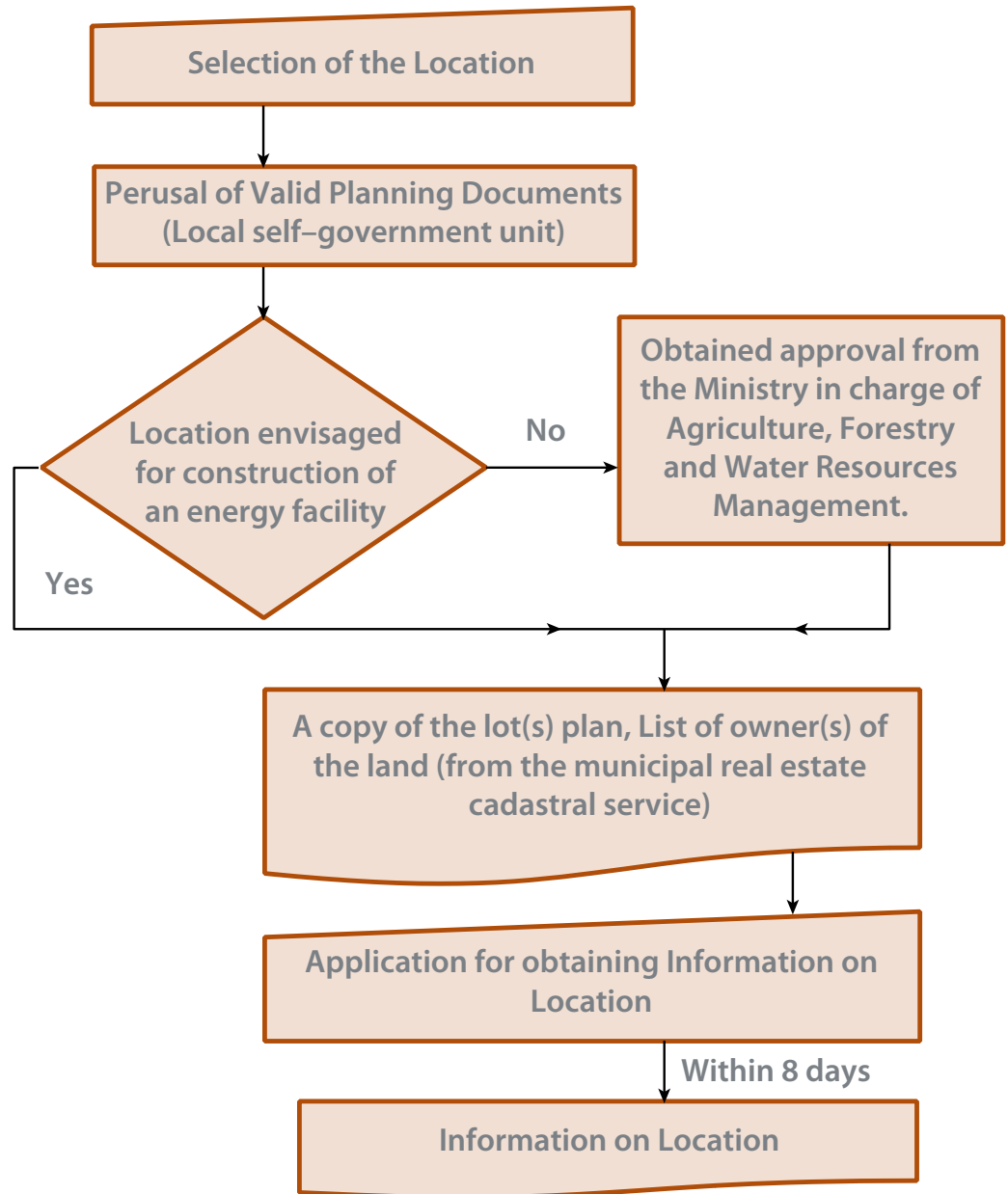
Construction of the Facility

II-5 Obtaining Water Permit and Operation Permit

**can be done before or after obtaining the Energy Permit*

III-1

Selection of the Location, Perusal of Valid Planning Documents and Information on Location

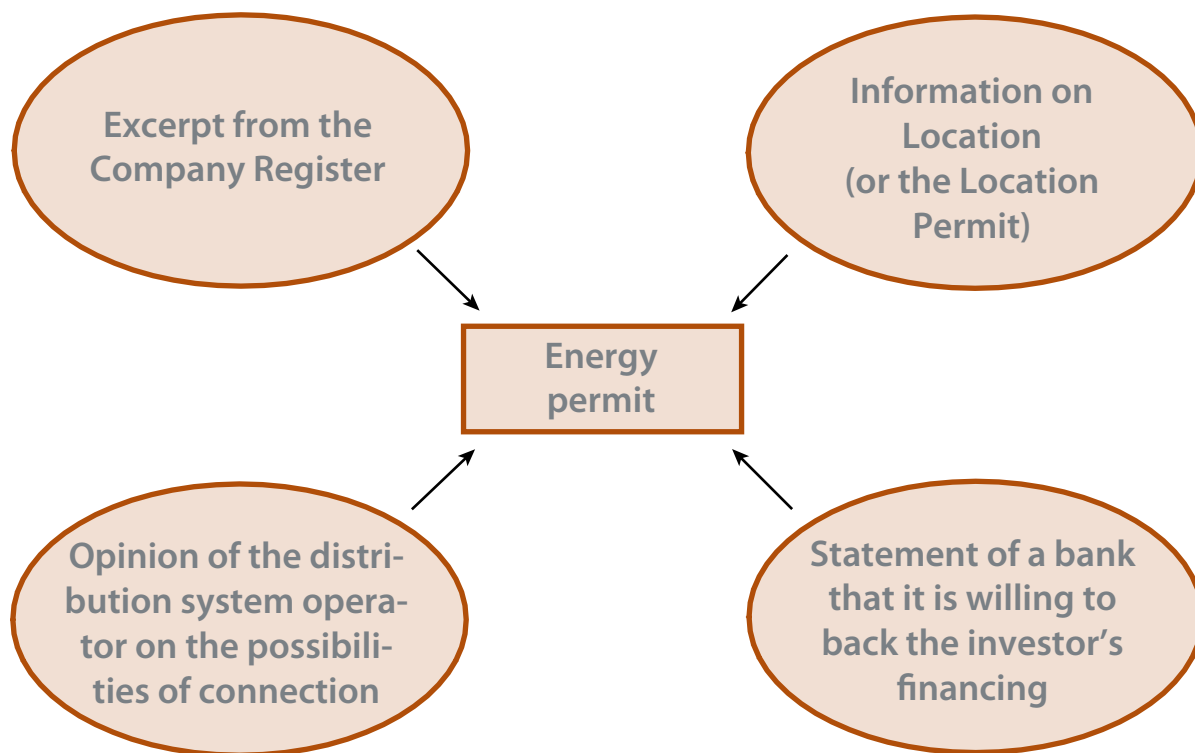


Note

Analysis and selection of the potential location for the construction of a plant are the first step, significantly affecting the preparation of technical documentation for the construction of plant

II-2

Energy Permit

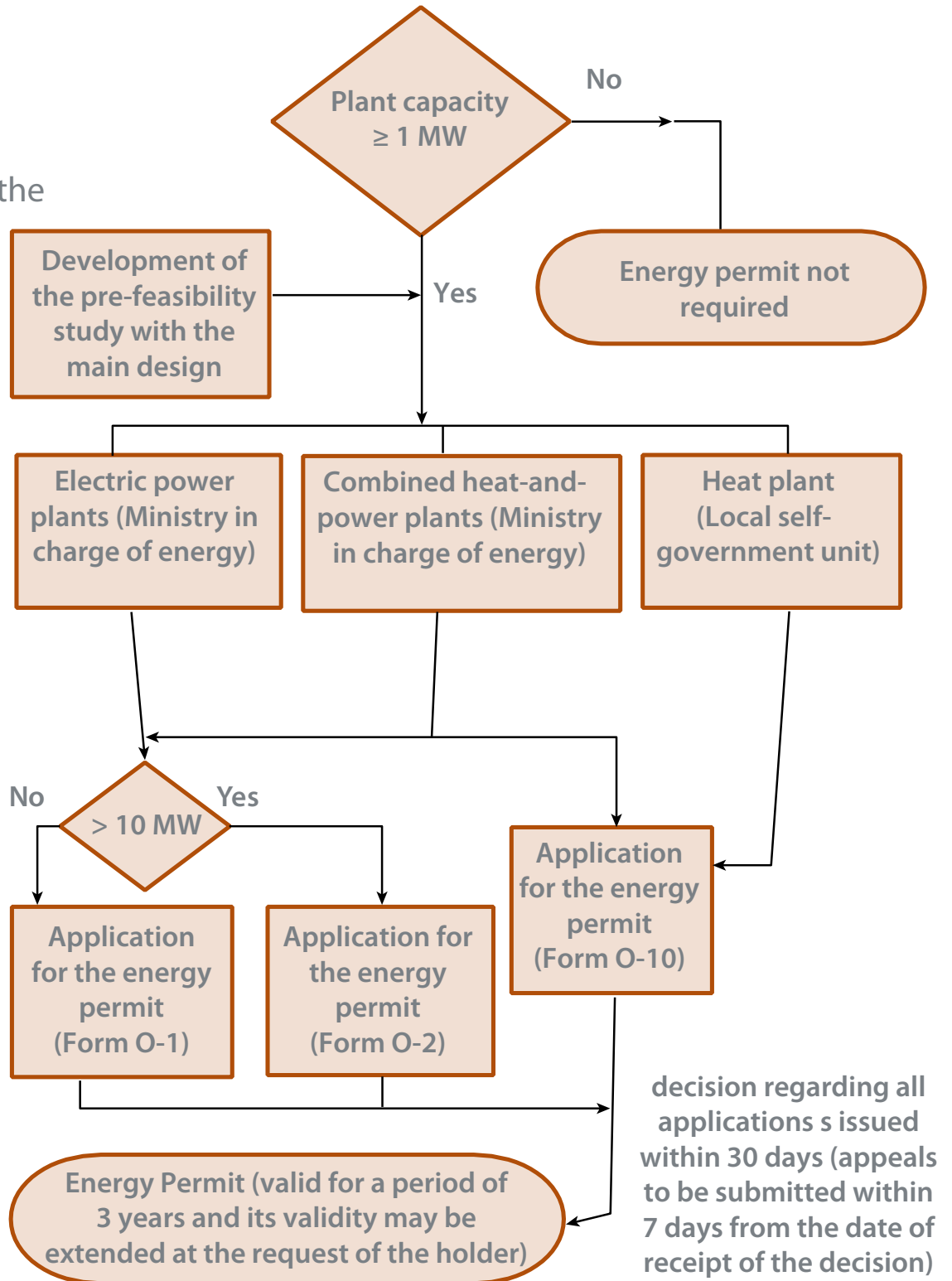


- Energy Permit is a document required for obtaining the Construction Permit, prescribed by the Energy Law
- For plants of capacity up to 1 MW Energy Permit should not be obtained

Note

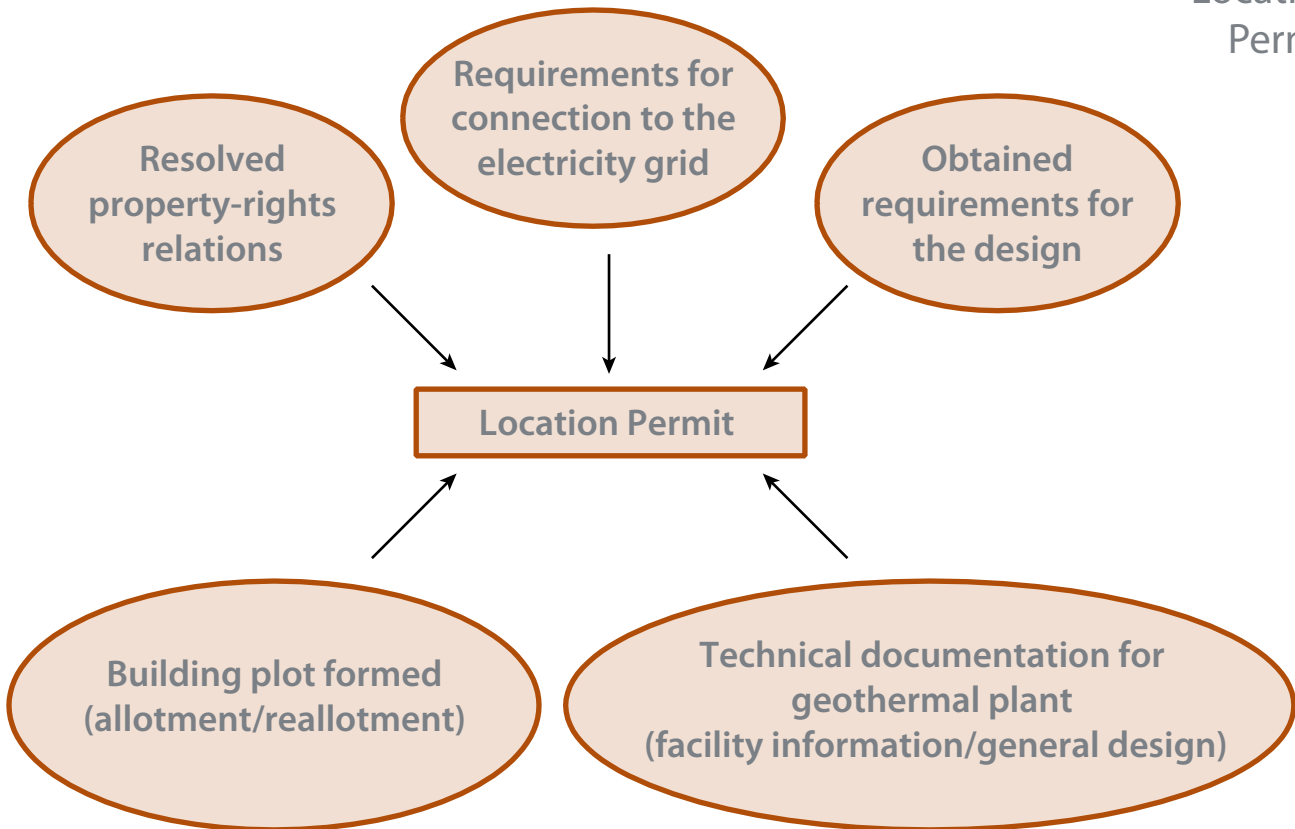
II-2

Obtaining the Energy Permit



II-3

Location Permit

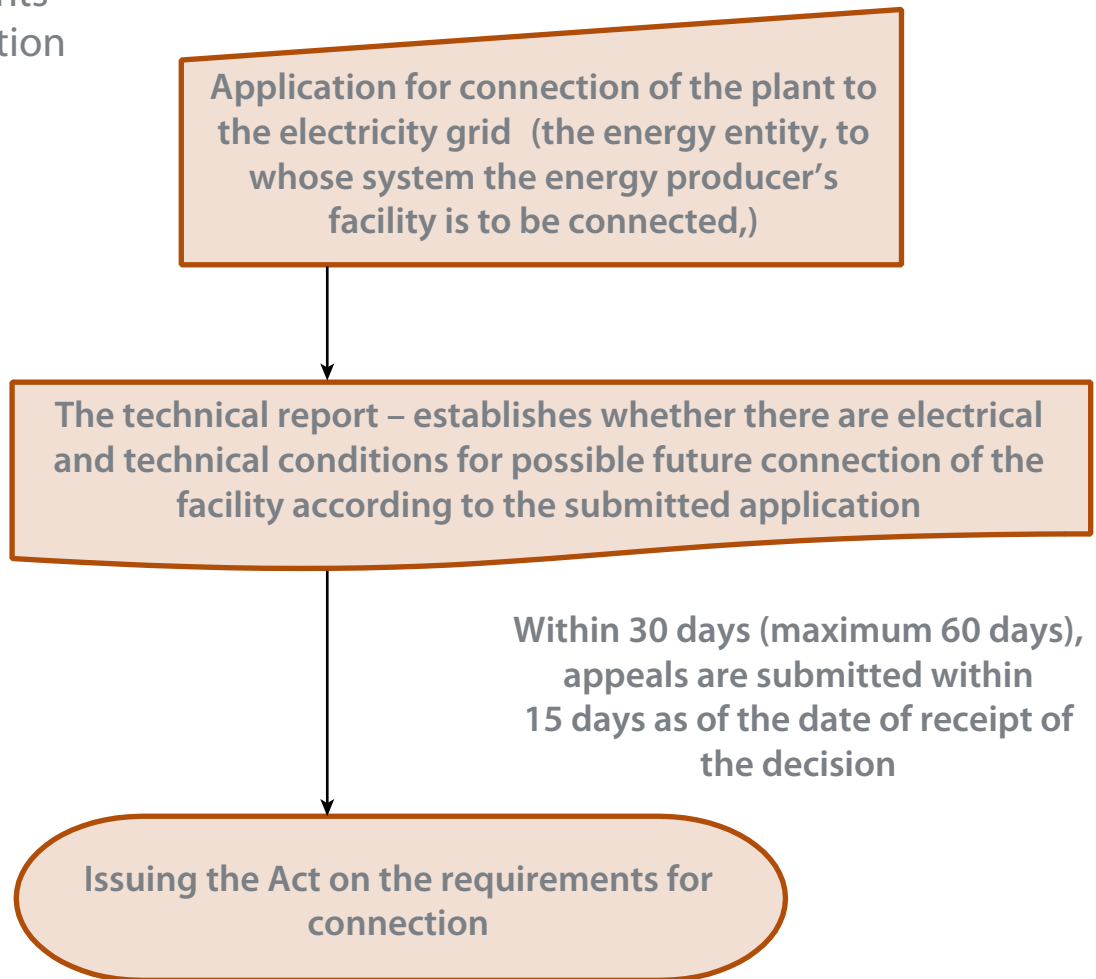


Location Permit is the document which contains all the requirements and data needed for preparation of the technical documentation, main design, in line with the valid planning document

Note

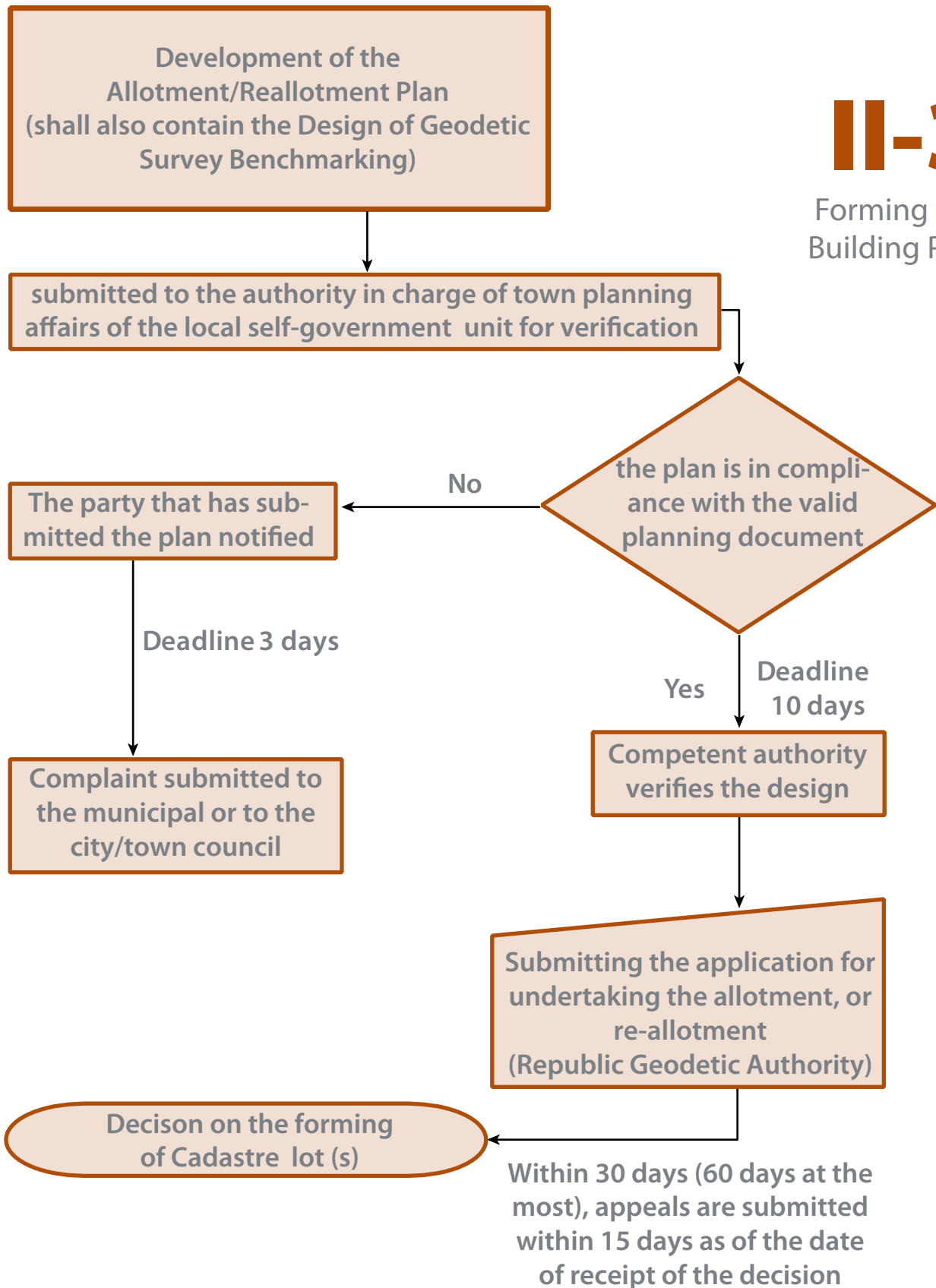
II-3

Requirements for Connection



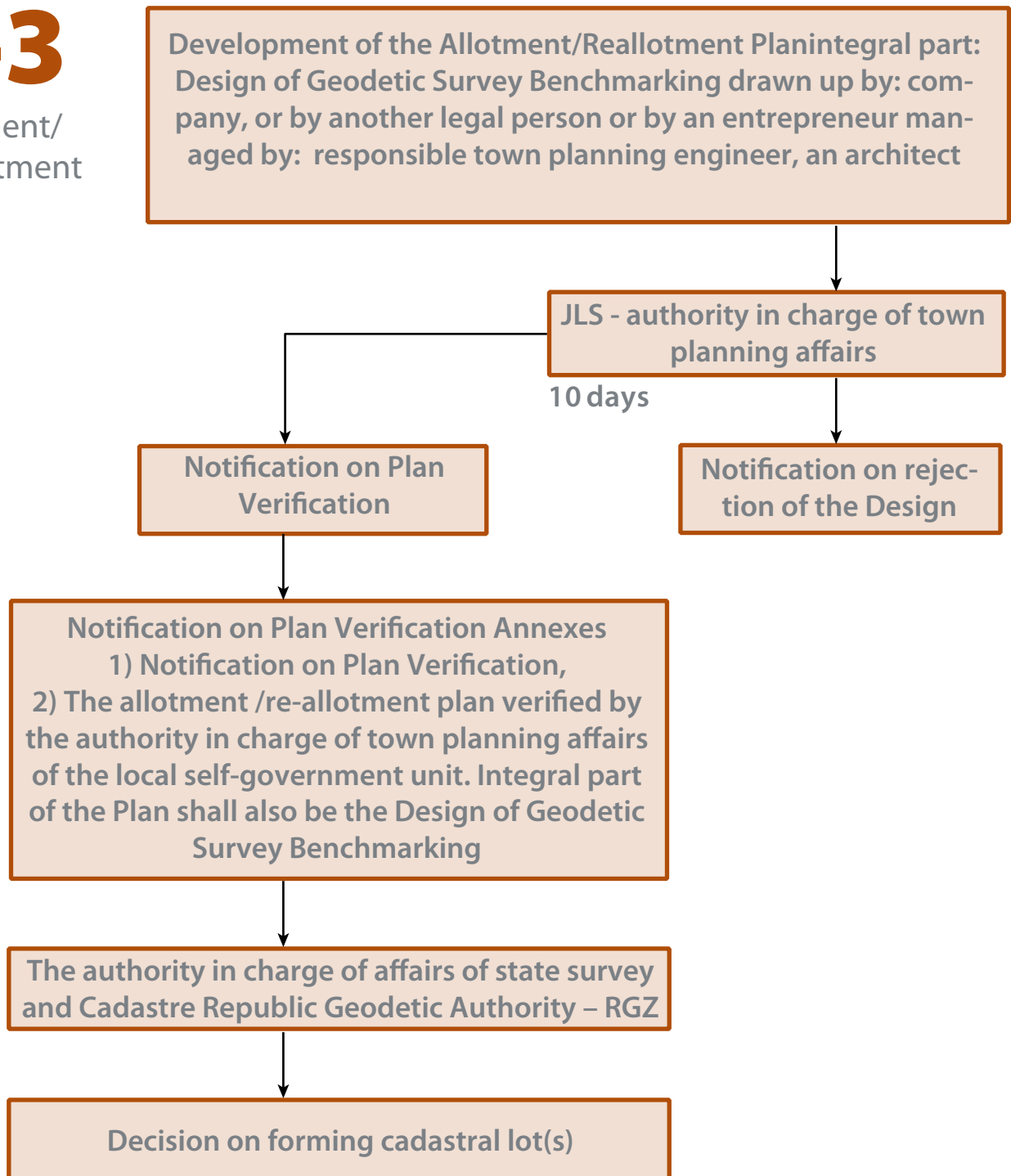
II-3

Forming the Building Plot



II-3

Allotment/ Reallotment



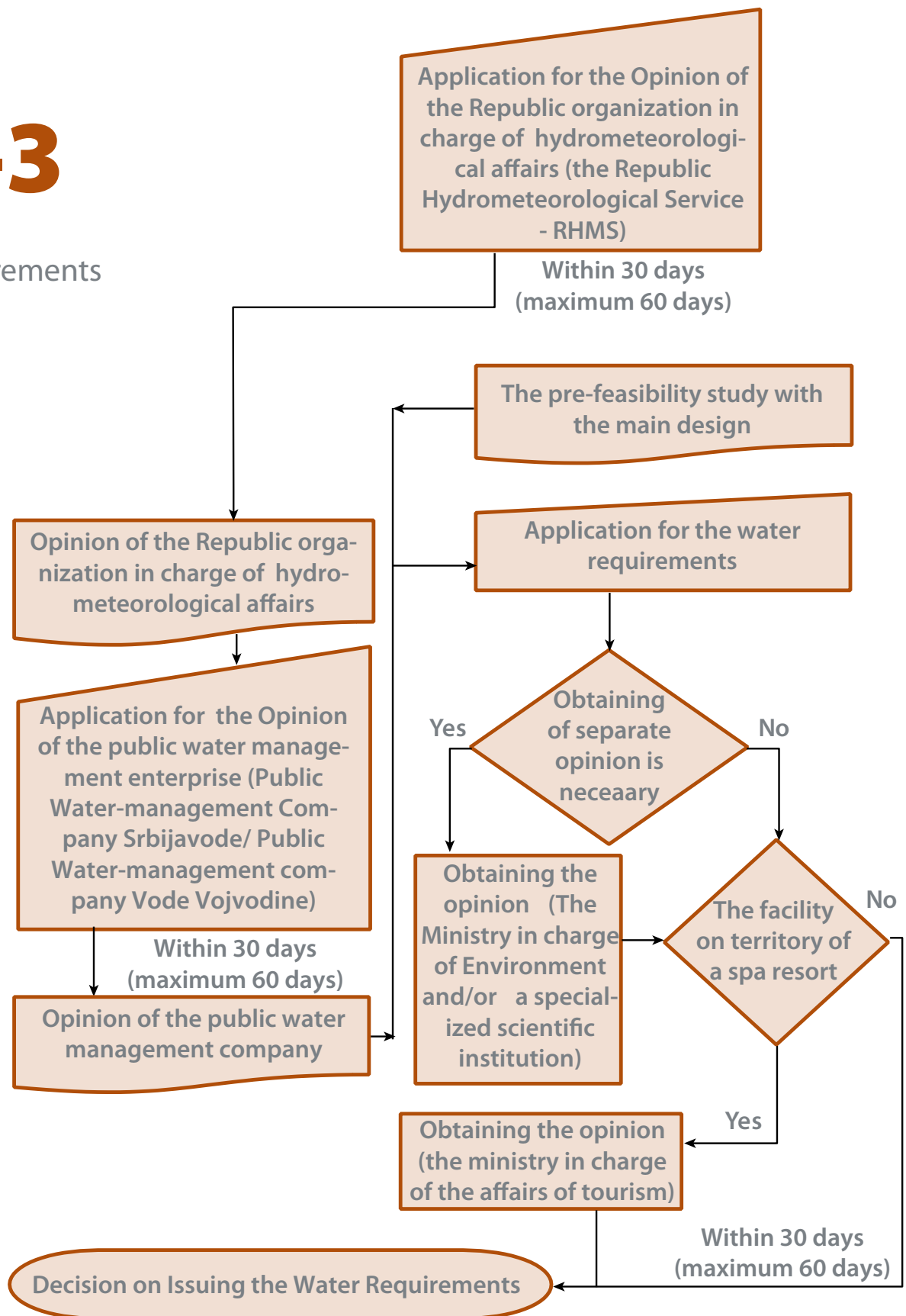
II-3

Water Documents

- Water documents
 - The water requirements (II-3)
 - The water approval (II-4)
 - The water permit (II-5)
 - The water order
- Competence
 - Ministry in charge of water
 - competent authority of the Autonomous Province (If the structure is located in the territory of the Autonomous Province)
 - competent authority of the City of Belgrade (for structures located in the territory of the City of Belgrade)

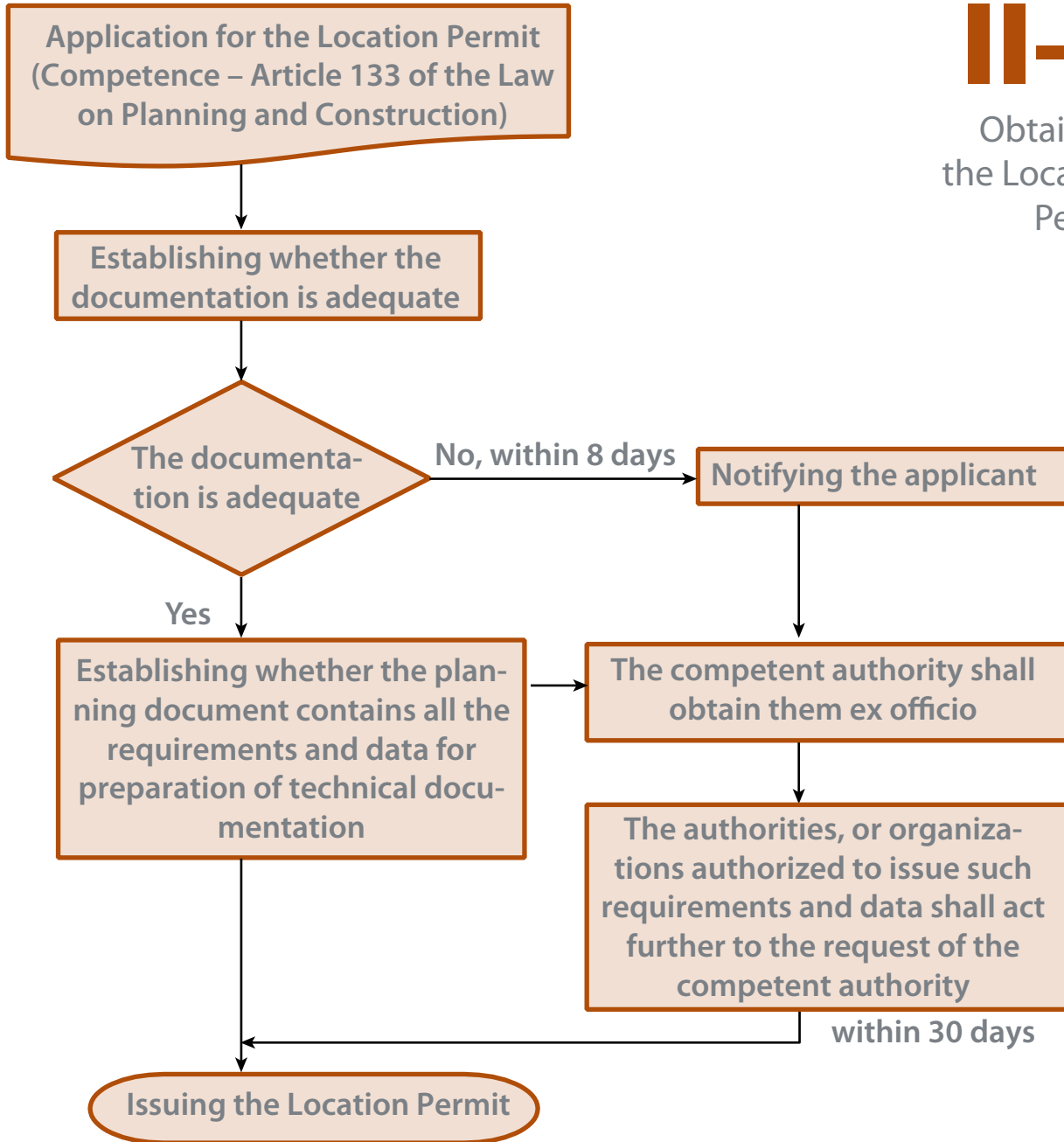
II-3

Water Requirements



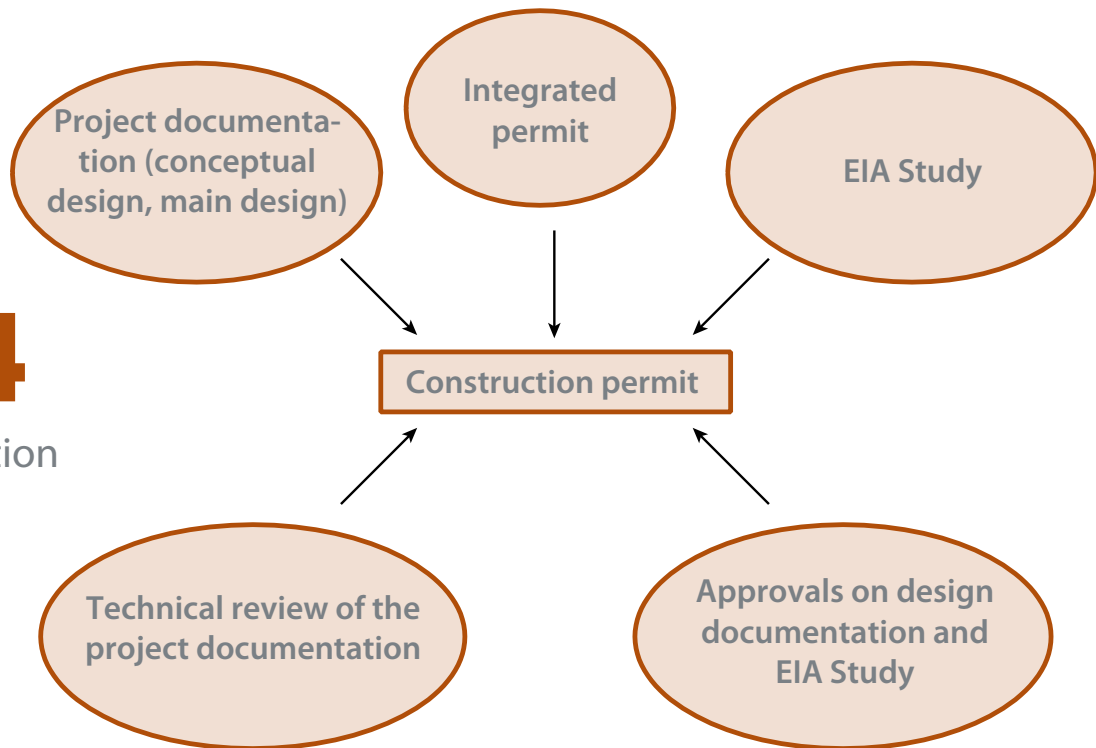
II-3

Obtaining the Location Permit



II-4

Construction Permit



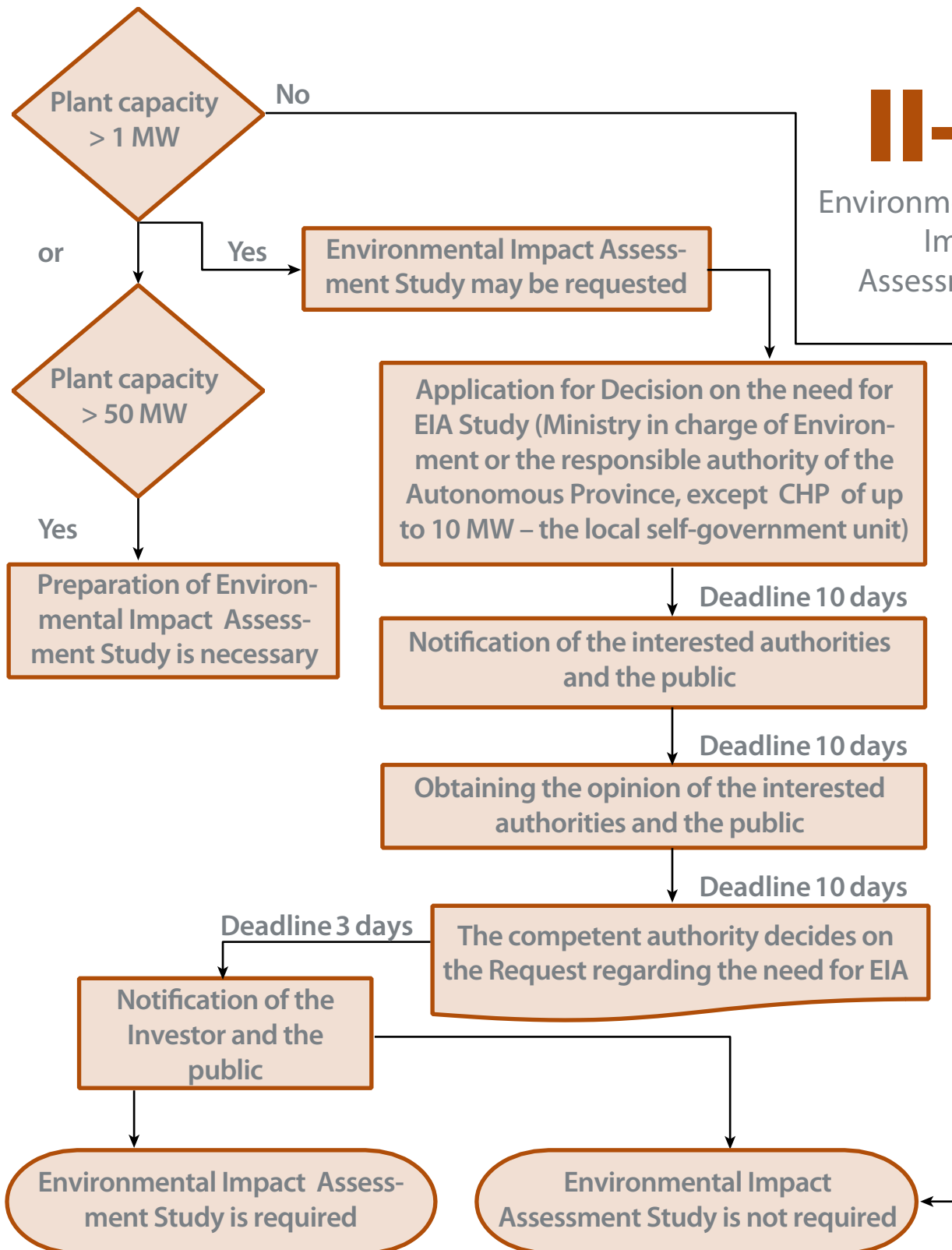
After completion of the review of the main design and a positive report on the completed review, the Application for the Construction Permit shall be submitted to the competent authority referred to in the Article 133 of the Law on Planning and Construction :

- all electricity generating plants and heat producing plants → Ministry in charge of construction affairs /competent authority of the Autonomous Province, except
- combined heat-and-power plants of a capacity below 10 MW → unit of local self-government in charge of construction affairs , if their height does not exceed 50 MW or If they are constructed within the boundaries of outstanding immovable cultural assets and of cultural assets registered in the Lists of the World Cultural and Natural Heritage, of facilities in protected environs of outstanding cultural assets with clearly defined borders of cadastral lots and of facilities in protected environs of outstanding cultural assets in the Lists of the World Cultural and Natural Heritage of facilities in protected areas in compliance with the decision on protection of cultural assets (except conversion of common space into a residential area-flat, or business premises, in the protected environs of outstanding cultural assets and the cultural assets registered in the Lists of the World Cultural and Natural Heritage), as well as of facilities within the boundaries of a national park and of facilities within the boundaries of protection of a protected outstanding natural asset, (except individual houses, agricultural and economy structures and their pertaining infrastructural facilities, built in villages)



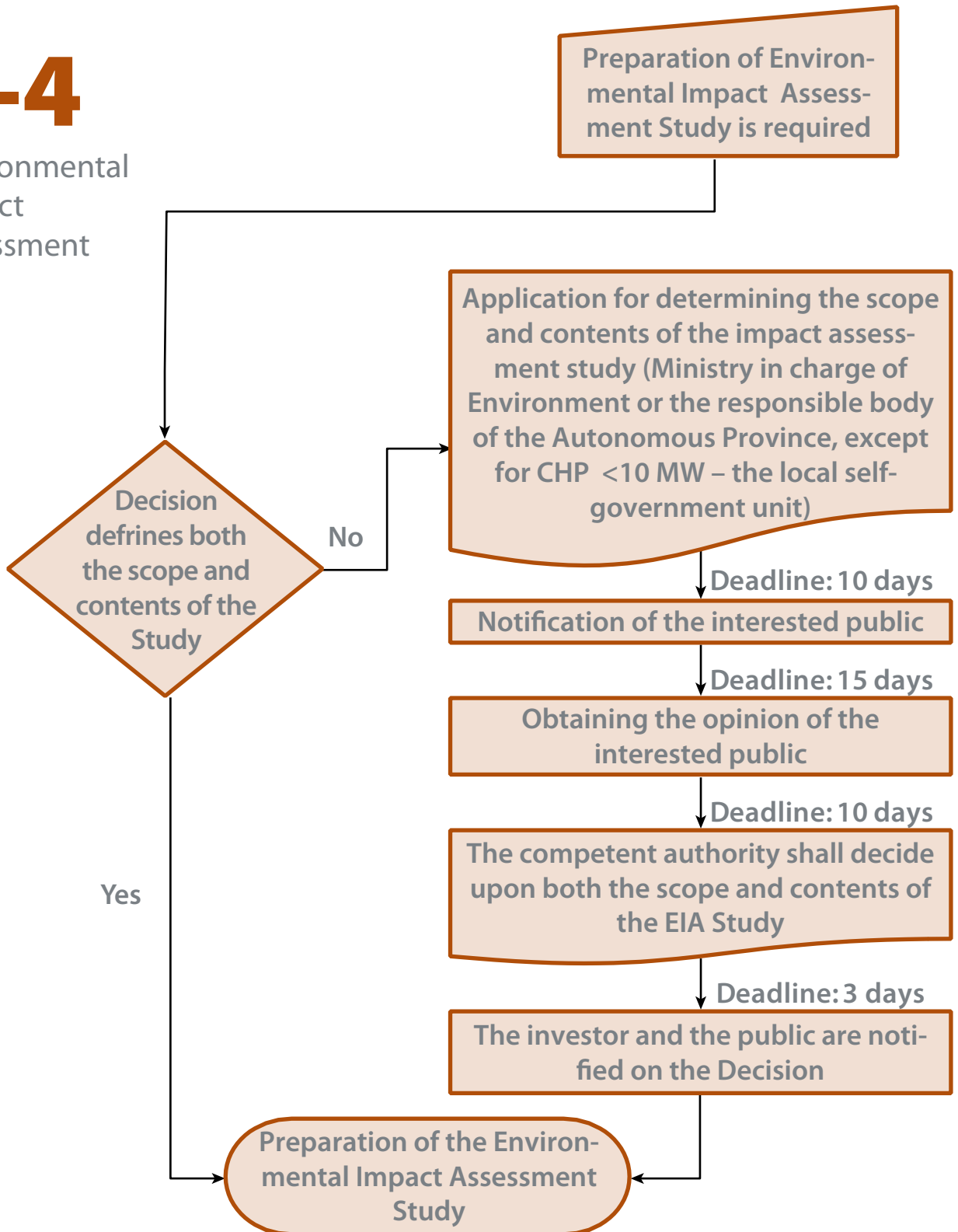
II-4

Environmental Impact Assessment (1)



II-4

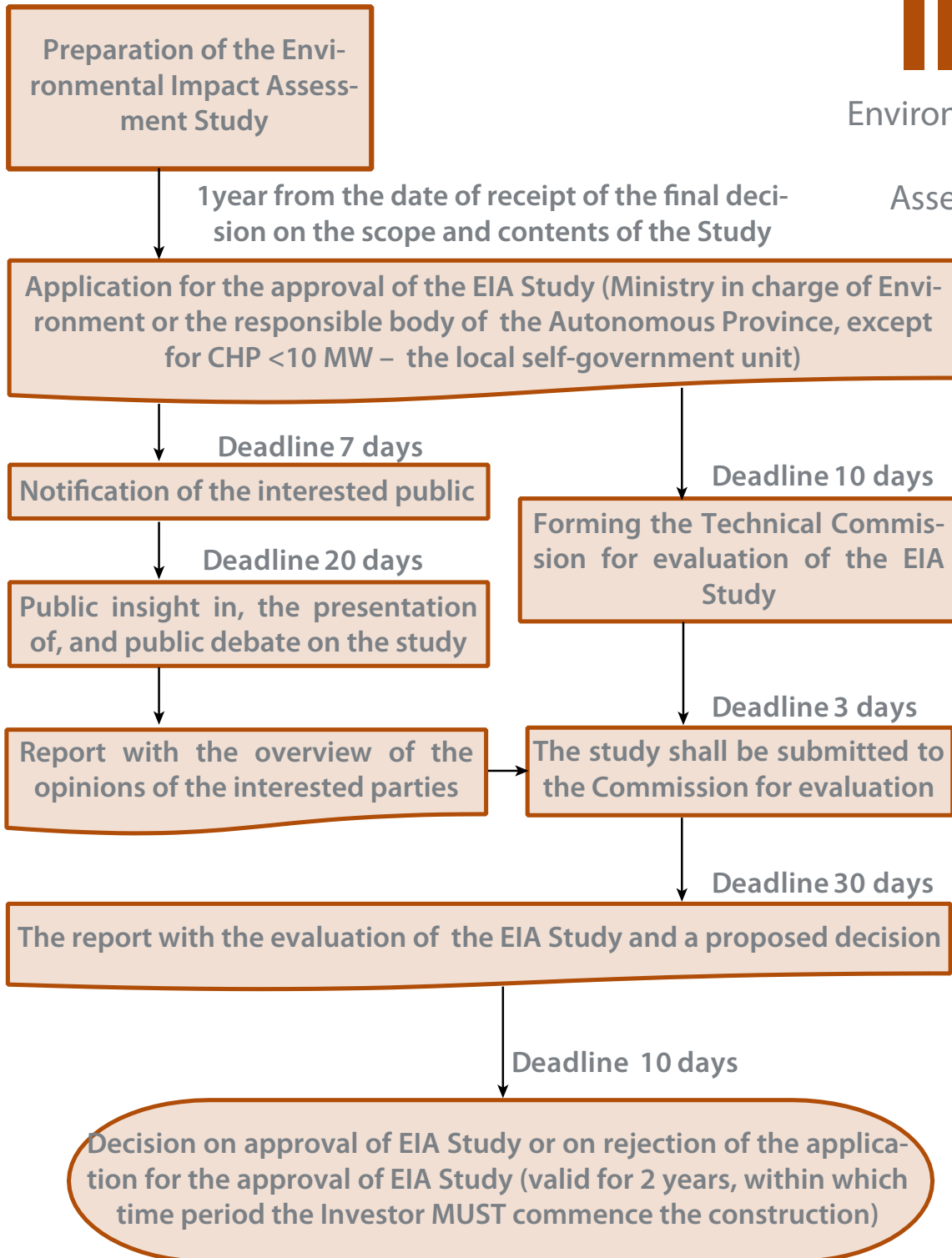
Environmental Impact Assessment (2)





II-4

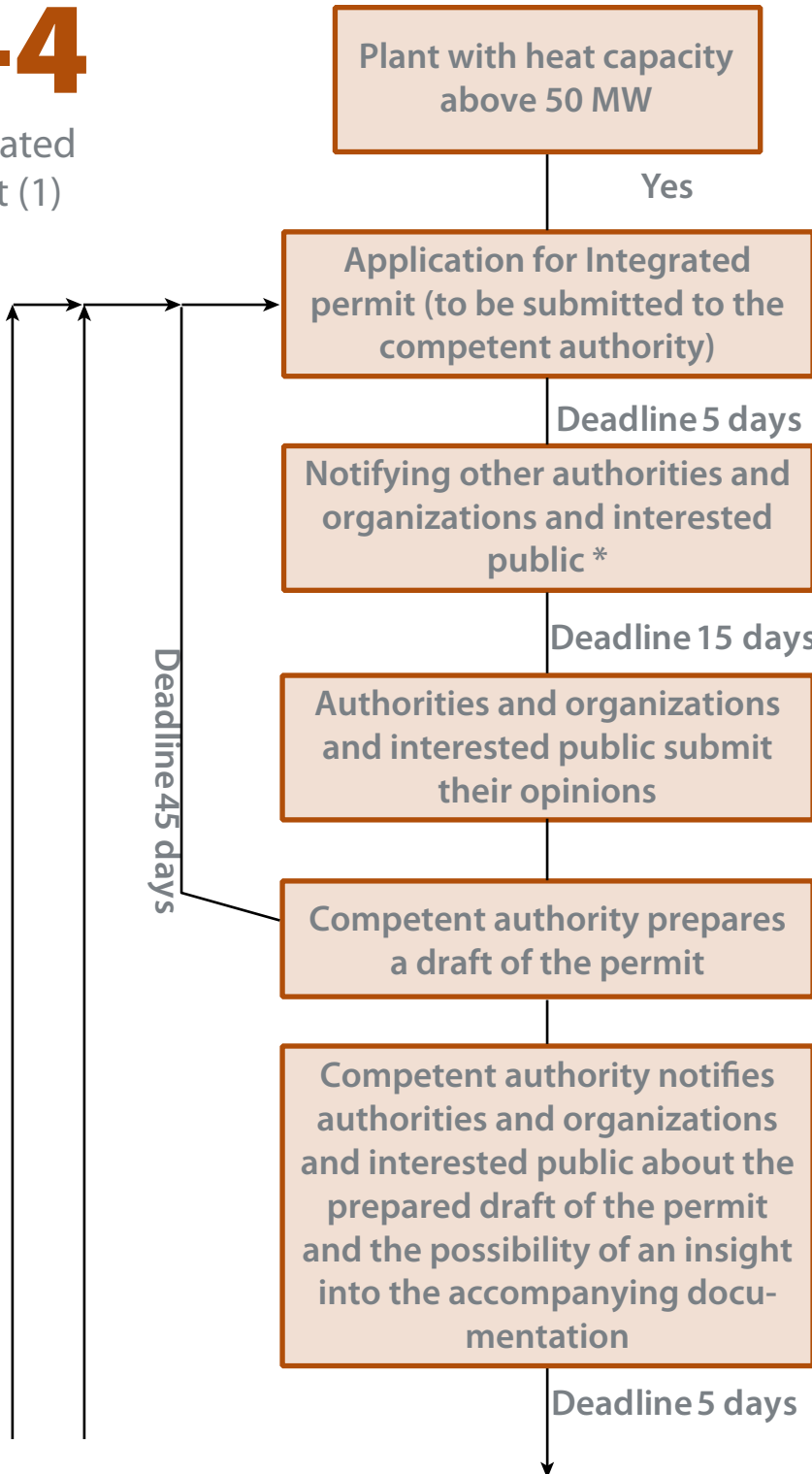
Environmental Impact Assessment (3)





II-4

Integrated Permit (1)



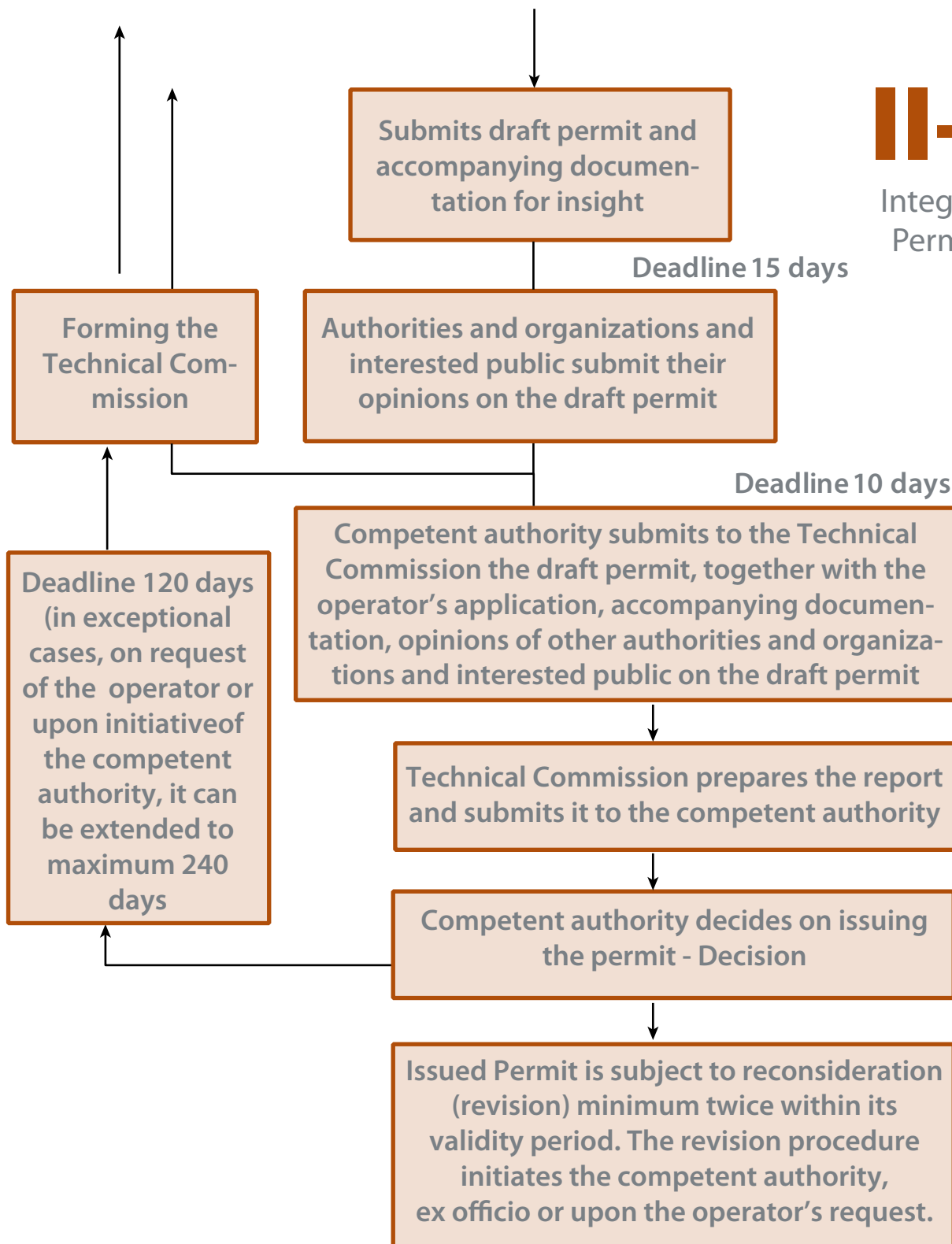
*authorities and organizations in the areas of: agriculture, water resources management, forestry, planning, construction, transportation/traffic, energy, mining, protection of cultural goods, nature protection, etc. as well as the authorities of local self-government on the territory of which the activity is planned

Acquiring the Right to Construct a Power Plant

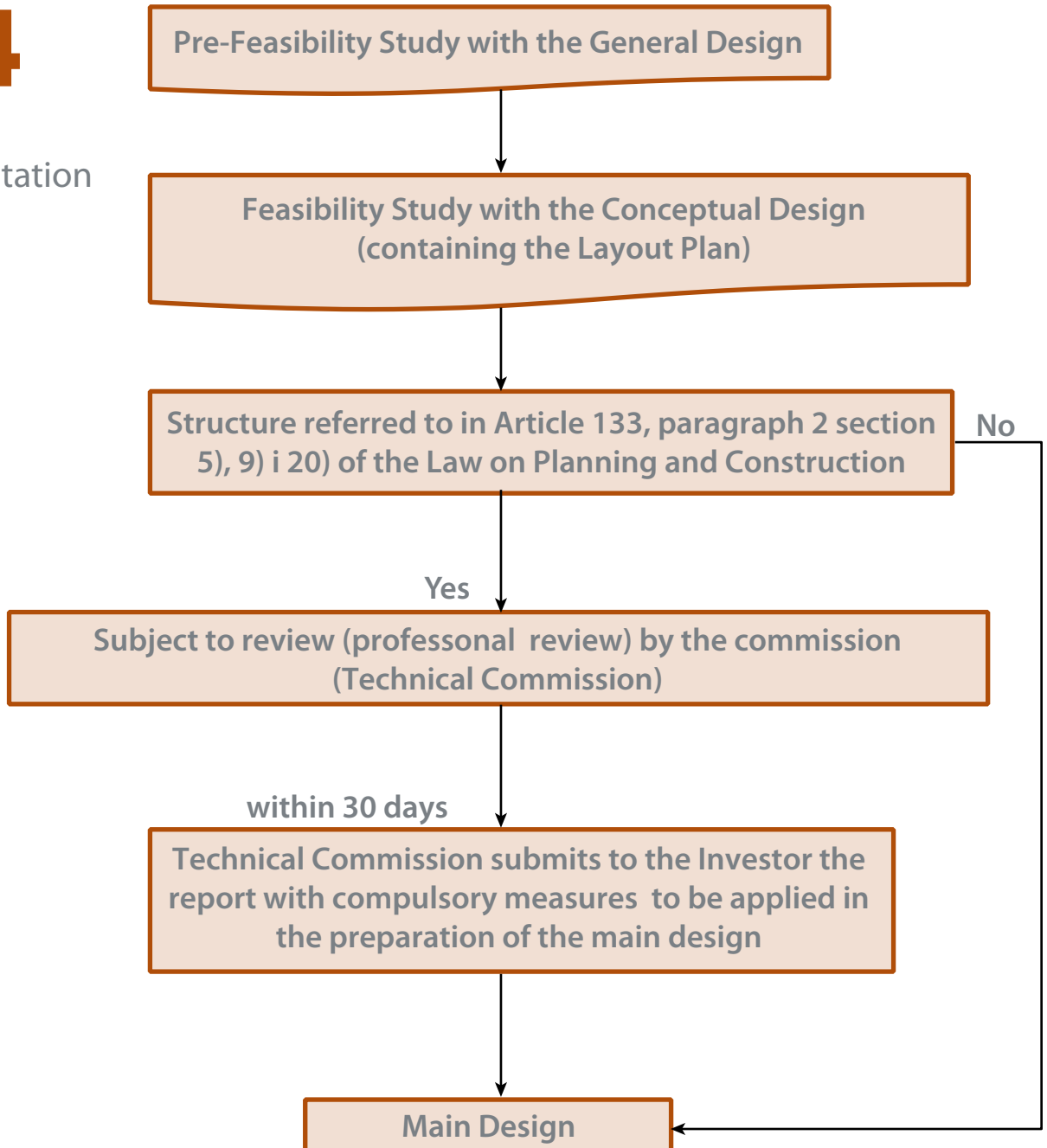


II-4

Integrated Permit (2)



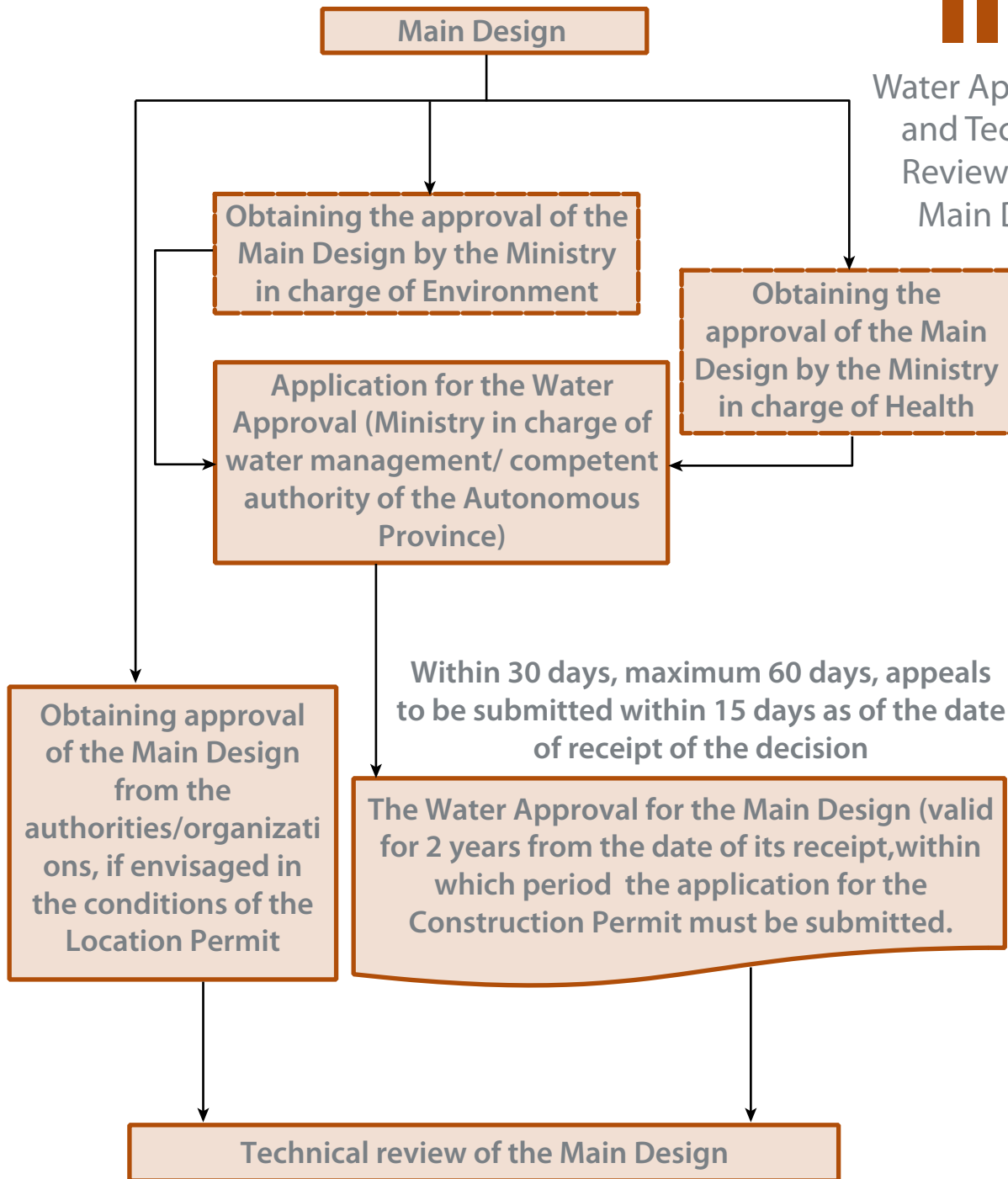
II-4

Technical
Documentation



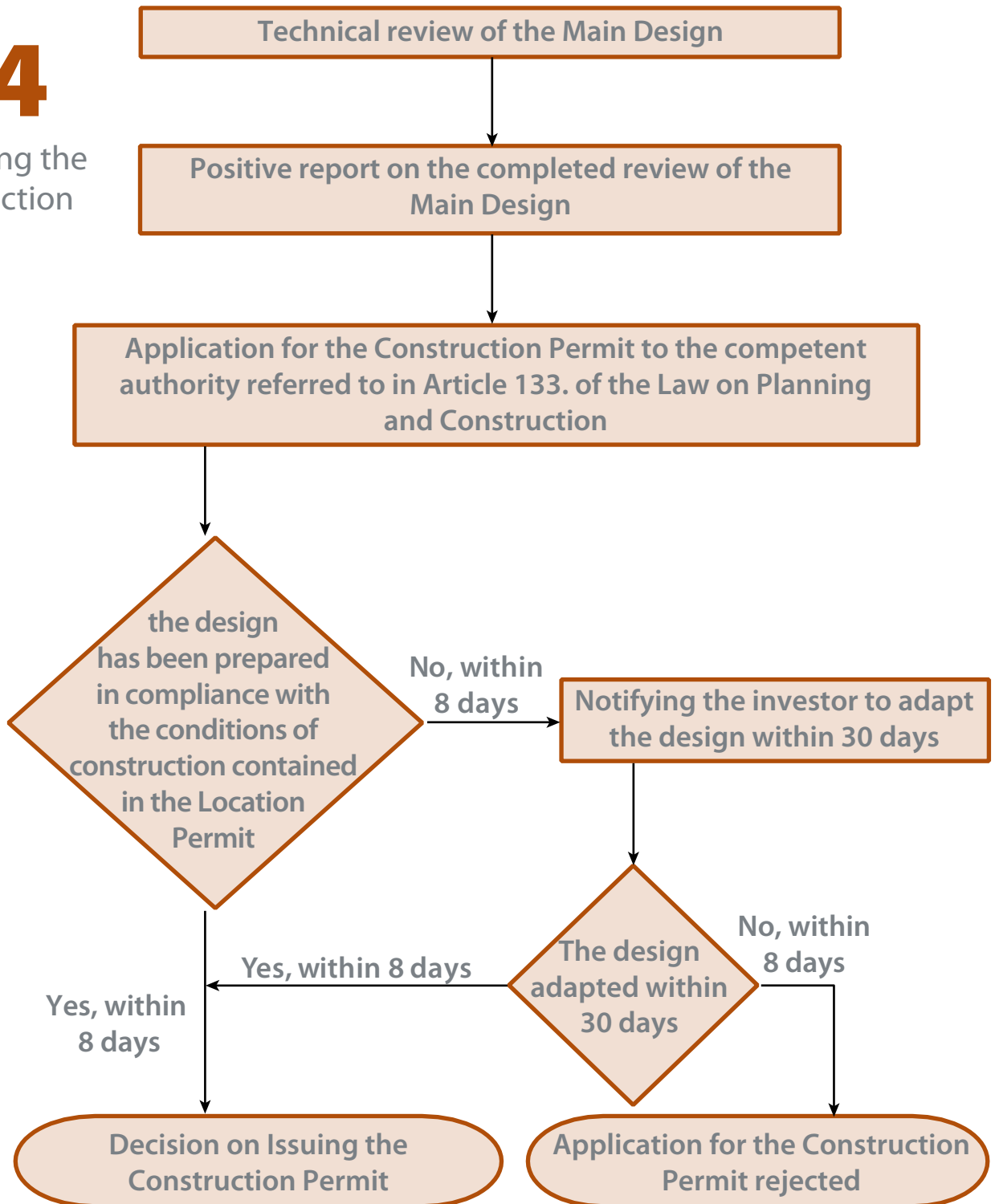
II-4

Water Approval and Technical Review of the Main Design



II-4

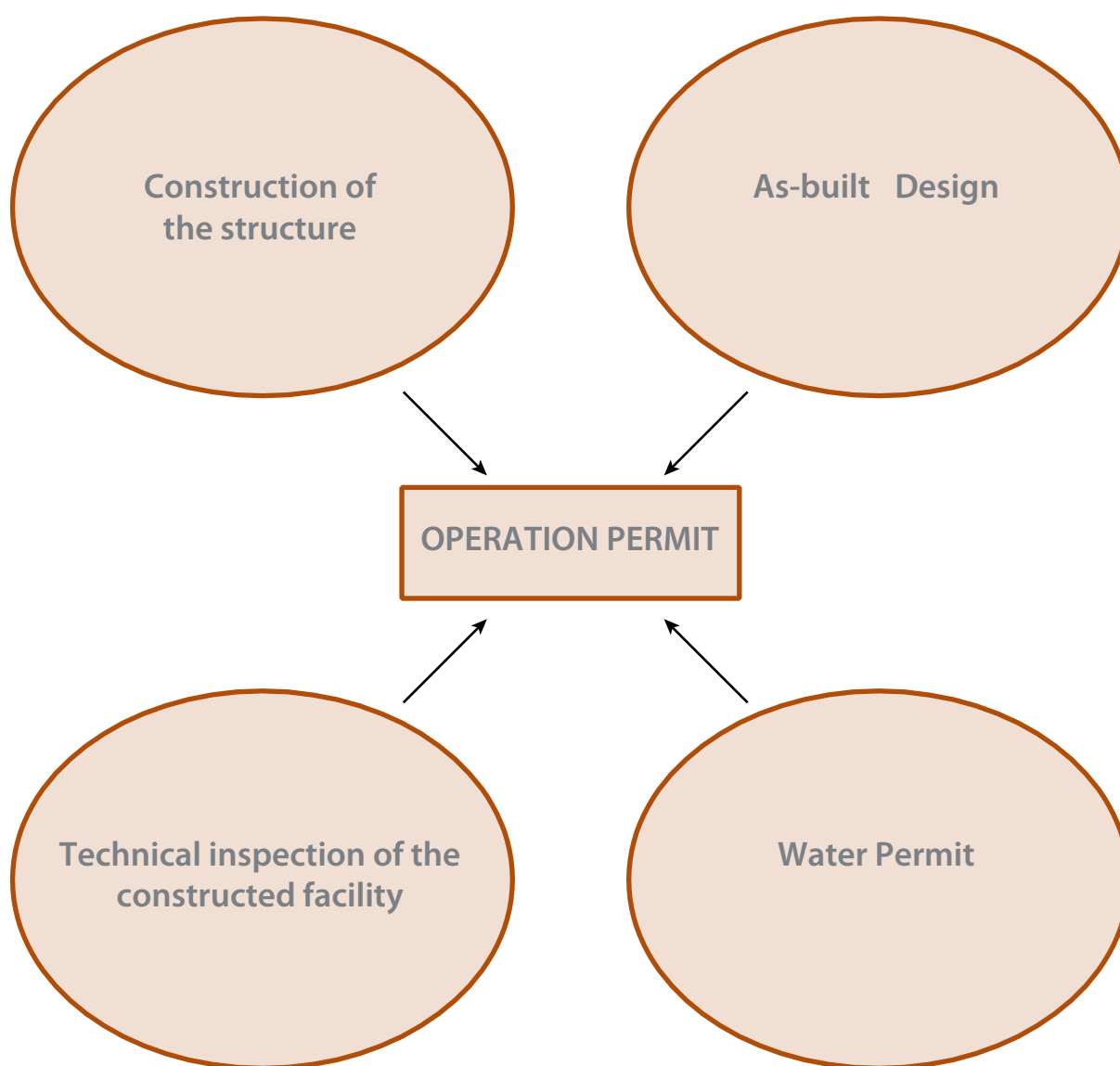
Obtaining the Construction Permit



II-5

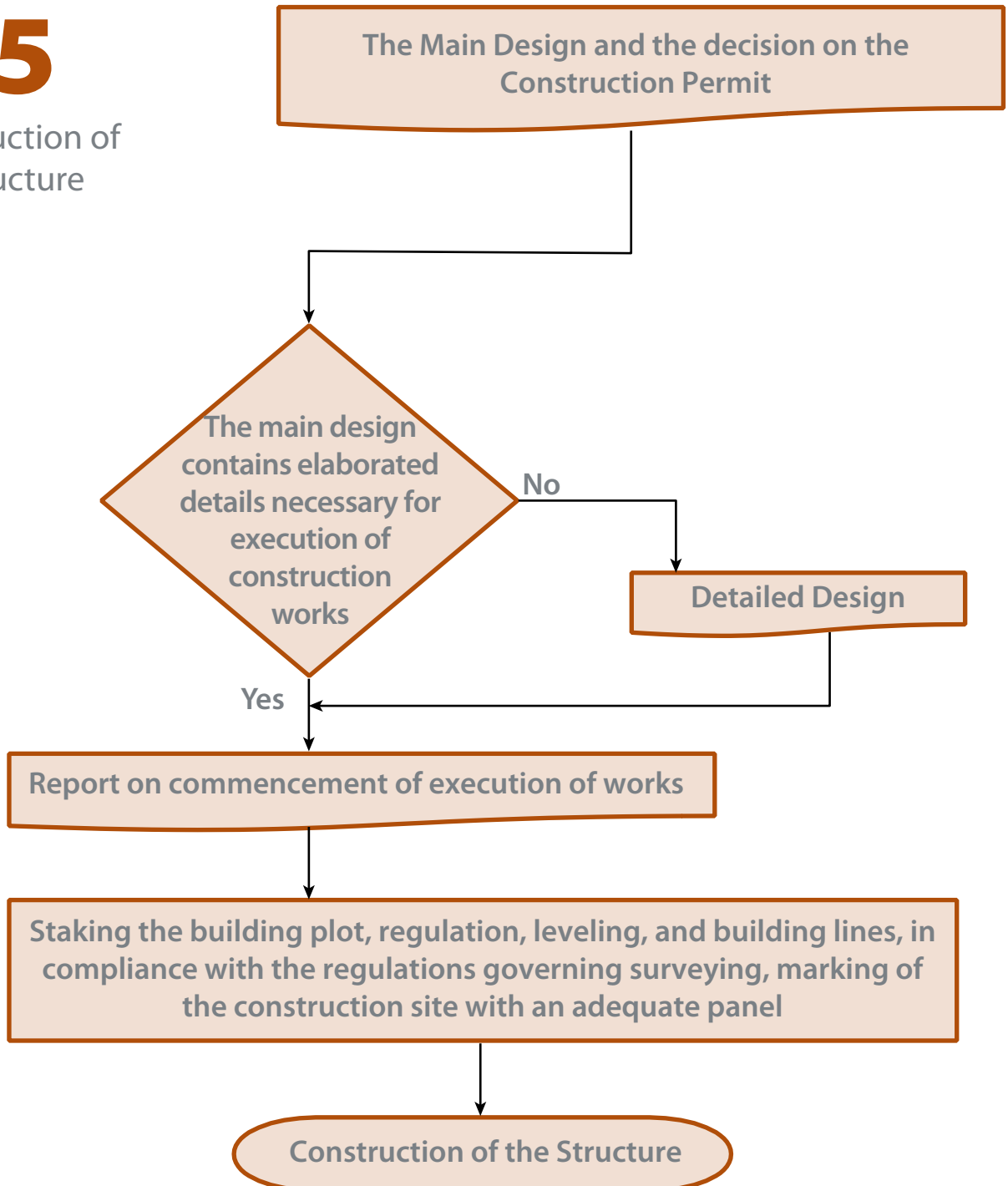
Operation Permit

- Fitness of the structure for operation is established through a technical inspection
- The structure may be used pursuant to previously obtained Operation Permit
- During the process of obtaining the Operation Permit the As-Built Design should be enclosed



II-5

Construction of the Structure



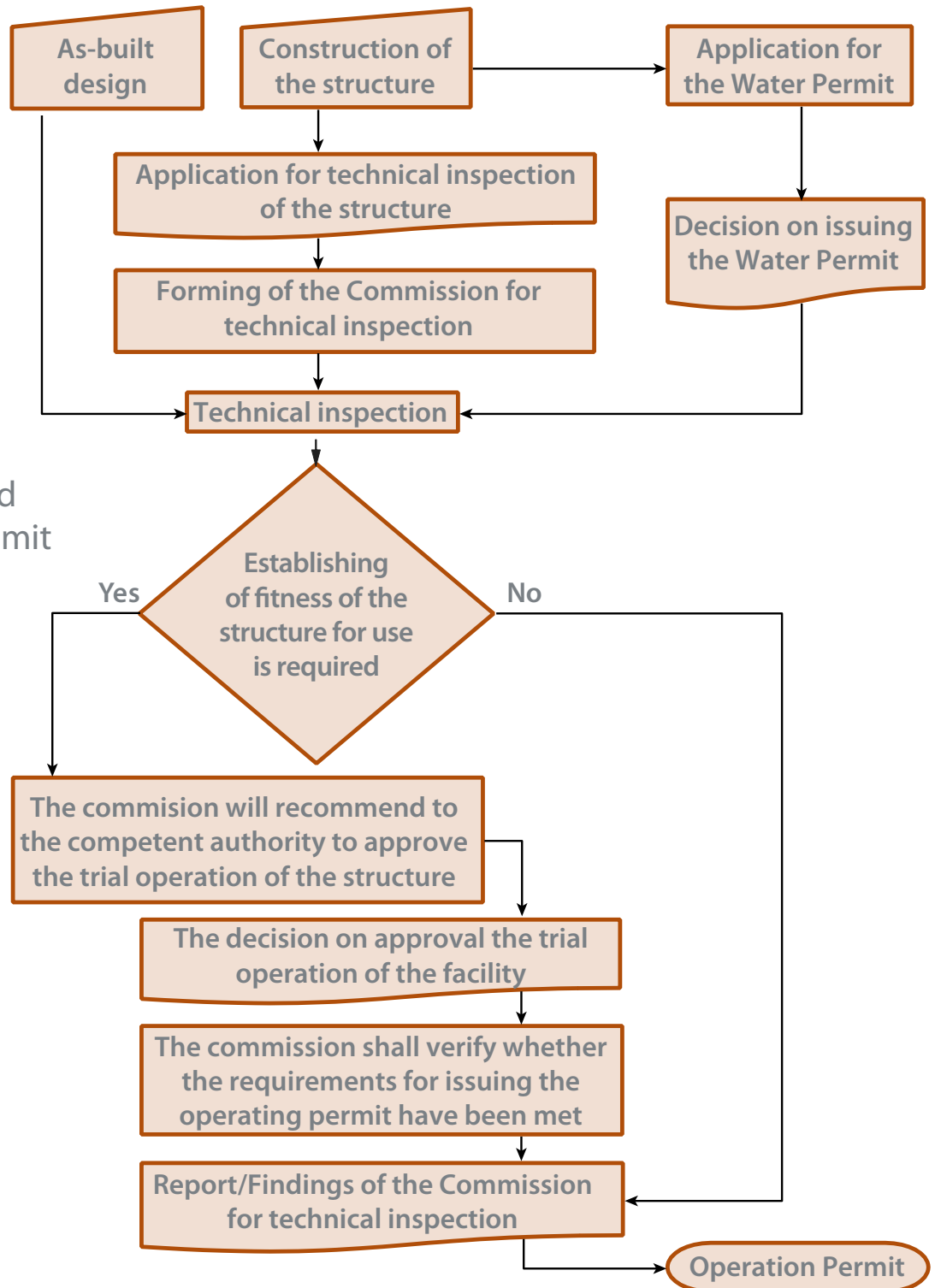
II-5

Construction of the Structure

- Construction of structures, or execution of works, can be carried out by an economic entity registered in the corresponding register for the construction of structures, or for the execution of works (the contractor)
- Contractor's obligations are: to sign the main design before the commencement of works, by a decision, to designate the responsible contracting engineer, to provide to the responsible contracting engineer the contract on construction and documentation on the basis of which the structure is being built, to ensure preventive measures for a safe and harmful work in accordance with the law, to execute works according to the documentation on the basis of which the Construction Permit was issued, to organize the building site in the manner that will ensure access to the location, ensure security of the structure and the persons at the building site and its surrounding, to provide evidence on the quality of executed works, to keep the building log, building diary and ensure the inspection book, to secure structures and environs in case of the discontinuation of works.
- The construction contract, decision on appointment of the responsible contractor on the site and the main design, i.e. documentation on the basis of which the structure is being built should be constantly kept at the building site
- Investor ensures the technical supervision during the construction of the structure or execution of works for which the Construction Permit was issued

II-5

Technical Inspection and Operation Permit





Acquiring the Right to Engage in the Activity of Electricity Generation

- Market activities
 - Electricity generation
 - Combined heat-and-power generation
- Activity of Public Interest
 - Heat generation

III-1 Acquiring the Right to Engage in the Activity of Public Interest* and/or Concession for Exploiting Natural Resources **

III-2 License

III-3 Connection Approval

III-4 Privileged Power Producer Status

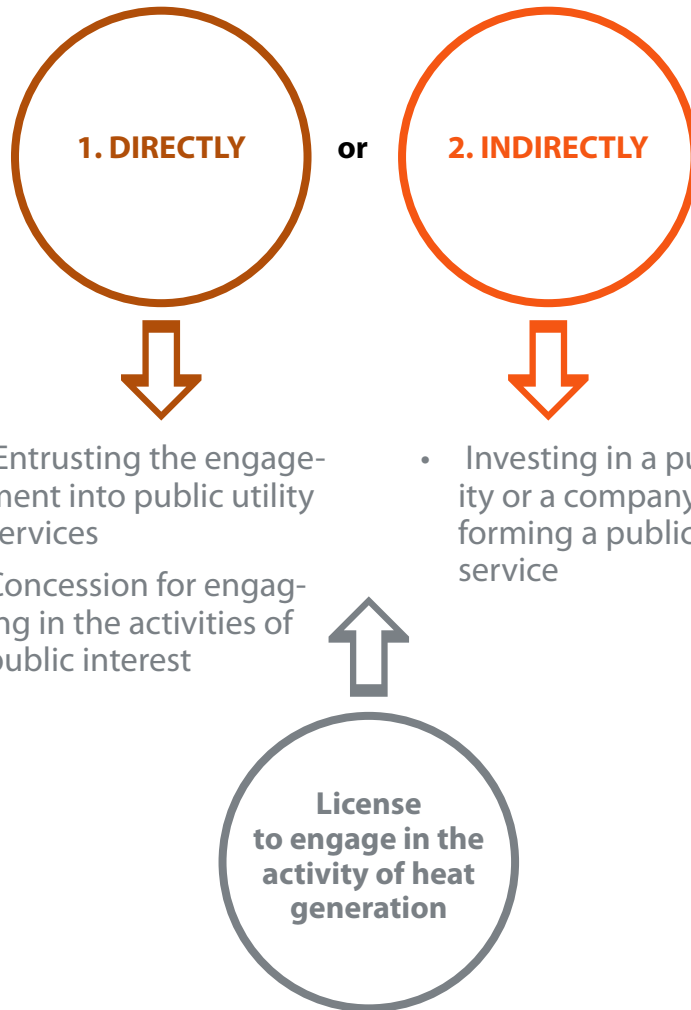
III-5 Power Purchase Agreement

**the right to engage in the activities obligation*

*** Concession is an option according to the law regulating Concessions*

III-1

Acquiring the Right to Engage in the Production of Heat - options



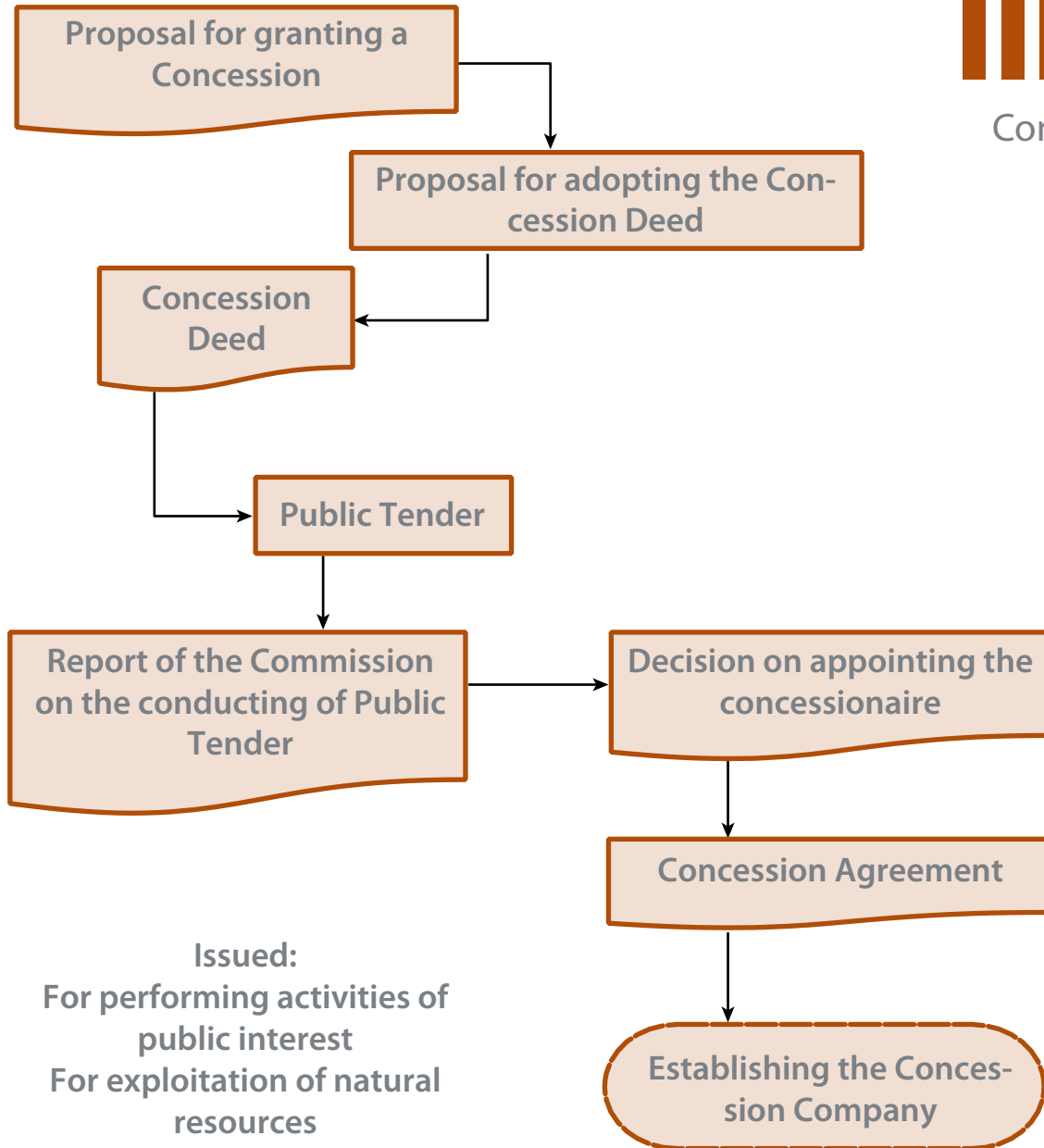
III-1

Entrusting the Right to Engage in Public Utility Services

- Entrusting is based on:
 - The decision of the assembly of the local self-government unit on the manner of providing public utility services
 - The agreement on entrusting the PU activities
- Financing of the public utility services is determined by the procedure of entrusting of that public utility service:
 - the contractor obtains the right to secure financing of providing the public utility services, in whole or in part, through the collection of a fee from the service users, and on that procedure stipulations of the law governing concessions are applied
 - performing of public utility services is financed from the budget of the local self-government unit, and on that procedure stipulations of the law governing public procurements are applied



III-1 Concession



III-1

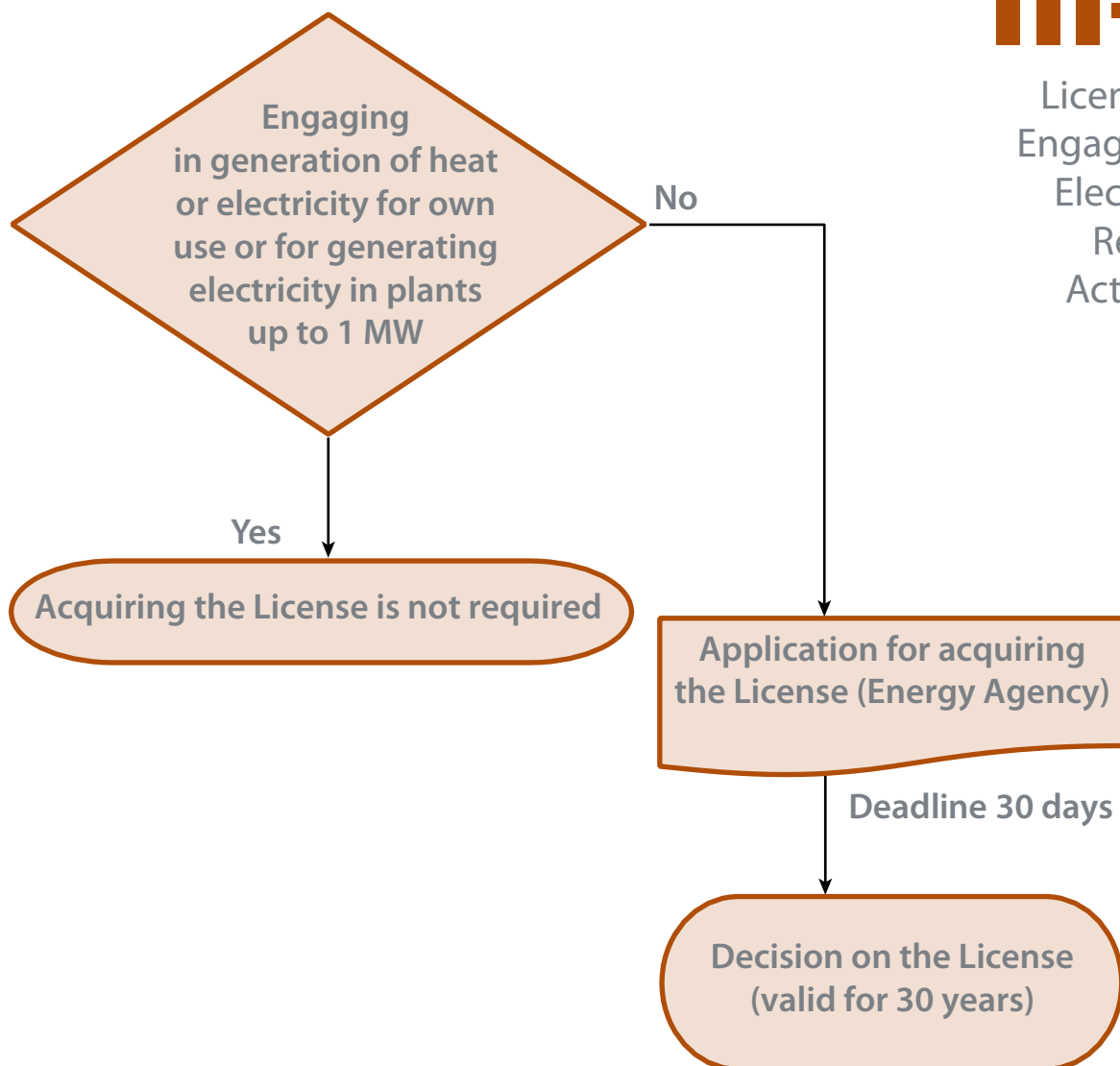
Concession, Contents of the Concession Agreement

- Parties to the agreement, subject matter of the concession, including description of structures, equipment and installations
- Validity period of the concession and conditions for its extension , duration of preparatory activities
- Distribution of risk between the public and the private partner and the scope of exclusive rights of the private partner
- Amount and the manner of providing guarantee for performance of concession commitment
- Conditions of performing the concession –related activity and standards regarding products and services, transfer of technology
- Concession fee (amount, terms, conditions and the manner of payment)
- Rights and obligations regarding general safety, health protection and environmental protection , as well as the responsibility for the compensation of damages caused by jeopardizing the general safety and environment
- Rights to transfer the concession
- Time and manner of handing over the assets, structures, equipments and installations and the condition in which they have to be delivered
- Conditions of amendments of the agreement or its termination and their consequences, changed circumstances and the force majeure
- Manner of resolving disputes and the application of the appropriate law
- Other provisions which are agreed by the parties to the agreement. The agreement also regulates the manner of mutual information on the execution of the agreement, manner of monitoring the implementation of the agreement and exercising of the rights and obligations of the parties to the agreement



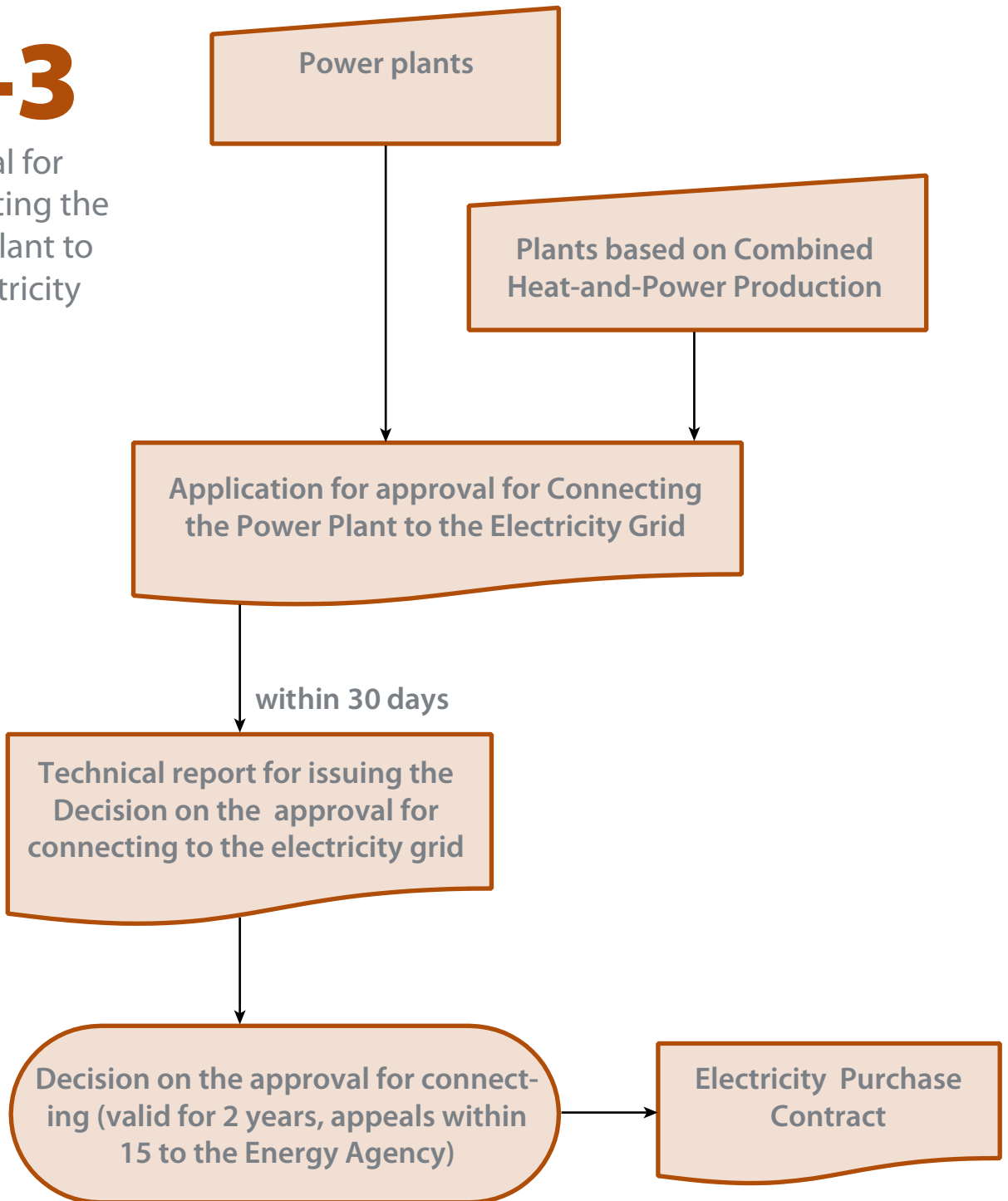
III-2

License on Engaging in Electricity Related Activities



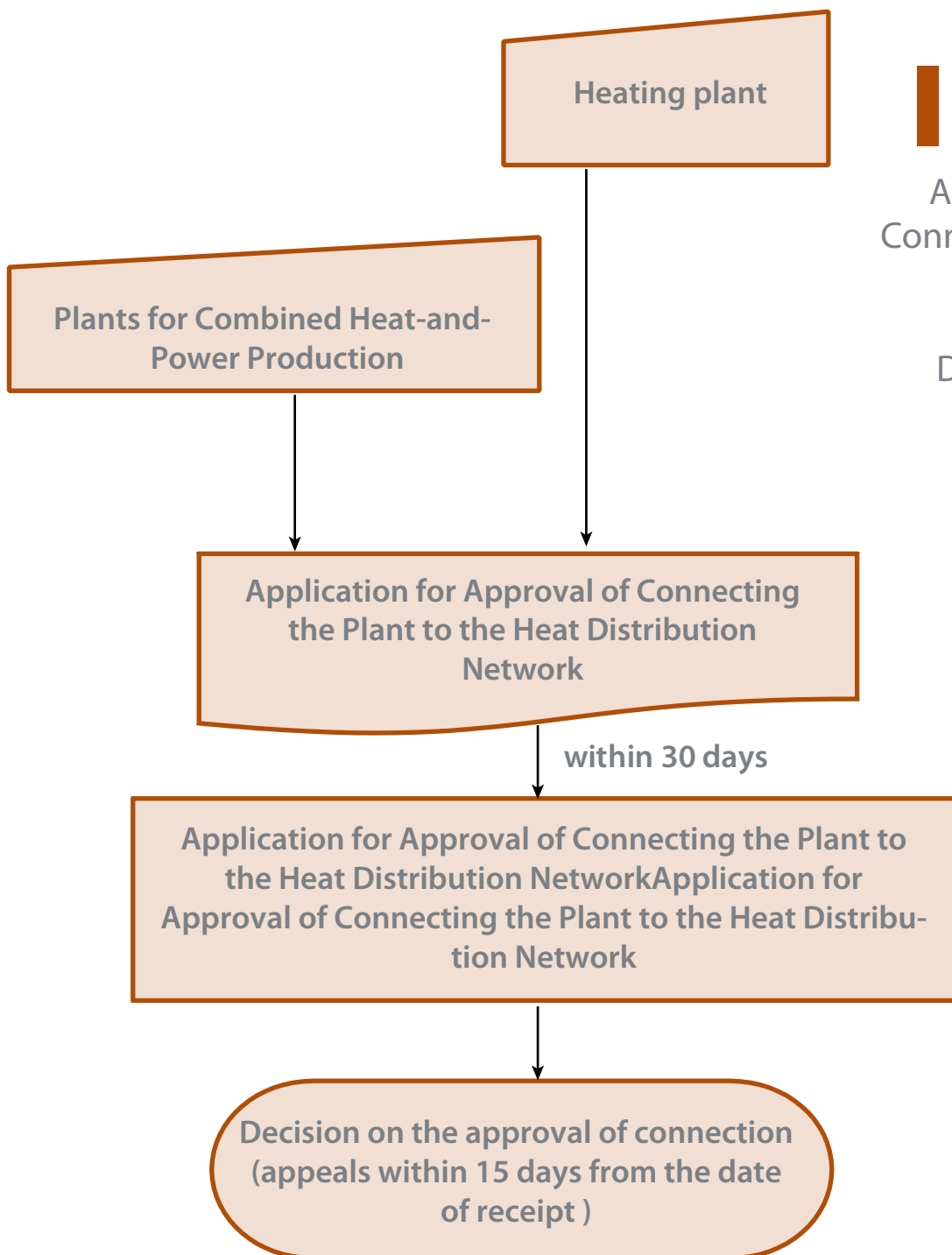
III-3

Approval for Connecting the Power Plant to the Electricity Grid



III-3

Approval for Connecting the Plant to the Heat Distribution Network



III-4

Privileged
Producer
Status

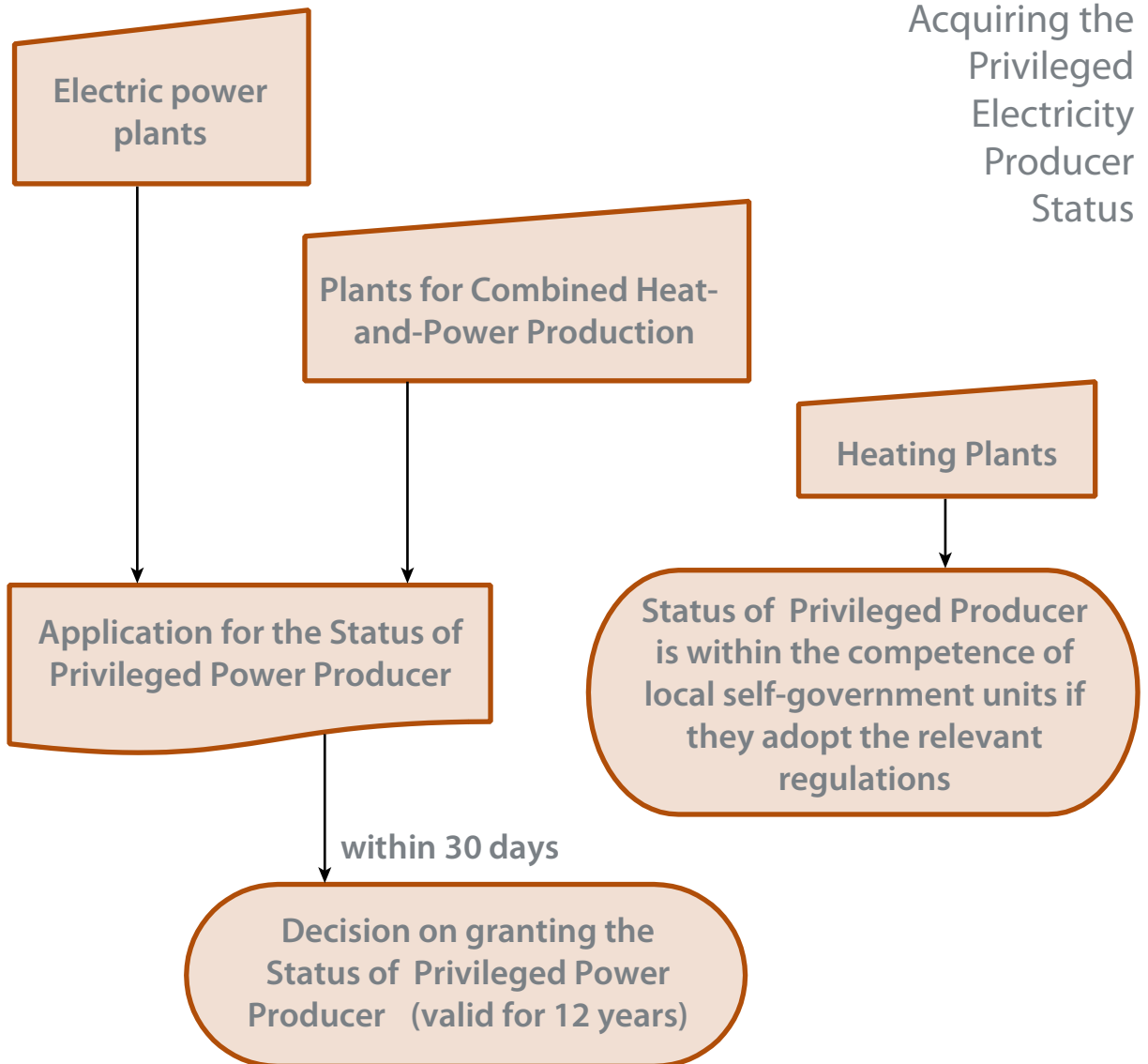
- Priority rights in the organized energy market with respect to other power producers offering electricity under the same terms and conditions
- They are entitled to subsidies, tax, customs, and other facilities
- Incentives: 1) incentive period; 2) undertaking balancing responsibility; 3) free reading of generated electricity 4) right to conclude a contract with the public supplier, upon expiry of the incentive period, at the price valid at the organized market; 5) Feed-in Tariff:

Type of plant	Installed Capacity P (MW)	Incentives (cEUR/1 kWh)
using geothermal energy	Up to 1	9,67
using geothermal energy	1 – 5	10,358-0,688*P
using geothermal energy	Over 5	6,92



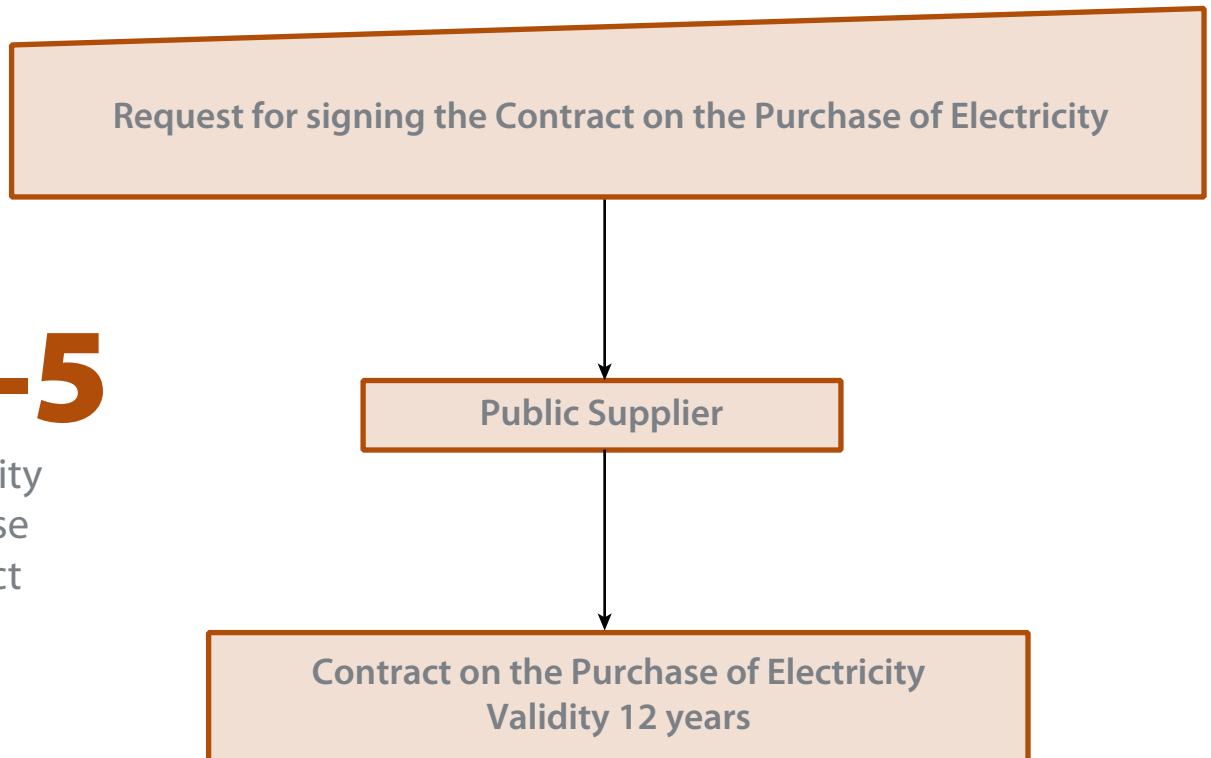
III-4

Acquiring the Privileged Electricity Producer Status



III-5

Electricity Purchase Contract



NOTE: There are cases of Contracts on the Purchase of produced electricity signed before acquiring the status, made in order to facilitate connection to the grid

Commencing Generation (and Sale) of Heat and Electricity

Guarantee of Origin

- Document the exclusive function of which is to prove to the end buyer that the given share or quantity of electricity has been generated from renewable energy sources, as well as from combined heat and power production plants with a high coefficient of utilization of primary energy
- Guarantee of Origin shall be issued by the operator of the transmission system for the unit quantity of generated electricity of 1 MWh
- The Guarantee is a document in electronic form and it shall be valid for one year from the date of issuance
- Transferable
- When issued in other states, it shall also be valid in the Republic of Serbia under the conditions of reciprocity and in compliance with the ratified international agreement



**IZGRADNJA POSTROJENJA
I PROIZVODNJA ELEKTRIČNE/TOPLLOTNE
ENERGIJE IZ HIDROGEOTERMALNIH
IZVORA U REPUBLICI SRBIJI**

Vodič za investitore

IZGRADNJA POSTROJENJA I PROIZVODNJA ELEKTRIČNE/TOPLLOTNE ENERGIJE IZ HIDRO- GEOTERMALNIH IZVORA U REPUBLICI SRBIJI

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Predgovor

Srbija ima značajan potencijal u obnovljivim izvorima energije koji je, na žalost, još uvek nedovoljno iskorišćen. Jedan od razloga za takvu situaciju je nedovoljna investiciona aktivnost u ovom sektoru. Očekuje se da će u narednih nekoliko godina doći do krupnih pomaka u tom pogledu, s obzirom na najnoviji korak Vlade Republike Srbije u smislu prihvatanja odluke Ministarskog saveta Energetske zajednice o promociji obnovljive energije kroz transpoziciju Direktive 2009/28/EC o obnovljivim izvorima energije. Ovom odlukom Srbiji je postavljen ambiciozni cilj da poveća učešće obnovljive energije u ukupnoj potrošnji finalne energije na 27% u 2020. godini sa 21.2% u referentnoj, 2009. godini

Program Ujedinjenih nacija za razvoj (UNDP) je tokom 2012. godine, na osnovu sporazuma o saradnji sa Ministarstvom energetike, razvoja i zaštite životne sredine Republike Srbije, sproveo projekat "Političko savetovanje u oblasti obnovljivih izvora energije" tokom koga su izrađena dva nova i izvršena revizija četiri postojeća, zastarela vodiča za investiture u postrojenja koja koriste obnovljive izvore energije:

- IZGRADNJA POSTROJENJA I PROIZVODNJA ELEKTRIČNE/TOPLLOTNE ENERGIJE IZ BIOMASE U REPUBLICI SRBIJI
 - IZGRADNJA POSTROJENJA I PROIZVODNJA ELEKTRIČNE ENERGIJE U MALIM HIDRO-ELEKTRANAMA U REPUBLICI SRBIJI
 - IZGRADNJA POSTROJENJA I PROIZVODNJA ELEKTRIČNE ENERGIJE U VETROELEKTRANAMA U REPUBLICI SRBIJI
-

-
- IZGRADNJA POSTROJENJA I PROIZVODNJA ELEKTRIČNE/TOPLLOTNE ENERGIJE IZ HIDROGEOTERMALNIH IZVORA U REPUBLICI SRBIJI
 - IZGRADNJA POSTROJENJA I PROIZVODNJA ELEKTRIČNE ENERGIJE U SOLARNIM ELEKTRANAMA U REPUBLICI SRBIJI
 - IZGRADNJA SOLARNIH GREJNIH SISTEMA U REPUBLICI SRBIJI

Svi vodiči, izuzev jednog, su dvojezični i izrađeni u dve verzije. U šest detaljnih vodiča opisane su celokupne složene procedure za izgradnju postrojenja i obavljanje delatnosti proizvodnje energije iz konkretnih obnovljivih izvora, uz upućivanje na odgovarajuće propise i navođenje nadležnih institucija. Detaljni vodiči namenjeni su, pre svega, investitorima i stručnjacima koji rade na razvoju projekata, ali i zaposlenima u različitim nadležnim institucijama, s obzirom na međusektorski karakter procedura. U pet sažetih vodiča ova složena problematika prikazana je manje detaljno i na slikovit način, čime se tema približava i širem krugu zainteresovanih strana.

Cilj izrade vodiča je da se ohrabre i pomognu investitori da ulažu u obnovljive izvore energije u Srbiji, ali i da se, kroz detaljno sagledavanje složenih zakonskih procedura, uoč njihovi nedostaci, kao i da se podstaknu nadležni da kroz zakonodavne i institucionalne aktivnosti ove procedure pojednostave i unaprede. Nadamo se da će ovi vodiči pokrenuti konstruktivni dijalog mnogobrojnih zainteresovanih strana i time doprineti boljoj informisanosti i međusobnom razumevanju, što, u krajnjoj liniji, treba da rezultira povoljnim okruženjem za investicije u sektoru obnovljivih izvora energije.

Energija iz geotermalnih izvora

- Geotermalna energija predstavlja toplotu akumuliranu u suvim stenama i fluidima Zemljine kore, kao posledica neprekidnog zračenja toplote iz unutrašnjosti Zemlje
 - Geotermalna energija, može biti:
 - hidrogeotermalna energija - akumulirana u fluidima (vodi i gasovima) i
 - petrogeotermalna energija - akumulirana u čvrstim stenama
-

Hidrogeotermalna energija

- Hidrogeotermalna energija je jedan od oblika obnovljivih izvora energije
 - Hidrogeotermalna energija može da se koristi direktno, a može da se koristi i za proizvodnju toplotne energije i za proizvodnju električne energije
-

Napomena

Potrebno je ukazati da se ovaj Vodič odnosi na sva postrojenja na hidrogeotermalnu energiju i da su u njemu opisane procedure pred nadležnim organima i institucijama, ali da pojedini elementi ovih procedura, kao i sprovođenje pojedinih procedura zavisi od veličine objekta, mesta na kome se gradi objekat, konkretne tehnologije za proizvodnju energije i drugih karakteristika samog objekta za korišćenje hidrogeotermalne energije.

Klasifikacija postrojenja

- **Zakon o energetici**
 - postrojenja koje koriste obnovljive izvore energije – hidrogeotermalnu energiju
 - postrojenja sa kombinovanim ciklusom
- **Pravilnik o kriterijumima za izdavanje energetske dozvole, sadržini zahteva i načinu izdavanja energetske dozvole**
 - objekti za proizvodnju električne energije nazivne snage od 1 do 10 MW
 - objekti za proizvodnju električne energije nazivne snage preko 10 MW
 - objekti za proizvodnju toplotne energije instalisane snage preko 1 MW

Klasifikacija postrojenja

- **Zakon o planiranju i izgradnji**
 - postrojenja za proizvodnju energije iz obnovljivih izvora – nadležnost ministarstva za poslove građevinarstva, odnosno autonomne pokrajine,
 - postrojenja sa kombinovanom proizvodnjom snage ispod 10 MW – nadležnost organa lokalne samouprave (izuzeci)
- **Uredba o uslovima i postupku sticanja statusa povlašćenog proizvođača električne energije**
 - postrojenja koja u procesu proizvodnje koriste geotermalnu energiju
 - postrojenja (elektrane) sa kombinovanom proizvodnjom koja u procesu proizvodnje istovremeno proizvode električnu i toplotnu energiju koristeći fosilna goriva (ugalj ili prirodni gas), otpadne tehnološke gasove sa organskom frakcijom ili fosilna goriva u kombinaciji sa nekim obnovljivim izvorom energije otpadom ili otpadnim tehnologijama sa organskom
- **Uredba o utvrđivanju Liste projekata za koje je obavezna procena uticaja i Liste projekata za koje se može zahtevati procena uticaja na životnu sredinu razlikuje sledeća postrojenja**
 - postrojenja sa snagom od 50 MW ili više (Lista I) – postrojenja za koja je obavezna izrada Studije o proceni uticaja i
 - postrojenja sa snagom od 1 do 50 MW (Lista II) – postrojenja za koja se može zahtevati izrada Studije o proceni uticaja

Napomena

Za postrojenja do 1 MW se može tražiti procena uticaja ako se radi o postrojenjima koja će se graditi u zaštićenom prirodnom dobru i zaštićenoj okolini nepokretnog kulturnog dobra i u drugim područjima posebne namene

Relevantni propisi

- Zakon o energetici ("Sl. glasnik RS" br. 57/11, 80/11, 93/12 i 124/12)
- Zakon o rudarstvu i geološkim istraživanjima ("Sl. glasnik RS" br. 88/11)
- Odluka o utvrđivanju Strategije razvoja energetike Republike Srbije do 2015. godine («Sl. glasnik RS» br. 44/05)
- Uredba o utvrđivanju Programa ostvarivanja Strategije razvoja energetike Republike Srbije do 2015. godine za period od 2007. do 2012. godine («Sl. glasnik RS» br. 17/07, 73/07, 99/09 i 27/10)
- Zakon o planiranju i izgradnji ("Sl. glasnik RS" br. 72/09, 81/09, 24/11 i 121/12)
- Zakon o prostornom planu Republike Srbije od 2010. do 2020. godine ("Sl. glasnik RS" br. 88/10)
- Zakon o zaštiti životne sredine ("Sl. glasnik RS" br. 135/04 i 36/09)
- Zakon o vodama ("Sl. glasnik RS" br. 30/10 i 93/12)
- Zakon o šumama ("Sl. glasnik RS" br. 30/10 i 93/12)
- Zakon o proceni uticaja na životnu sredinu («Sl. glasnik RS» br. 135/04 i 36/09)
- Zakon o integrisanom sprečavanju i kontroli zagađivanja životne sredine ("Sl. glasnik RS" br. 135/04)
- i ostali zakoni i podzakonska akta...

Nadležne institucije

- Ministarstvo energetike, razvoja i zaštite životne sredine – MERŽS
- Jedinica lokalne samouprave - JLS
- Agencija za energetiku - AE
- Republički geodetski zavod - RGZ
- Ministarstvo poljoprivrede, šumarstva i vodoprivrede – MPŠV
- Ministarstvo prirodnih resursa, rudarstva i prostornog planiranja - MPRRPP
- Republički hidrometeorološki zavod - RHMZ
- Elektromreža Srbije - EMS
- Elektroprivreda Srbije - EPS
- i ostale nadležne institucije u konkretnom slučaju

Proizvodnja energije iz hidrogeotermalnih izvora

Investitor treba da stekne sledeća prava:



Sticanje prava na istraživanje i eksploataciju hidrogeotermalnih izvora

I-1 Geološka istraživanja

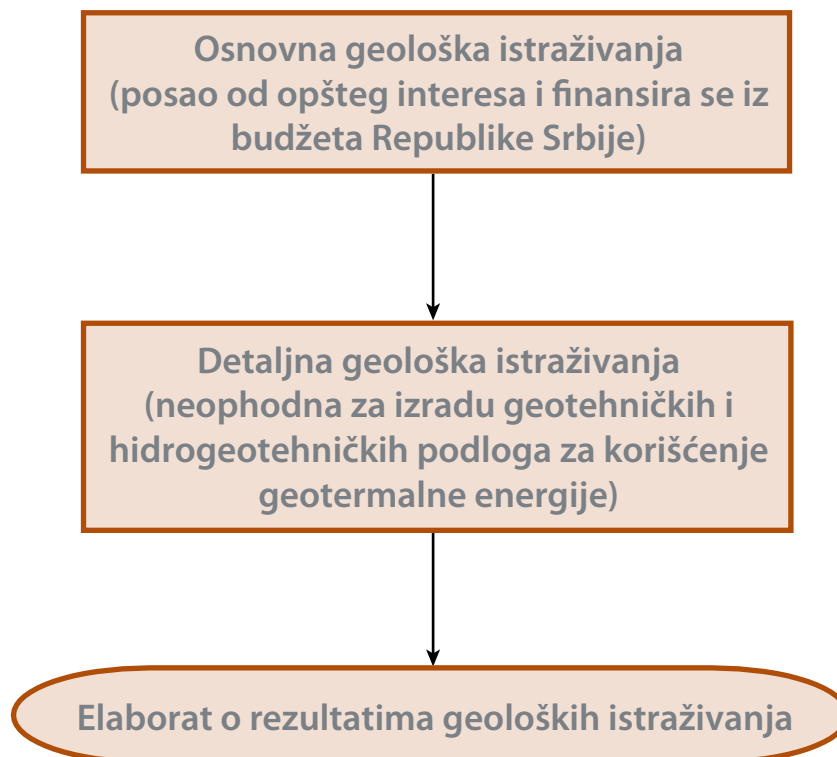
- Projekat geoloških istraživanja
- Odobrenje za geološka istraživanja
- Klasifikacija podzemnih voda i heotermalnih resursa

I-2 Eksploatacija geotermalne energije

- Odobrenje za eksploataciju mineralnih sirovina
- Odobrenje za izvođenje rudarskih radova
- Rudarski objekti i upotrebna dozvola
- Licence prava rudarstva

I-1

Geološka istraživanja



Elaborat između ostalog sadrži:

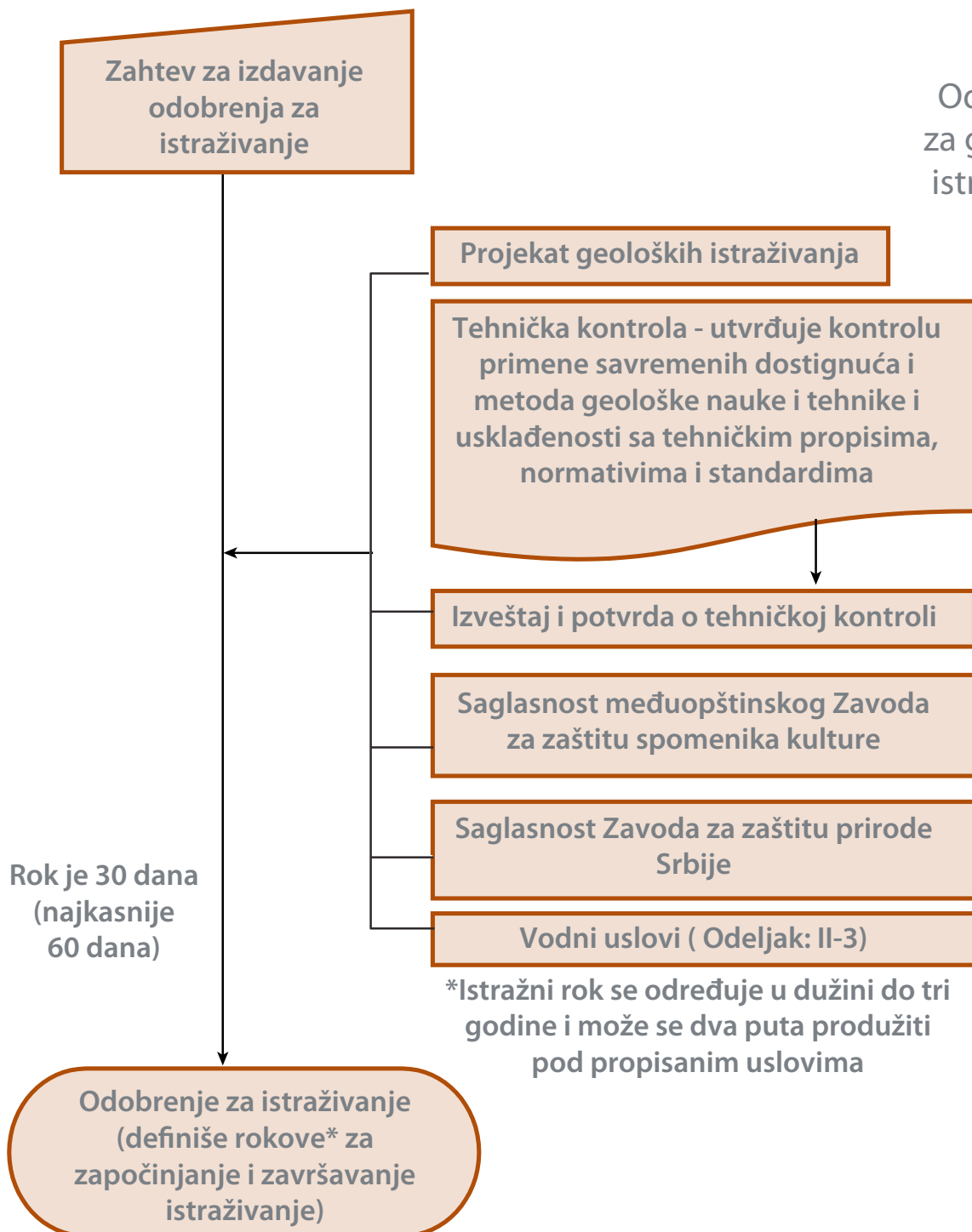
- 1) podatke o geološkim i hidrogeološkim karakteristikama ležišta;
- 2) podatke o izvedenim istražnim radovima;
- 3) metode istraživanja;
- 4) kvalitet geotermalnih voda;
- 5) proračun rezervi;
- 6) tehničko-ekonomsku ocenu eksploatacije i dr.

Napomena

Geološka istraživanja se sprovode u cilju da se utvrdi hidrogeološki potencijal ležišta

I-1

Odobrenje za geološka istraživanja



I-2

Eksploatacija
hidrogeo-
termalne
energije

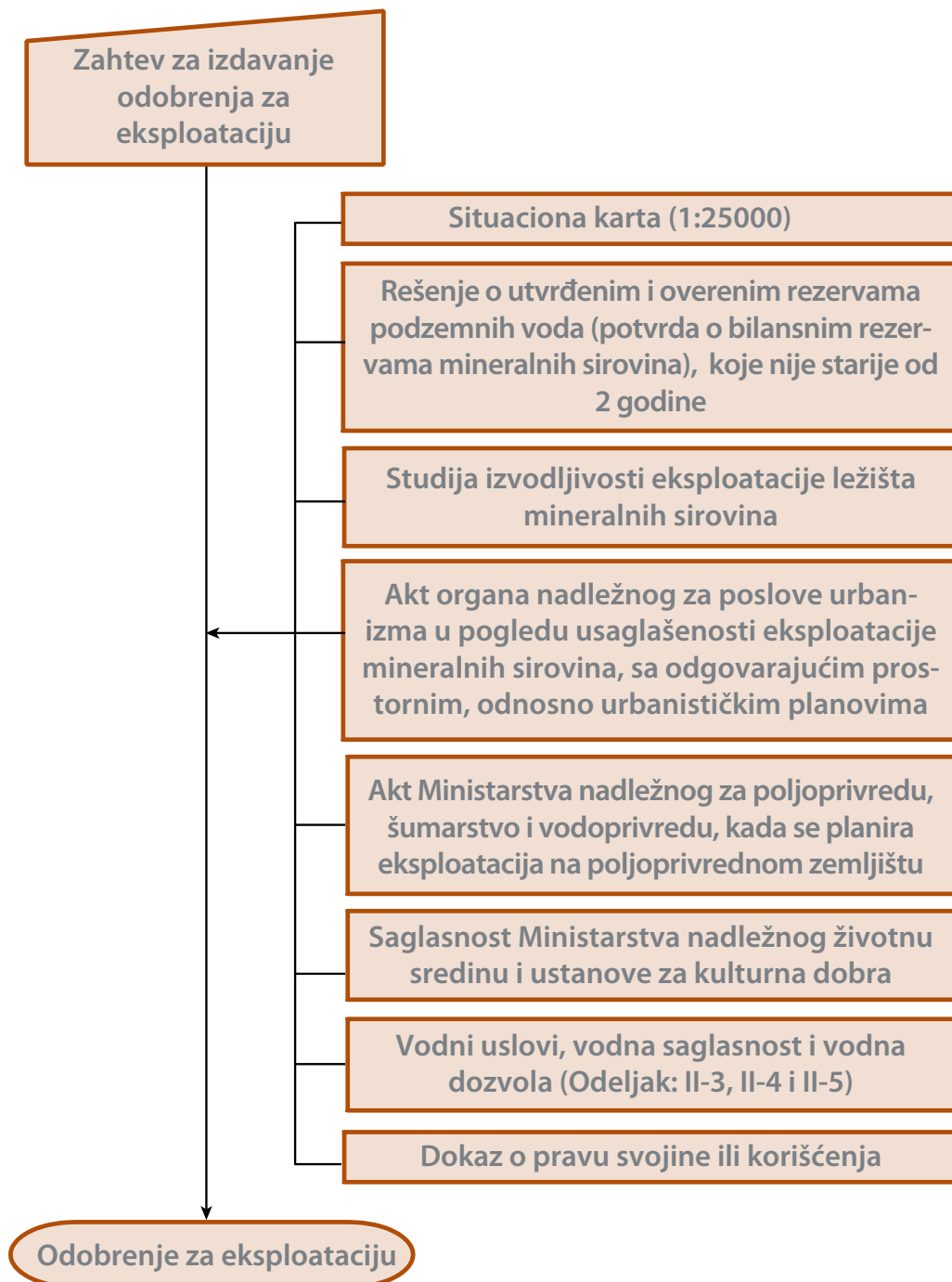


Napomena

Eksploatacijom hidrogeotermalne energije smatra se izvođenje rudarskih radova na pripremi, bušenju, eksploataciji i korišćenju hidrogeotermalnih resursa

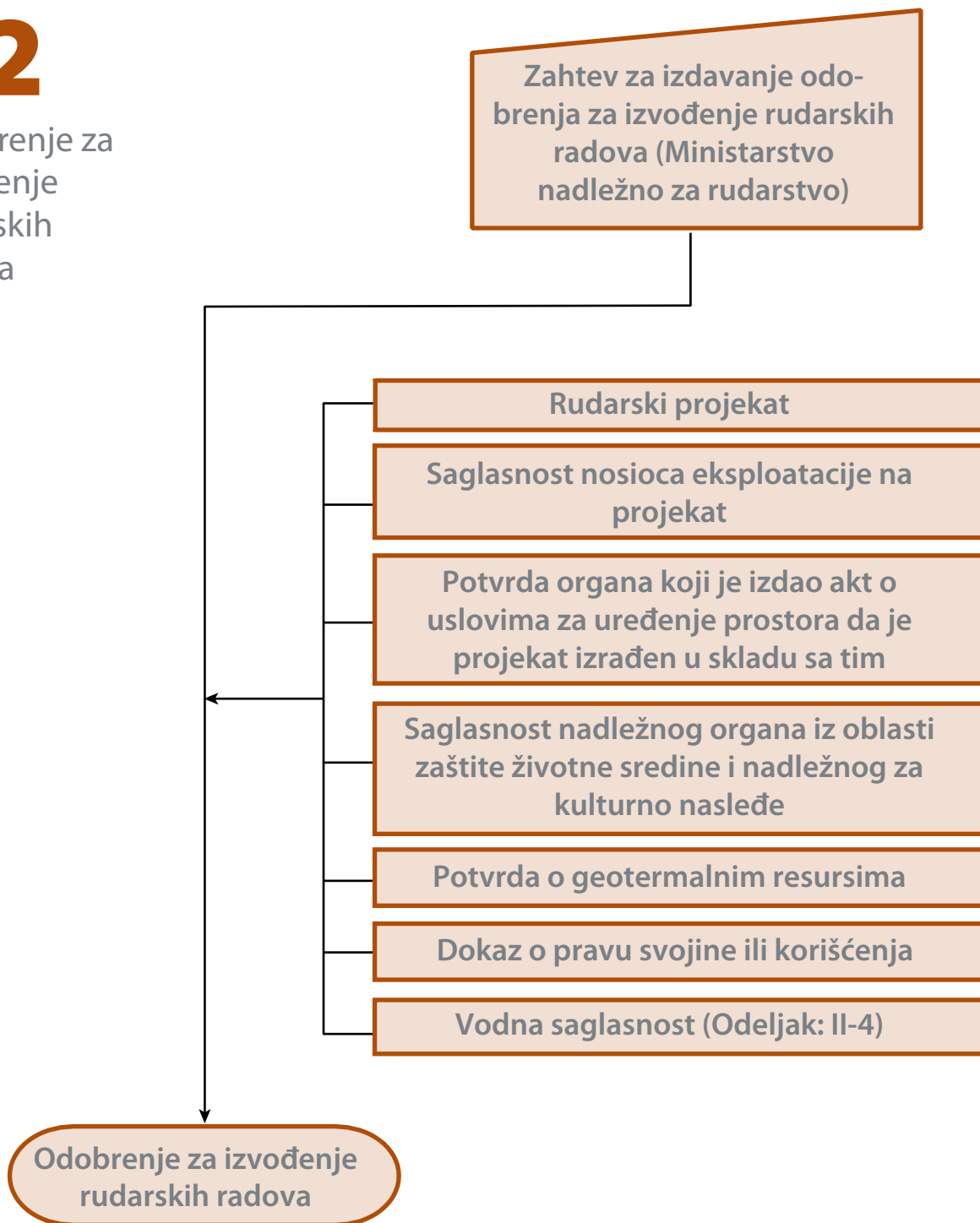
I-2

Odobrenje za eksploataciju mineralnih sirovina



I-2

Odobrenje za izvođenje rudarskih radova

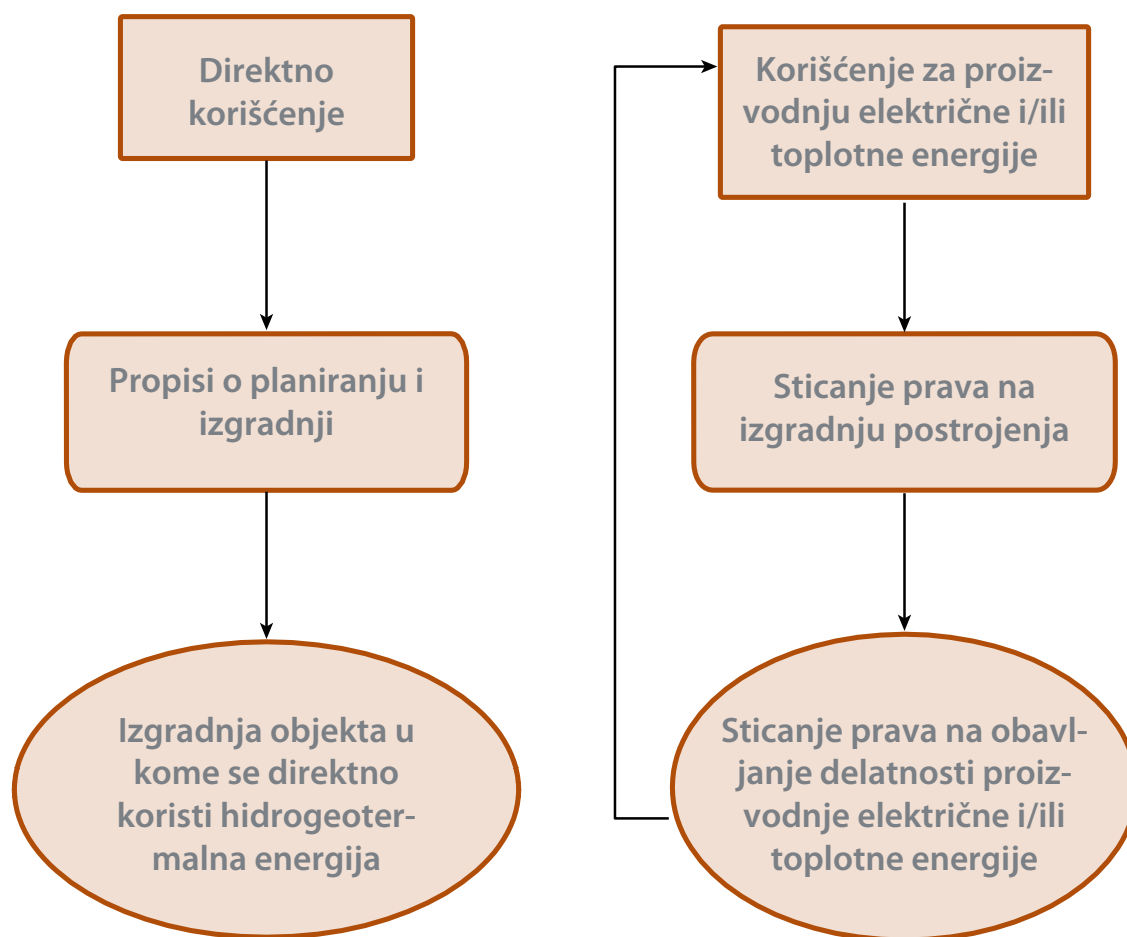


- Rudarski objekti su vezani neposredno za tehnološki proces istraživanja, eksploatacije i transporta podzemnih voda na eksploatacionom polju, kao i postrojenja i uređaji za eksploataciju geotermalnih resursa ili drugih mineralnih sirovina cevnom sistemom i bušotinama
- Upotrebna dozvola za rudarske objekte je rešenje koje izdaje Ministarstvo nadležno za poslove rudarstva i kojim se odobrava upotreba rudarskog objekta ili njegovog dela

I-3

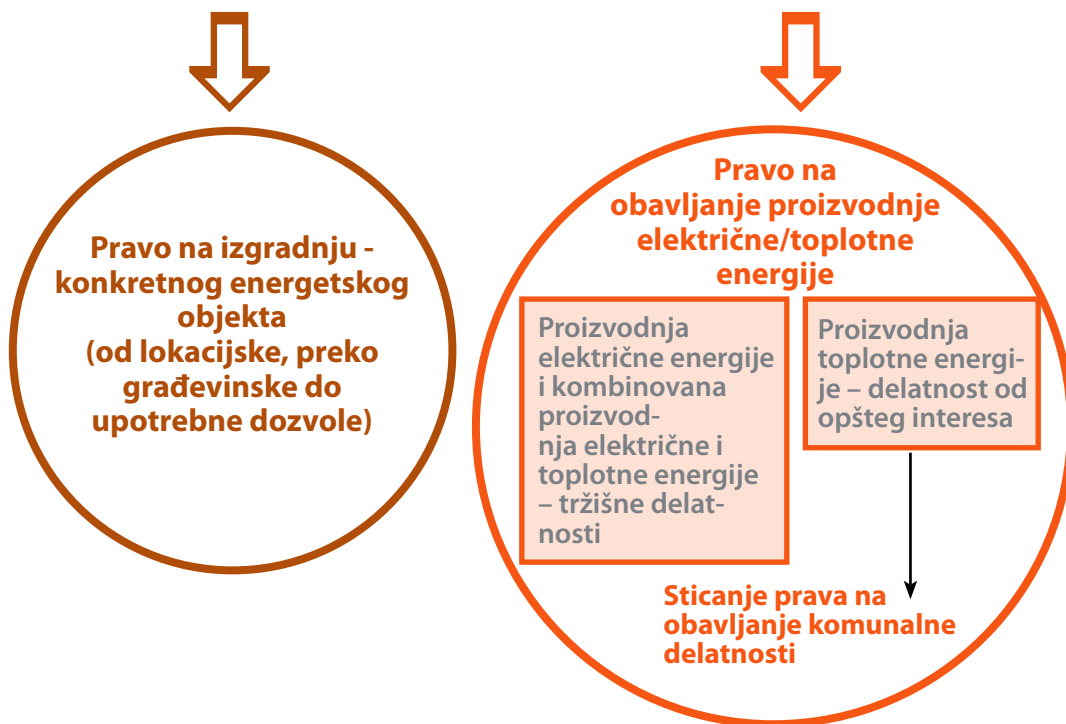
Rudarski objekti

Korišćenje hidrogeotermalne energije



Postrojenja na hidrogeotermalnu energiju

Investitor treba da stekne sledeća prava:





Sticanje prava na izgradnju postrojenja

II-1 Pribavljanje informacije o lokaciji

II-2 Pribavljanje energetske dozvole

Izrada Prethodne studije opravdanosti sa generalnim projektom

Rešavanje Imovinsko-pravnih odnosa / Parcelacija i preparcelacija

Prikupljanje uslova za projektovanje

II-3 Pribavljanje lokacijske dozvole*

Izrada Studije opravdanosti sa idejnim projektom / Glavni projekat

Izrada studije o proceni uticaja na životnu sredinu

II-4 Pribavljanje građevinske dozvole

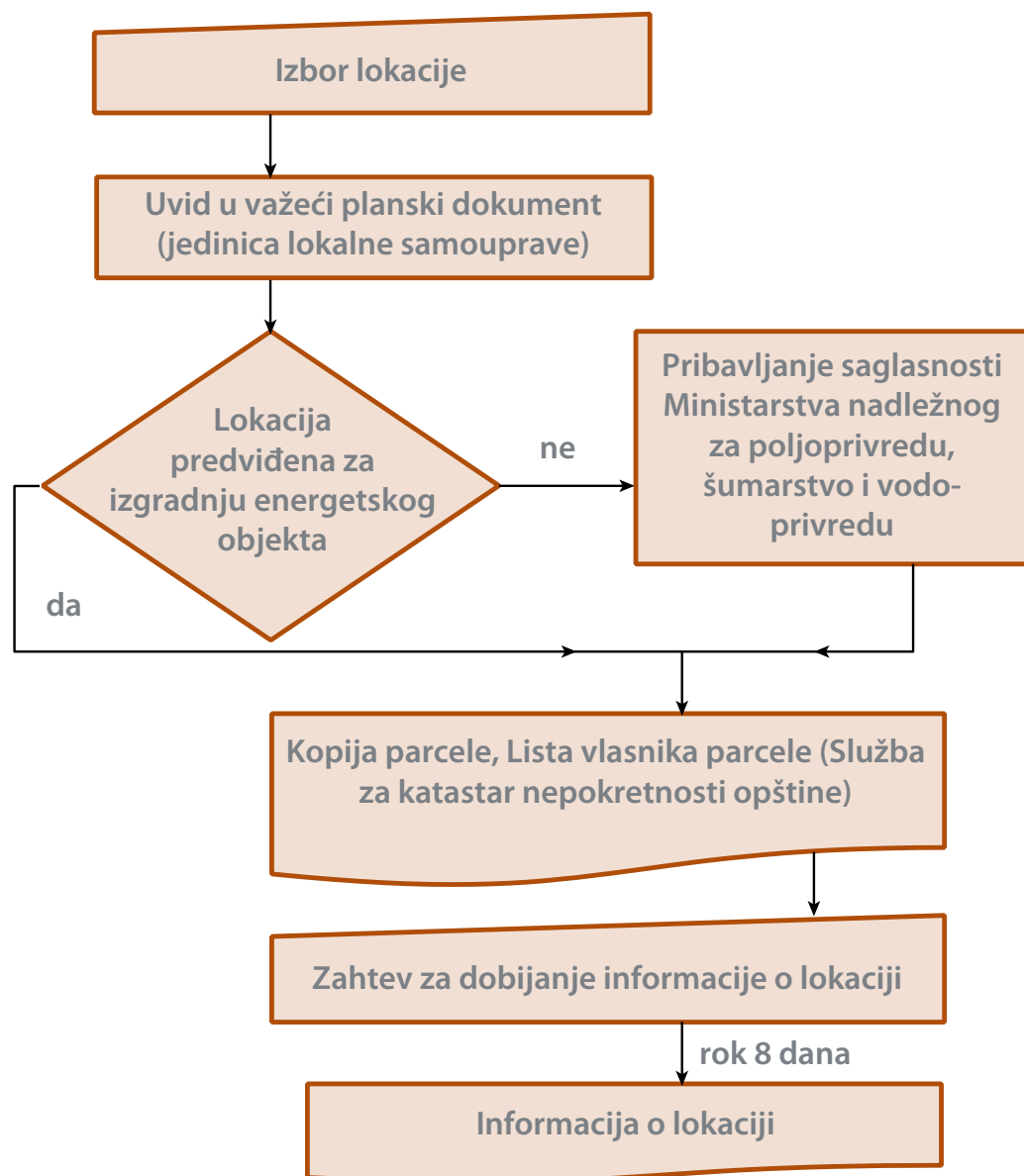
Izgradnja objekta

II-5 Pribavljanje vodne dozvole i upotrebne dozvole

**može se sprovesti pre ili posle pribavljanja energetske dozvole*

II-1

Izbor lokacije, uvid u važeće planske dokumente i informacija o lokaciji

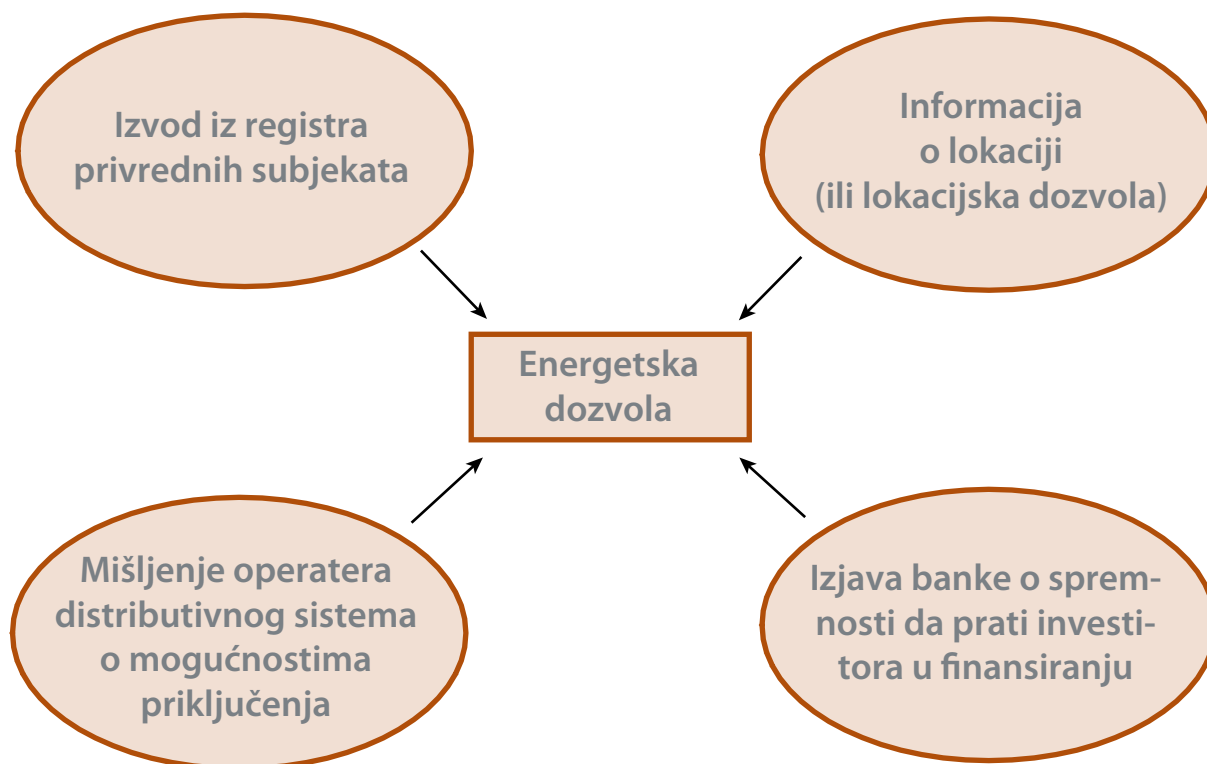


Napomena

Analiza i izbor potencijalne lokacije za izgradnju postrojenja i njegov izbor su prvi korak, koji u značajnoj meri opredeljuje izradu tehničke dokumentacije za izgradnju postrojenja

II-2

Energetska dozvola

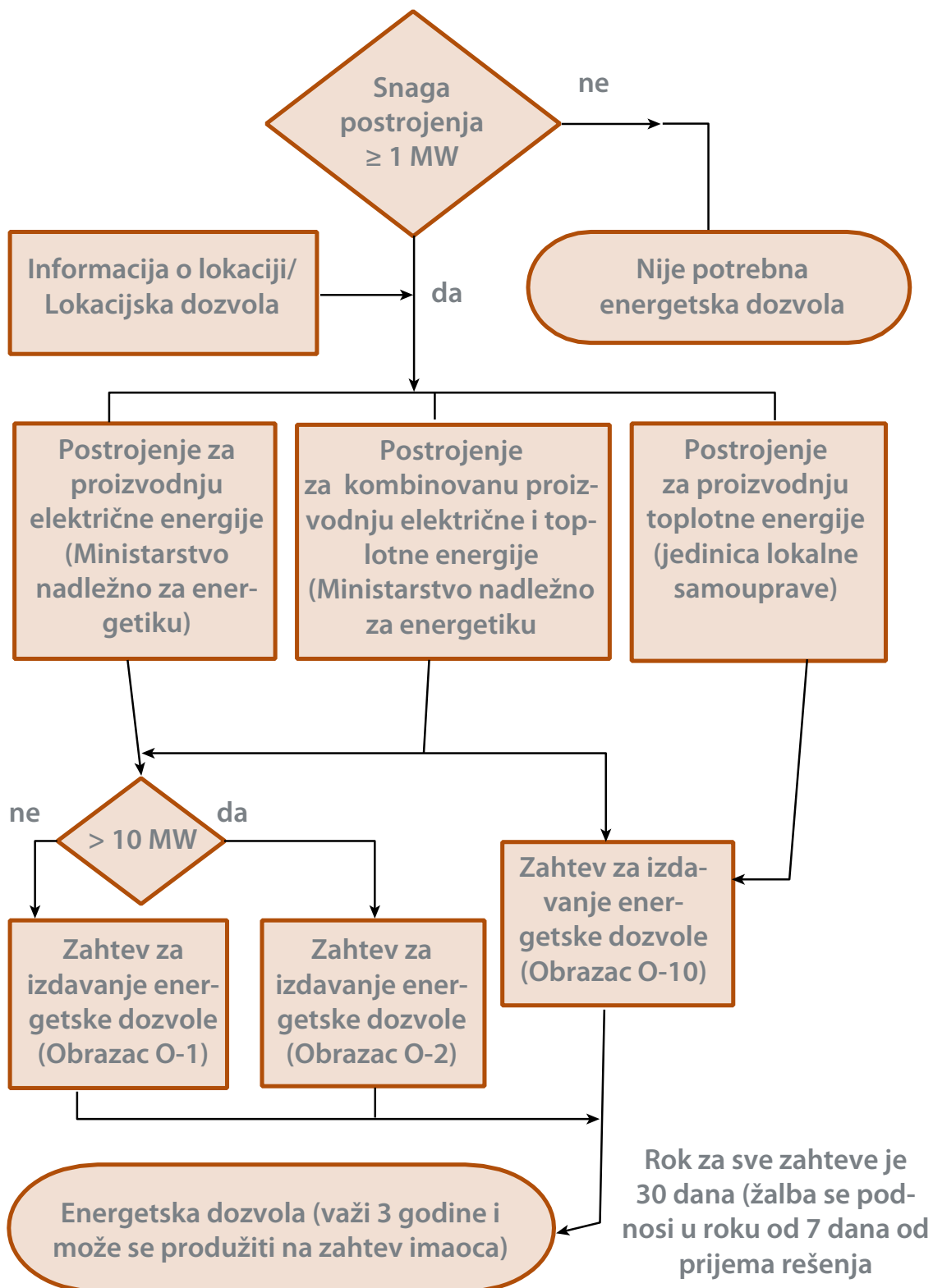


- Energetska dozvola je akt neophodan za pribavljanje građevinske dozvole propisan Zakonom o energetici
- Za postrojenja snage do 1 MW nije potrebno pribaviti energetska dozvolu

Napomena

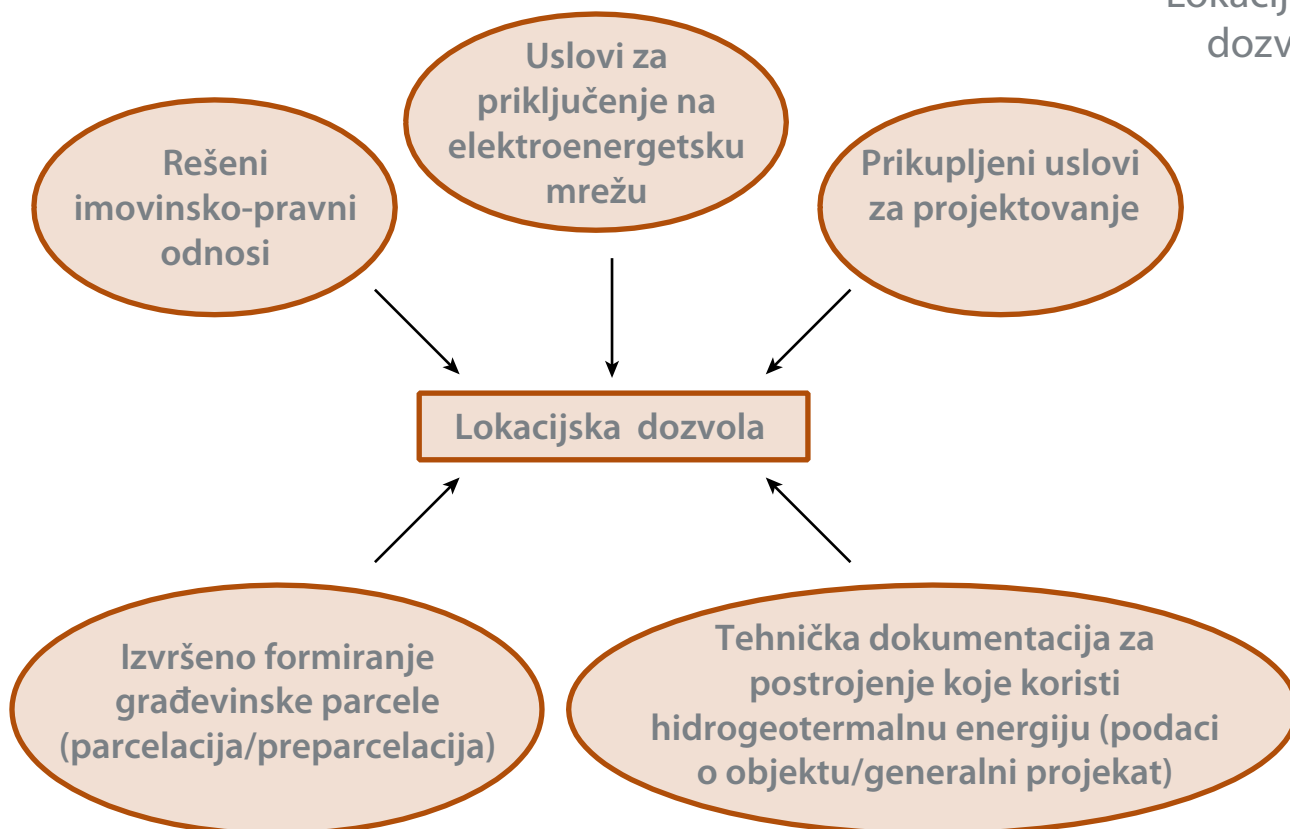
II-2

Pribavljanje energetske dozvole



II-3

Lokacijska dozvola

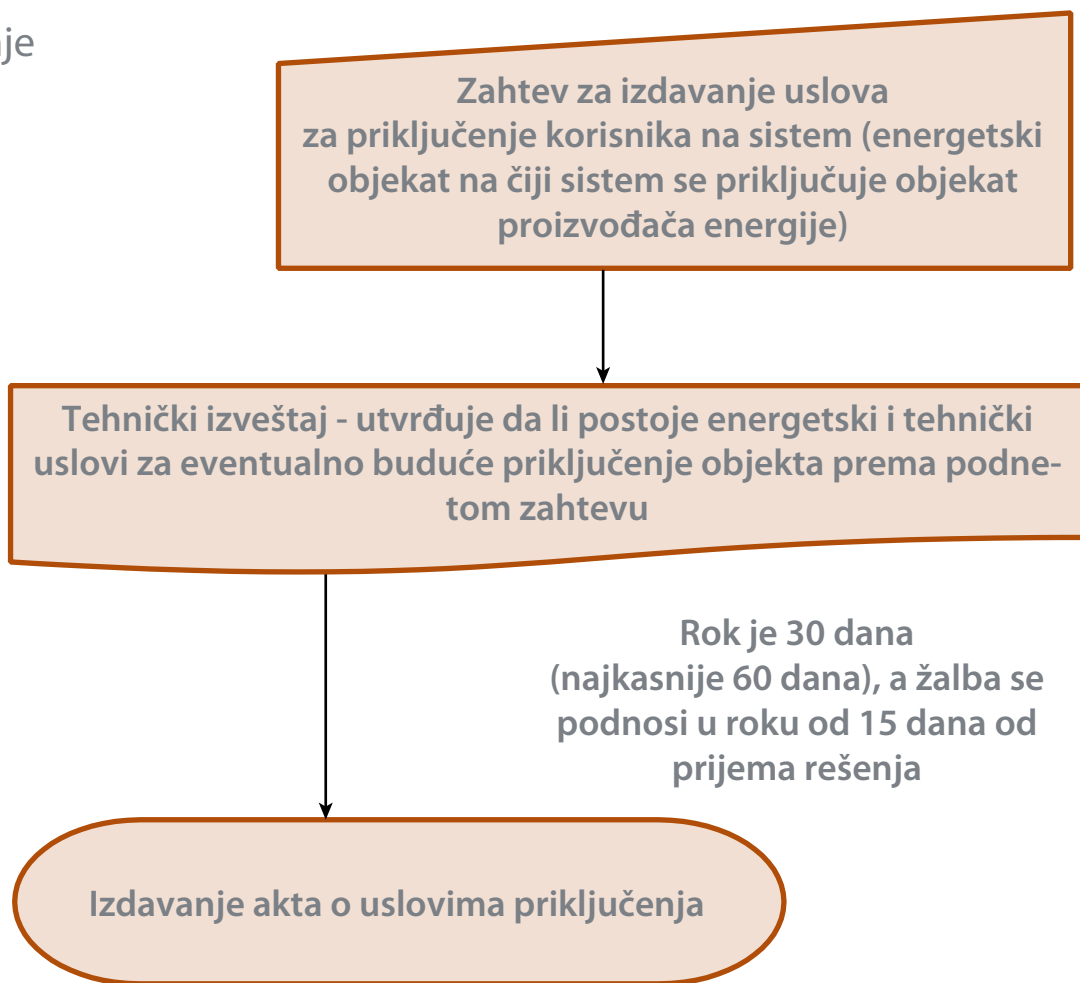


Lokacijska dozvola sadrži sve uslove i podatke potrebne za izradu tehničke dokumentacije, glavnog projekta, a u skladu sa važećim planskim dokumentom

Napomena

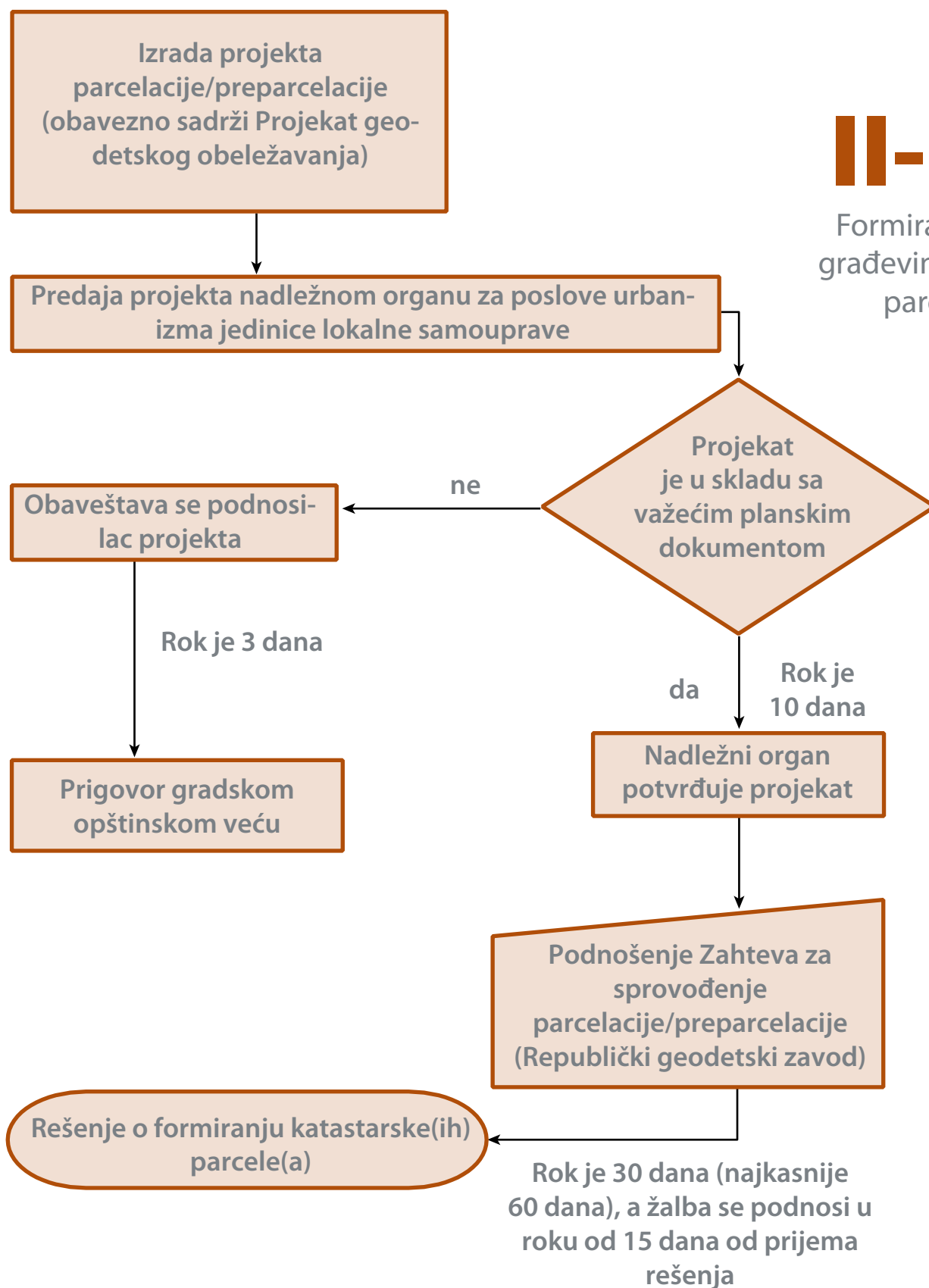
II-3

Uslovi za priključenje



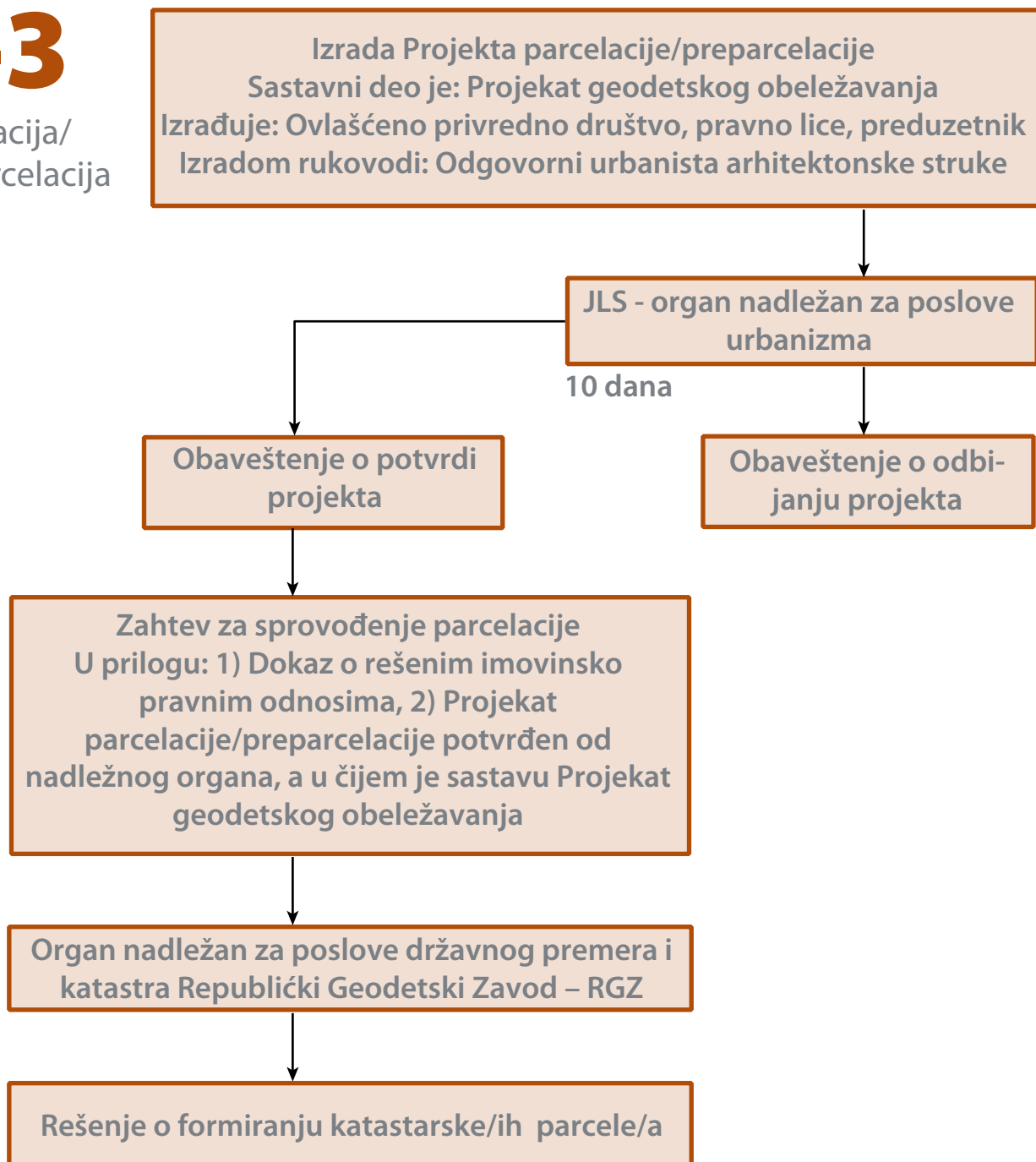
II-3

Formiranje građevinske parcele



II-3

Parcelacija/ preparcelacija





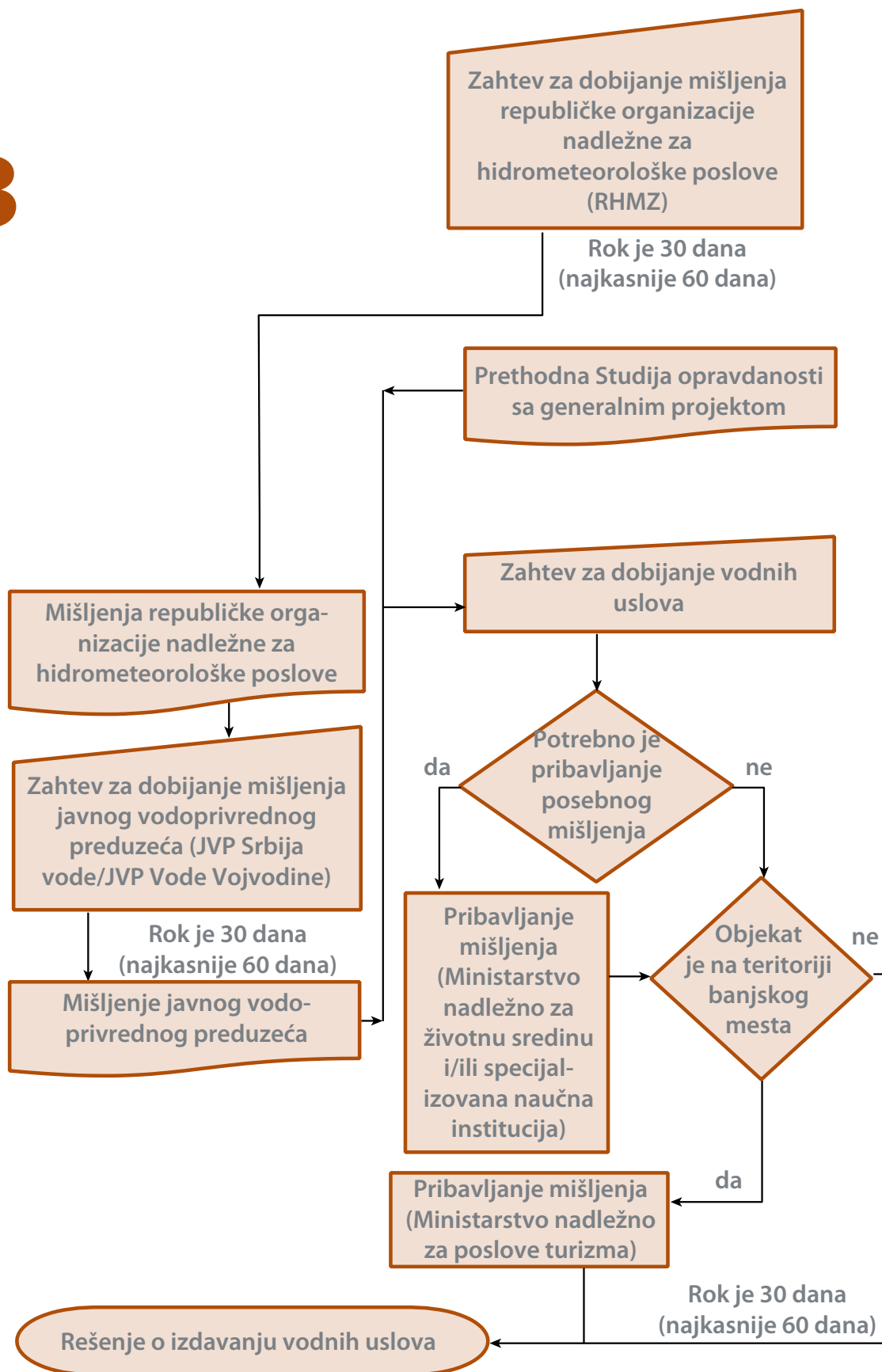
II-3

Vodna akta

- Vodna akta
 - vodni uslovi (II-3)
 - vodna saglasnost (II-4)
 - vodna dozvola (II-5)
 - vodni nalog
- Nadležnost
 - Ministarstvo nadležno za vodoprivredu
 - nadležni organ autonomne pokrajine (za objekte na teritoriji autonomne pokrajine)
 - nadležni organ grada Beograda (za objekte na teritoriji grada)

II-3

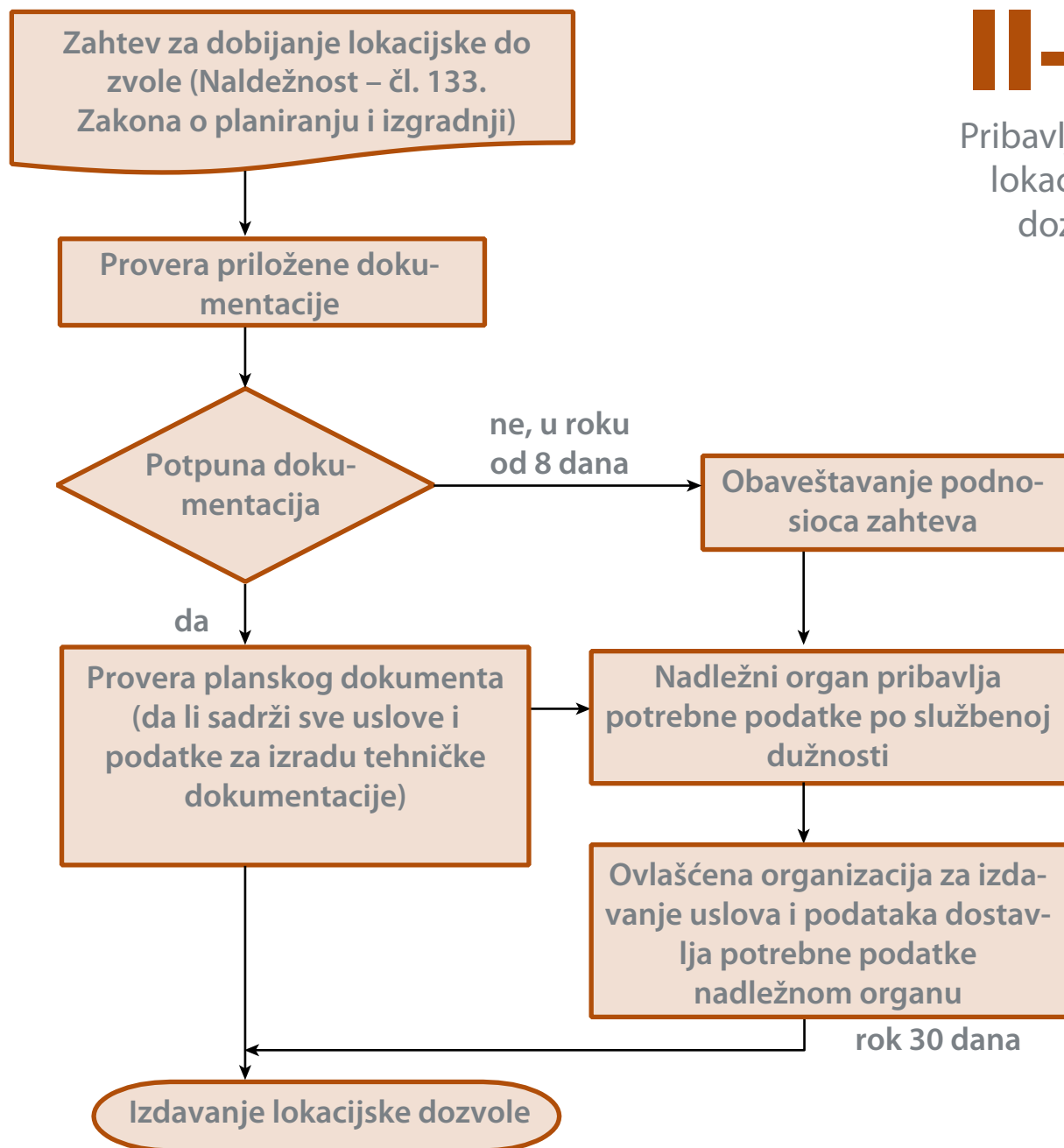
Vodni uslovi





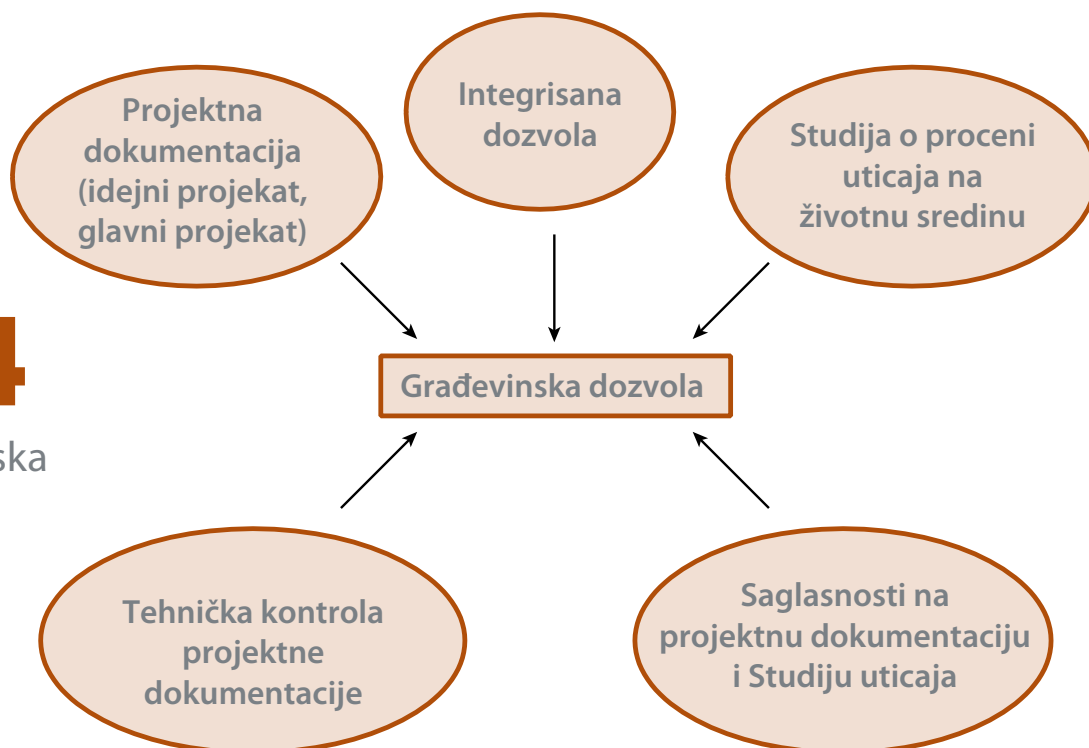
II-3

Pribavljanje lokacijske dozvole



II-4

Građevinska dozvola



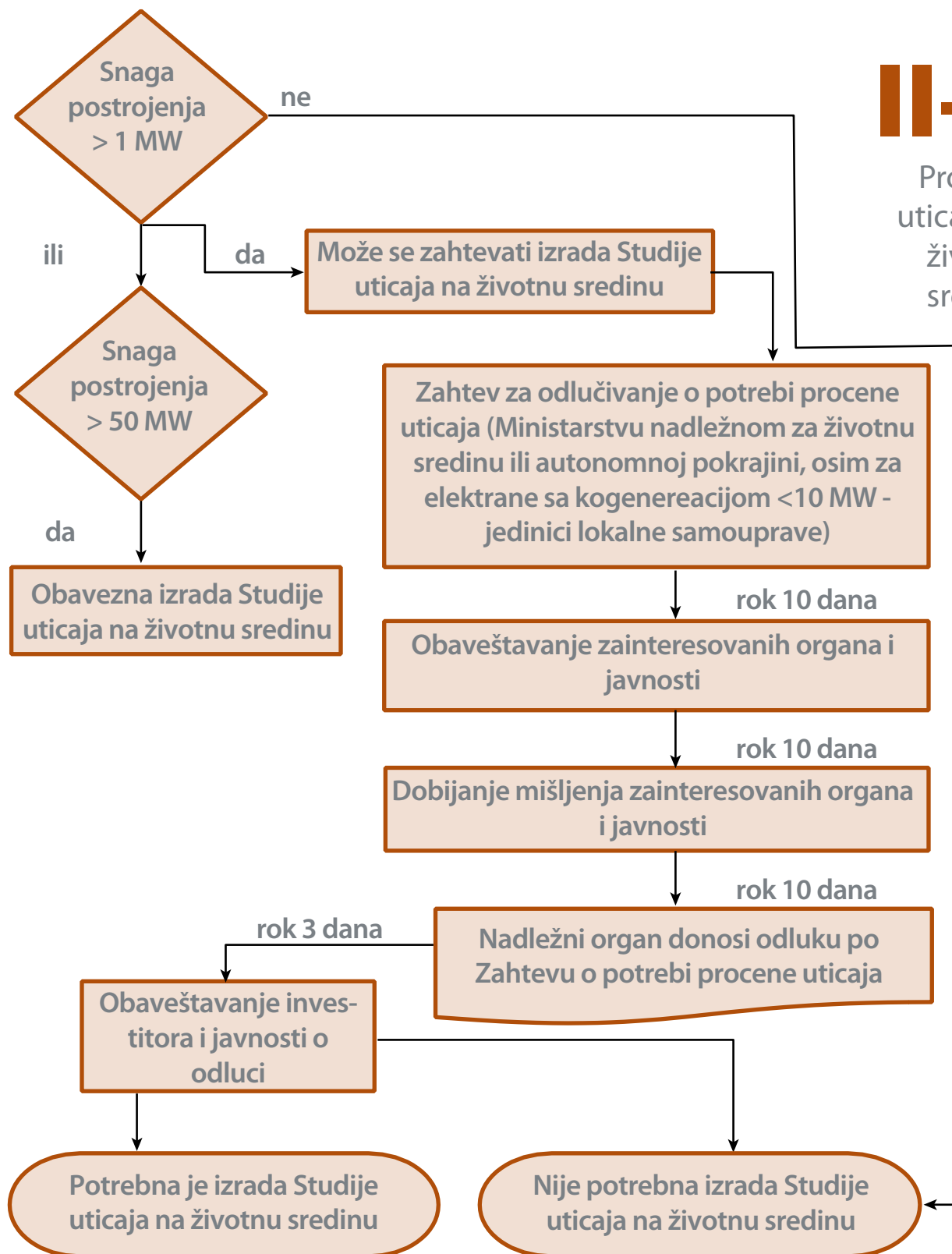
Po izvršenoj tehničkoj kontroli glavnog projekta i pozitivnom izveštaju o izvršenoj tehničkoj kontroli, podnosi se Zahtev za izdavanje Građevinske dozvole nadležnom organu iz člana 133. Zakona o planiranju i izgradnji:

- Sve elektrane za proizvodnju električne energije i postrojenja za proizvodnju toplotne energije ⇒ Ministarstvo/sekretarijat autonomne pokrajine nadležni za poslove gradjevinarstva, osim
- CHP elektrane snage manje od 10 MW ⇒ organ jedinice lokalne samouprave nadležan za poslove gradjevinarstva, ukoliko nisu višlje od 50 MW, ili se grade u granicama nepokretnih kulturnih dobara od izuzetnog značaja i kulturnih dobara upisanih u Listu svetske kulturne i prirodne baštine, objektu u zaštićenoj okolini kulturnih dobara od izuzetnog značaja sa određenim granicama katastarskih parcela i objektu u zaštićenoj okolini kulturnih dobara upisanih u Listu svetske kulturne i prirodne baštine, objekata u zaštićenim područjima u skladu sa aktom o zaštiti kulturnih dobara (osim pretvaranja zajedničkih prostorija u stan, odnosno poslovni prostor u zaštićenoj okolini kulturnih dobara od izuzetnog značaja i kulturnih dobara upisanih u Listu svetske kulturne baštine), kao i objektu u granicama nacionalnog parka i objektu u granicama zaštite zaštićenog prirodnog dobra od izuzetnog značaja (osim porodičnih stambenih objekata, poljoprivrednih i ekonomskih objekata i njima potrebnih objekata infrastrukture, koji se grade u selima)



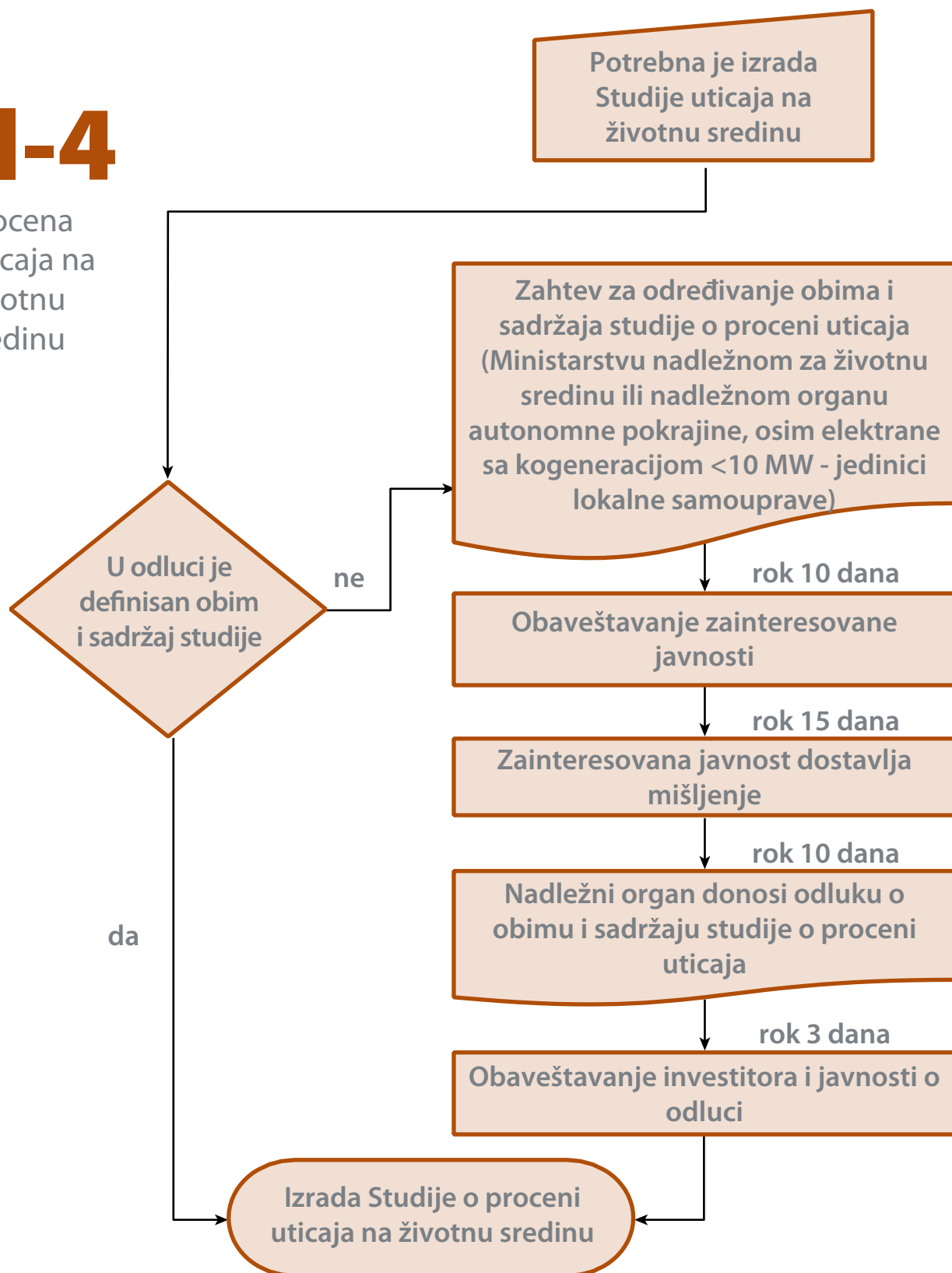
II-4

Procena uticaja na životnu sredinu (1)



II-4

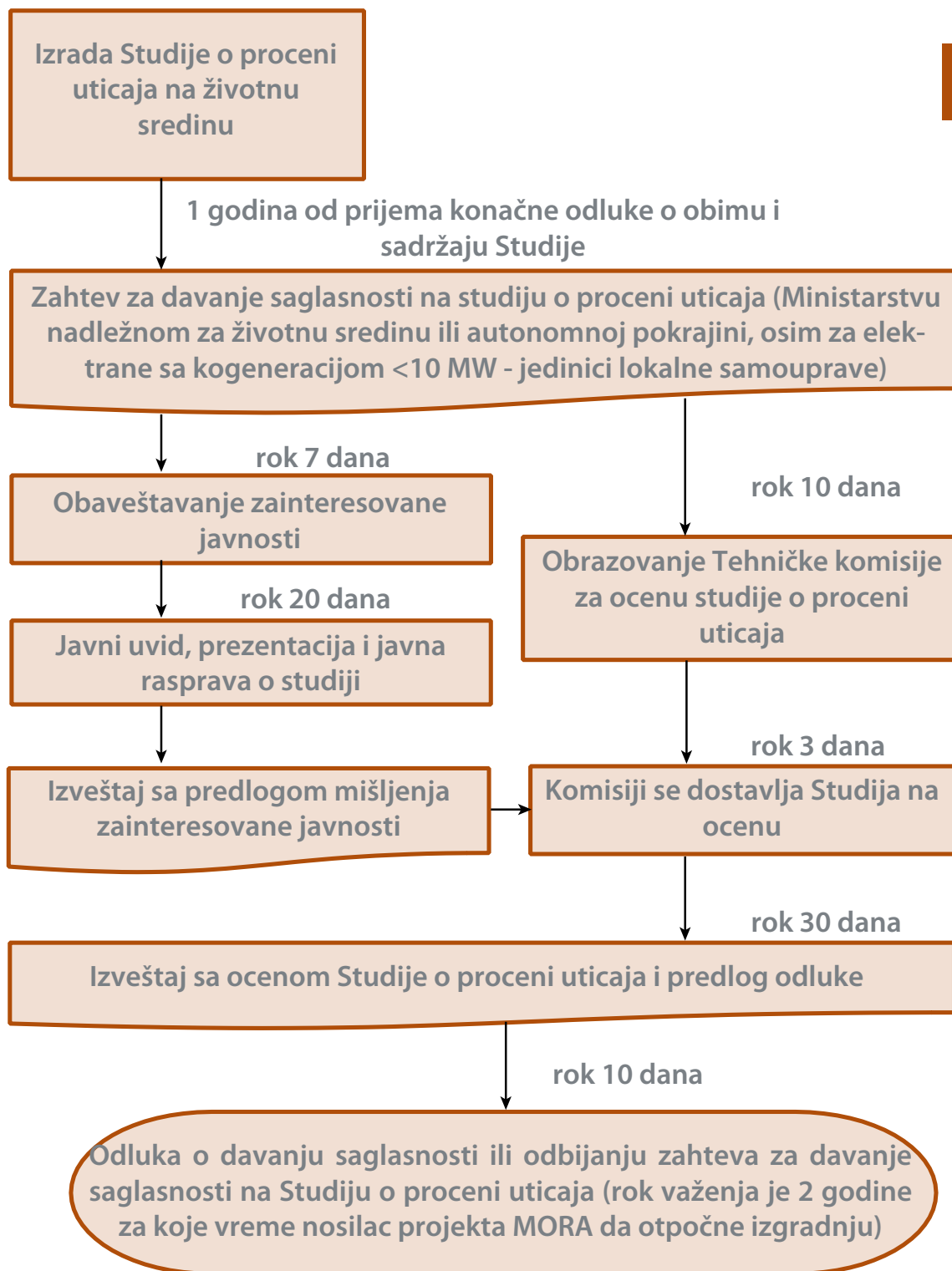
Procena
uticaja na
životnu
sredinu
(2)





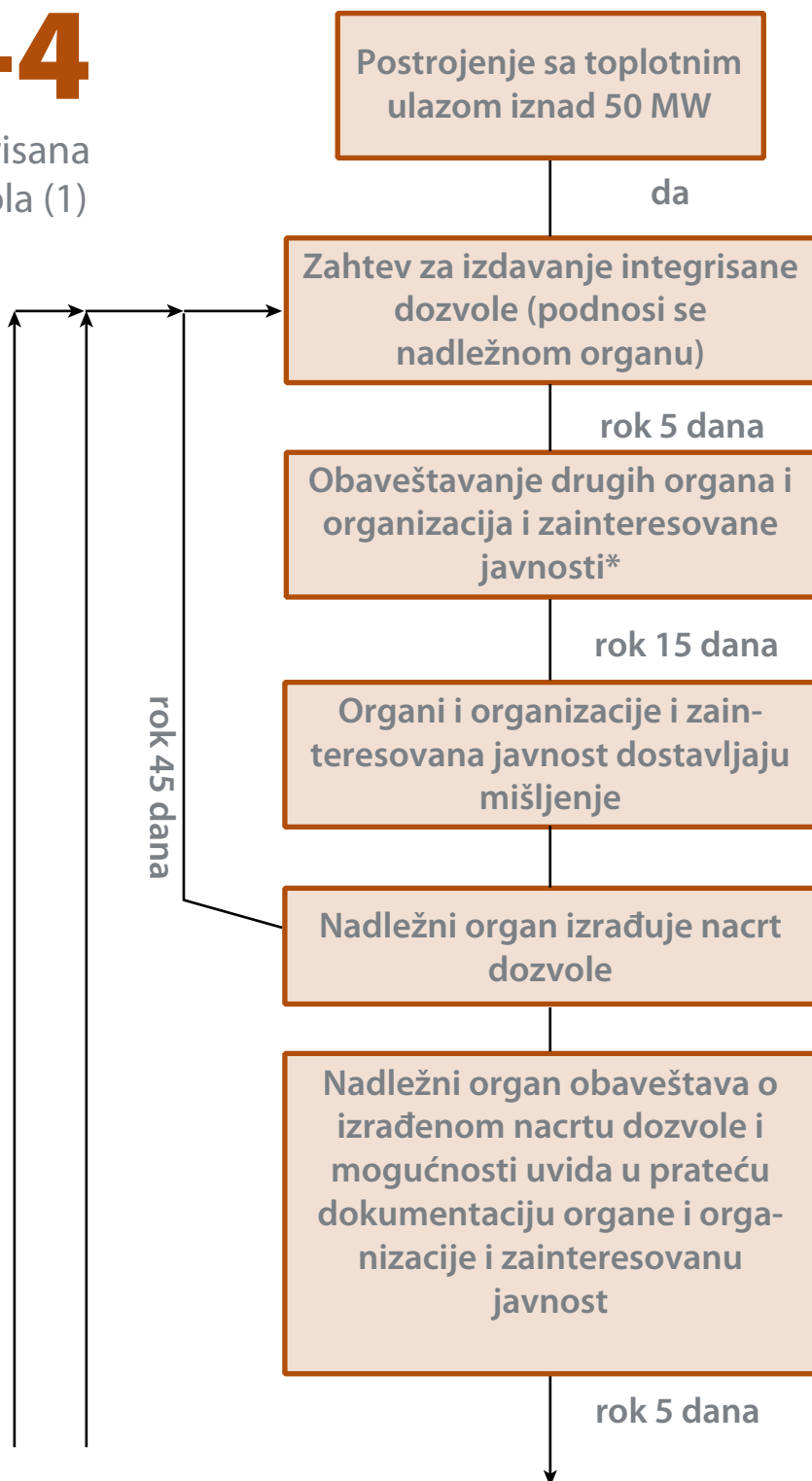
II-4

Procena
uticaja na
životnu
sredinu
(3)



II-4

Integrirana dozvola (1)

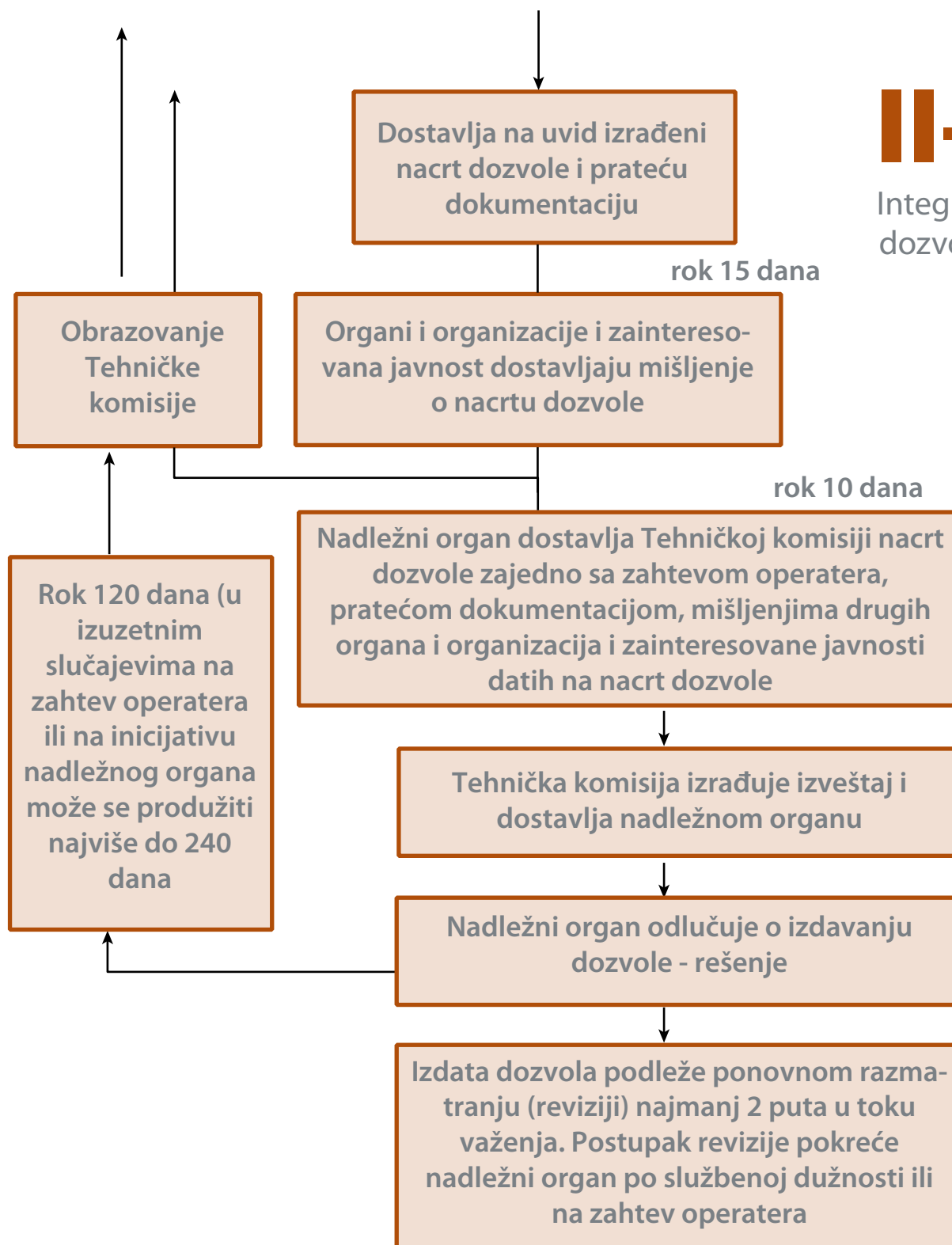


*organi i organizacije su iz oblasti poljoprivrede, vodoprivrede, šumarstva, planiranja, izgradnje, saobraćaja, energetike, rudarstva, zaštite kulturnih dobara, zaštite prirode i dr. I organa lokalne samouprave ne čijoj teritoriji se planira aktivnost.



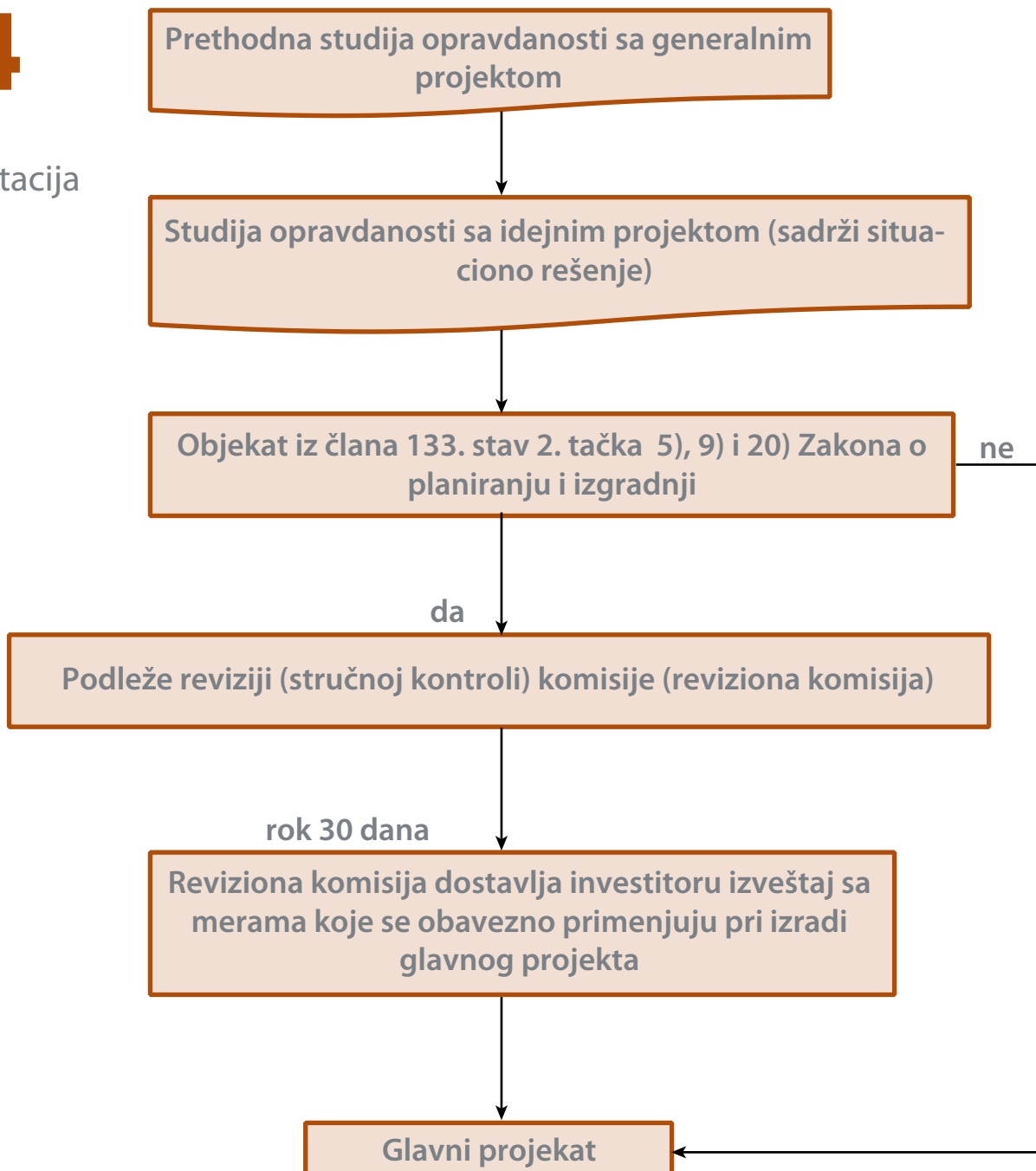
II-4

Integrisana dozvola (2)



II-4

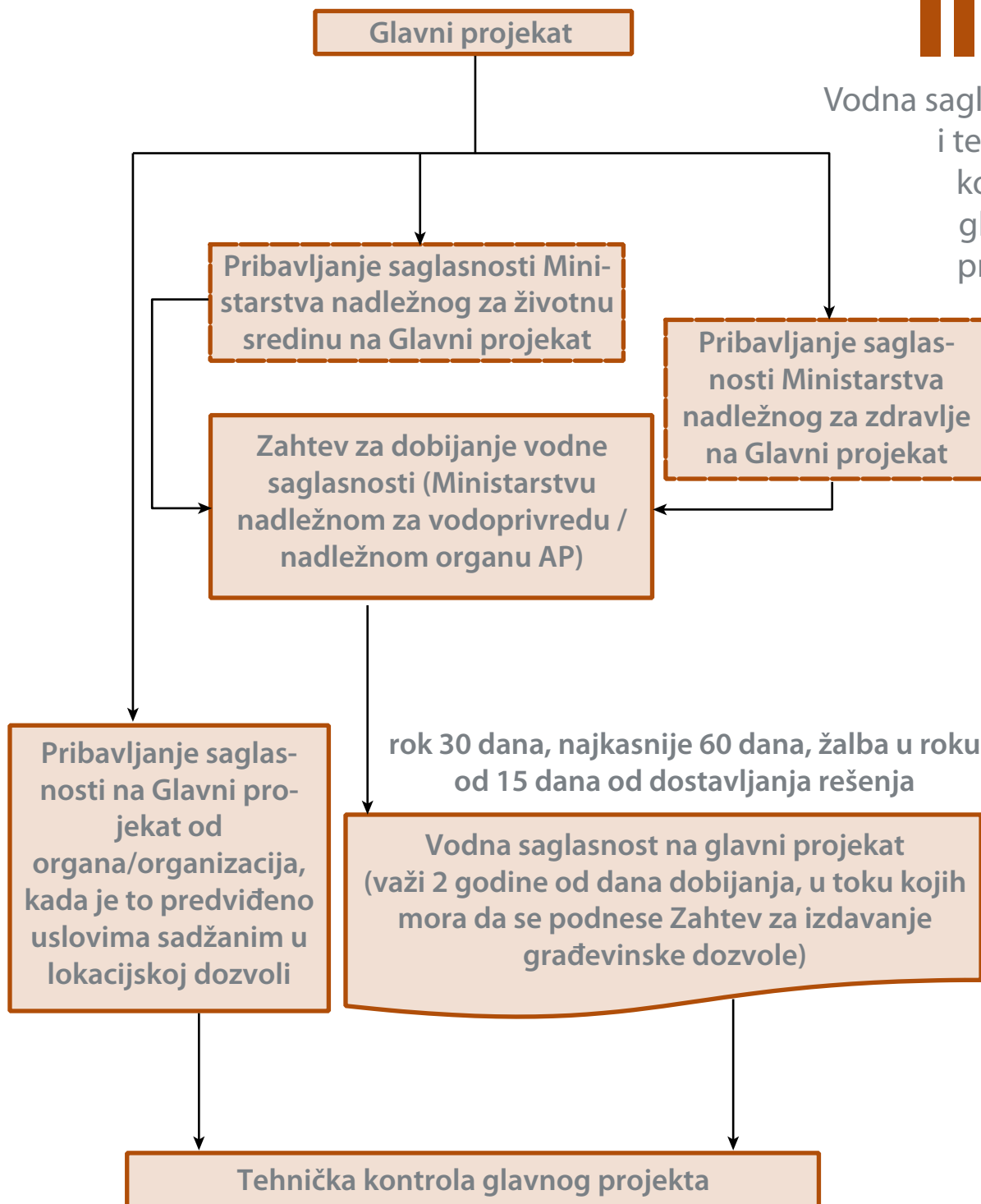
Tehnička dokumentacija





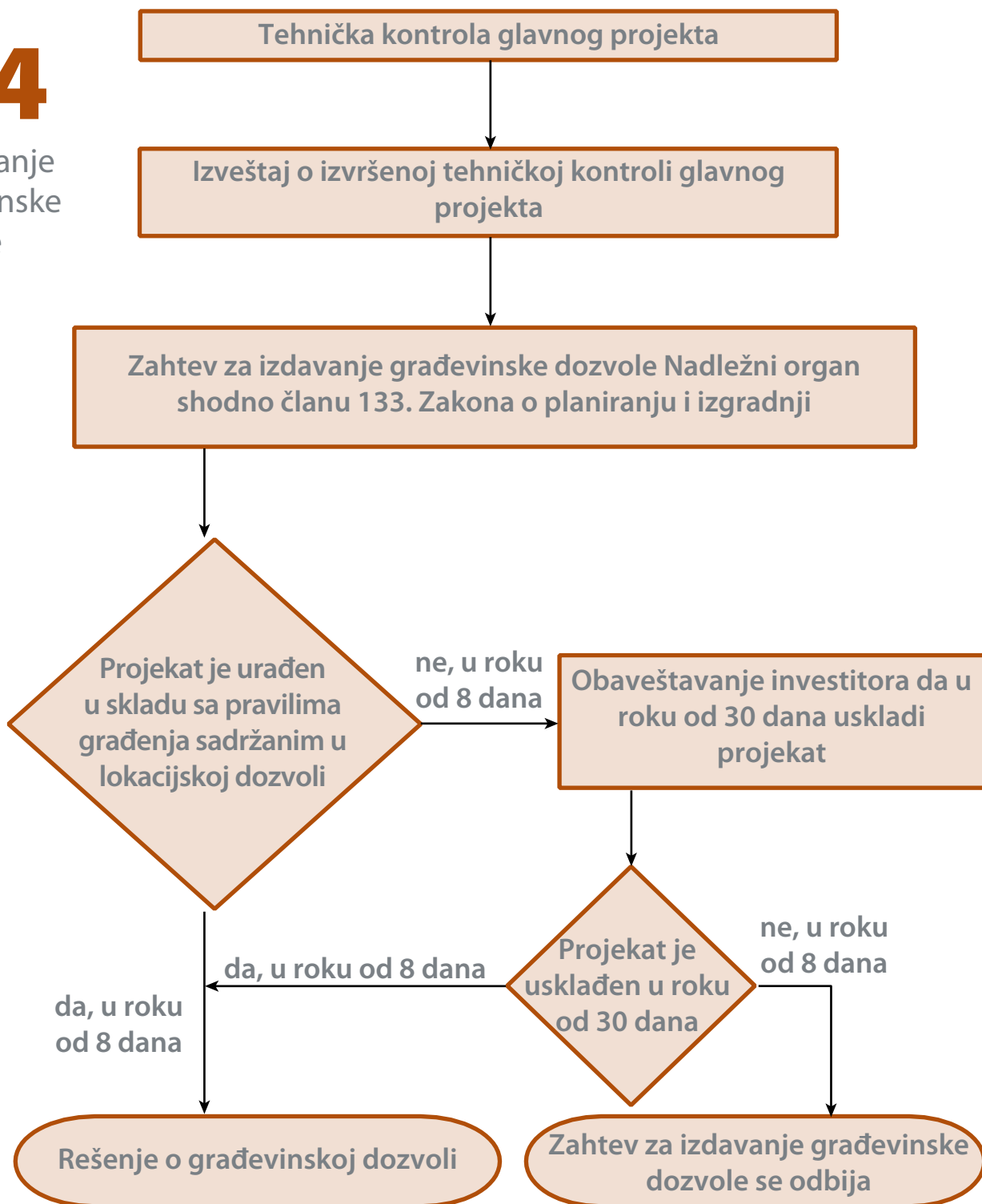
II-4

Vodna saglasnost
i tehnička
kontrola
glavnog
projekta



II-4

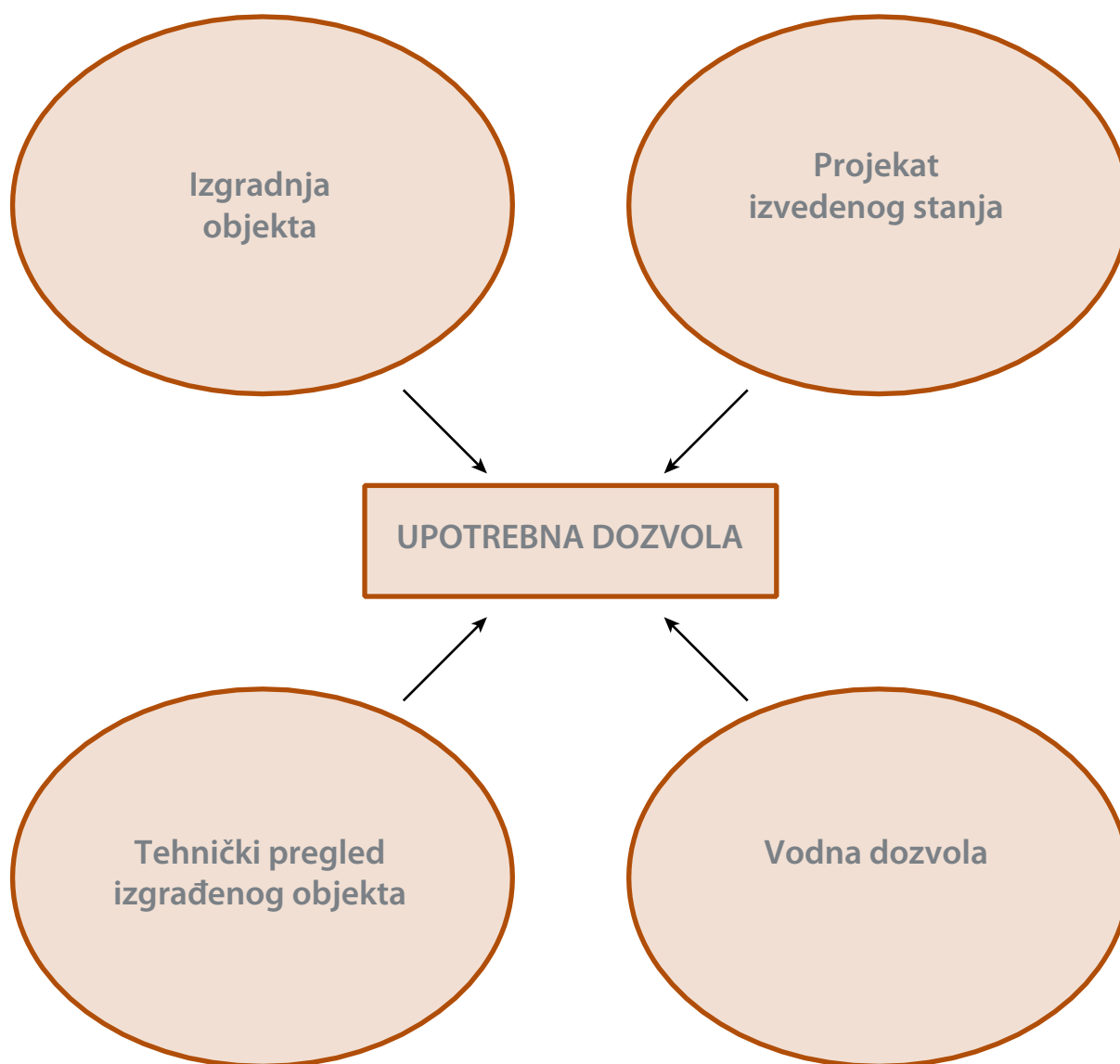
Pribavljanje
građevinske
dozvole



- Podobnost objekta za upotrebu utvrđuje se tehničkim pregledom
- Objekat se može koristiti po prethodno pribavljenoj upotrebnoj dozvoli
- U procesu dobijanja Upotrebne dozvole potrebno je priložiti Projekat izvedenog stanja

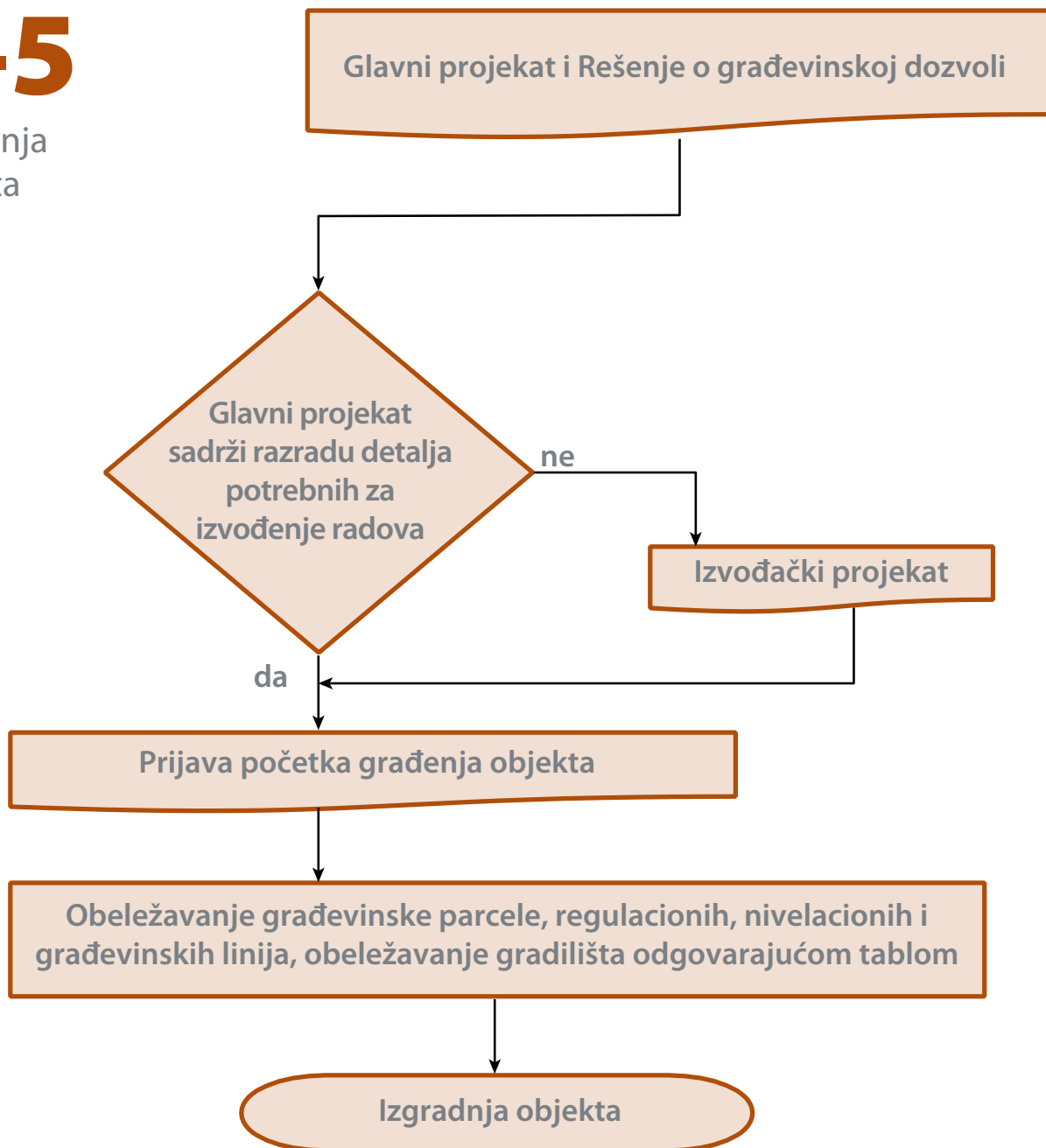
II-5

Upotrebna dozvola



II-5

Izgradnja objekta



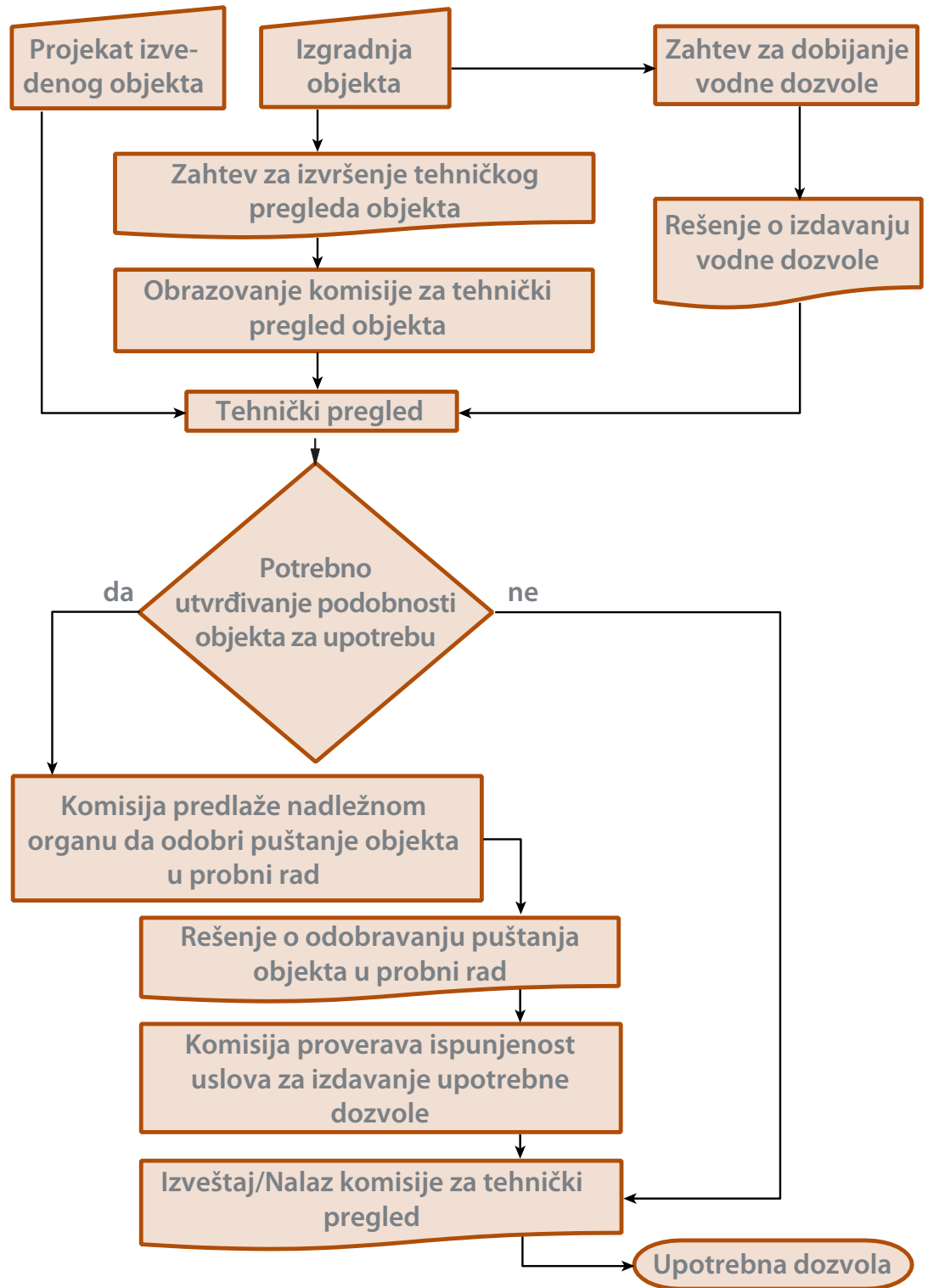
II-5

Izgradnja objekta

- Građenje objekata, odnosno izvođenje radova, može da vrši privredni subjekat upisan u odgovarajući registar za građenje objekata, odnosno za izvođenje radova (izvođač radova)
- Obaveze izvođača radova su da: pre početka radova potpiše glavni projekat, rešenjem odredi odgovornog izvođača radova, odgovornom izvođaču radova obezbedi ugovor o građenju i dokumentaciju na osnovu koje se gradi objekat, obezbedi preventivne mere za bezbedan i zdrav rad u skladu sa zakonom, da izvodi radove prema dokumentaciji na osnovu koje je izdata građevinska dozvola, organizuje gradilište na način kojim će obezbediti pristup lokaciji, obezbeđuje sigurnost objekta i lica na gradilištu i okoline, obezbeđuje dokaz o kvalitetu izvršenih radova, vodi građevinski dnevnik, građevinsku knjigu i obezbeđuje knjigu inspekcije, obezbeđuje objekte i okolinu u slučaju prekida radova.
- Na gradilištu je potrebno da se stalno nalazi ugovor o građenju, rešenje o određivanju odgovornog izvođača radova na gradilištu i glavni projekat, tj dokumentacija na osnovu koje se projekat gradi
- Investitor obezbeđuje stručni nadzor u toku građenja objekta, odnosno izvođenja radova za koje je izdata građevinska dozvola

II-5

Tehnički pregled i upotrebna dozvola





Sticanje prava na obavljanje proizvodnje električne/toplotne energije

- Tržišna delatnost
 - Proizvodnja električne energije
 - Kombinovana proizvodnja električne i toplotne energije
- Delatnost od opšteg interesa
 - Proizvodnja toplotne energije

**III-1 Pravo na obavljanje delatnosti od opšteg interesa*
i/ili Koncesija za korišćenje prirodnog bogarstva****

III-2 Licenca

III-3 Odobrenje za priključenje

III-4 Status povlašćenog proizvođača

III-5 Ugovor o otkupu električne energije

**pravo na obavljanje delatnosti obaveza,*

***koncesija mogućnost shodno zakonu koji uređuje koncesije*

III-1

Pravo na obavljanje proizvodnje toplotne energije – način sticanja



III-1

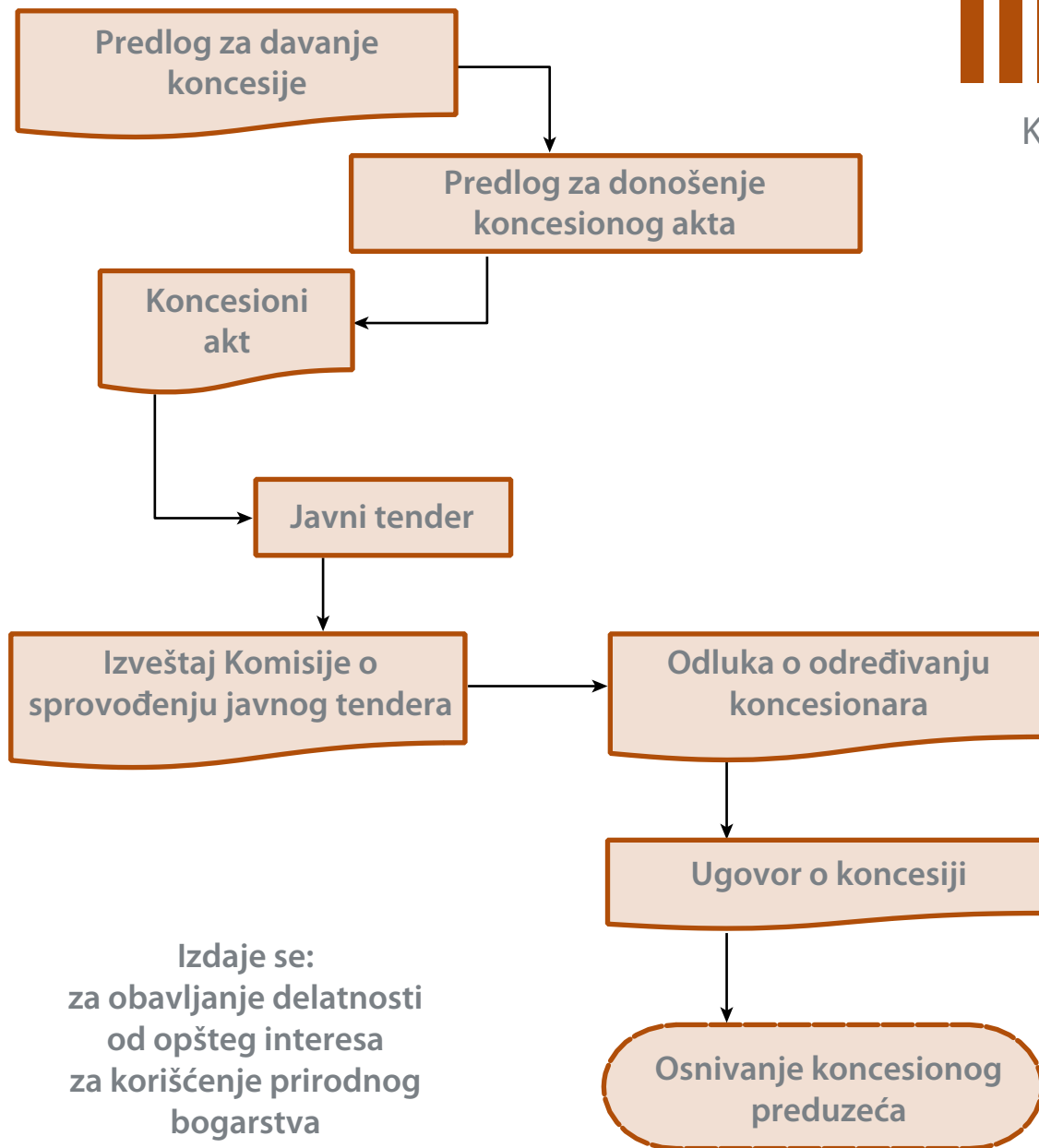
Poveravanje na obavljanje komunalne delatnosti

- Poveravanje se vrši na osnovu:
 - odluke skupštine jedinice lokalne samouprave o načinu obavljanja komunalne delatnosti
 - ugovora o poveravanju
- Finansiranje obavljanja komunalne delatnosti određuje postupak poveravanja njenog obavljanja:
 - vršilac dobija pravo da finansiranje obavljanja komunalne delatnosti obezbeđuje u celosti ili delimično naplatom naknade od korisnika usluga, na koji postupak se primenjuju odredbe zakona kojim se uređuju koncesije
 - obavljanje komunalne delatnosti finansira iz budžeta jedinice lokalne samouprave, na koji postupak se primenjuju odredbe zakona kojim se uređuju javne nabavke



III-1

Koncesija



III-1

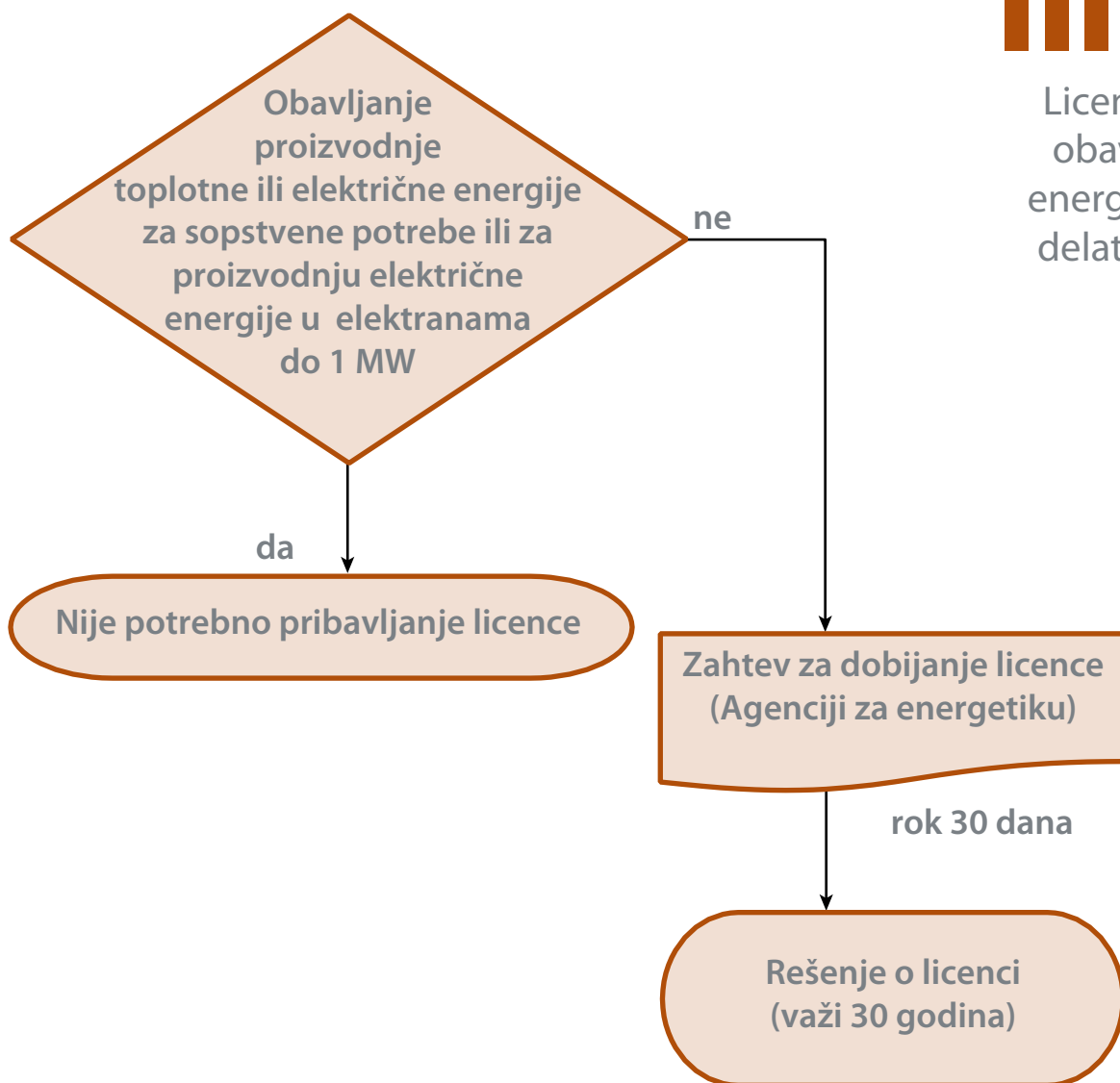
Koncesija –
sadržaj
ugovora
o koncesiji

- Ugovorne strane, predmet koncesije, uključujući opis objekata, uređaja, postrojenja
- Rok trajanja koncesije i uslovima pod kojim se taj rok može produžiti, dužini trajanja pripremnih radnji
- Raspodela rizika između privatnog i javnog partnera i obim isključivih prava privatnog partnera
- Visini i načinu obezbeđenja garancija za izvršavanje koncesione obaveze
- Uslovi obavljanja koncesione delatnosti i standardi proizvoda i usluga, transferu tehnologije
- Koncesionaj naknada (visina, rokovi, uslovi i način plaćanja)
- Prava i obaveze u pogledu preduzimanja mera obezbeđivanja opšte sigurnosti, zaštite zdravlja i zaštite životne sredine kao i odgovornosti za naknadu štete prouzrokovane ugrožavanjem opšte sigurnosti i zaštite životne sredine
- Prava na prenos koncesije
- Vreme i način predaje nepokretnosti, objekta, uređaja ili postrojenja i stanju u kome se oni moraju predati
- Uslovi izmena ili raskida ugovora i njihovim posledicama, promenjenim okolnostima i višoj sili
- Način rešavanja sporova i primena merodavnog prava
- Druge odredbe o kojima se sporazumno dogovore ugovorne strane. Ugovorom se određuje i način međusobnog obaveštavanja o izvršenju ugovora, načinu vršenja kontrole izvršenja ugovora i ostvarivanja prava i obaveza ugovornih strana



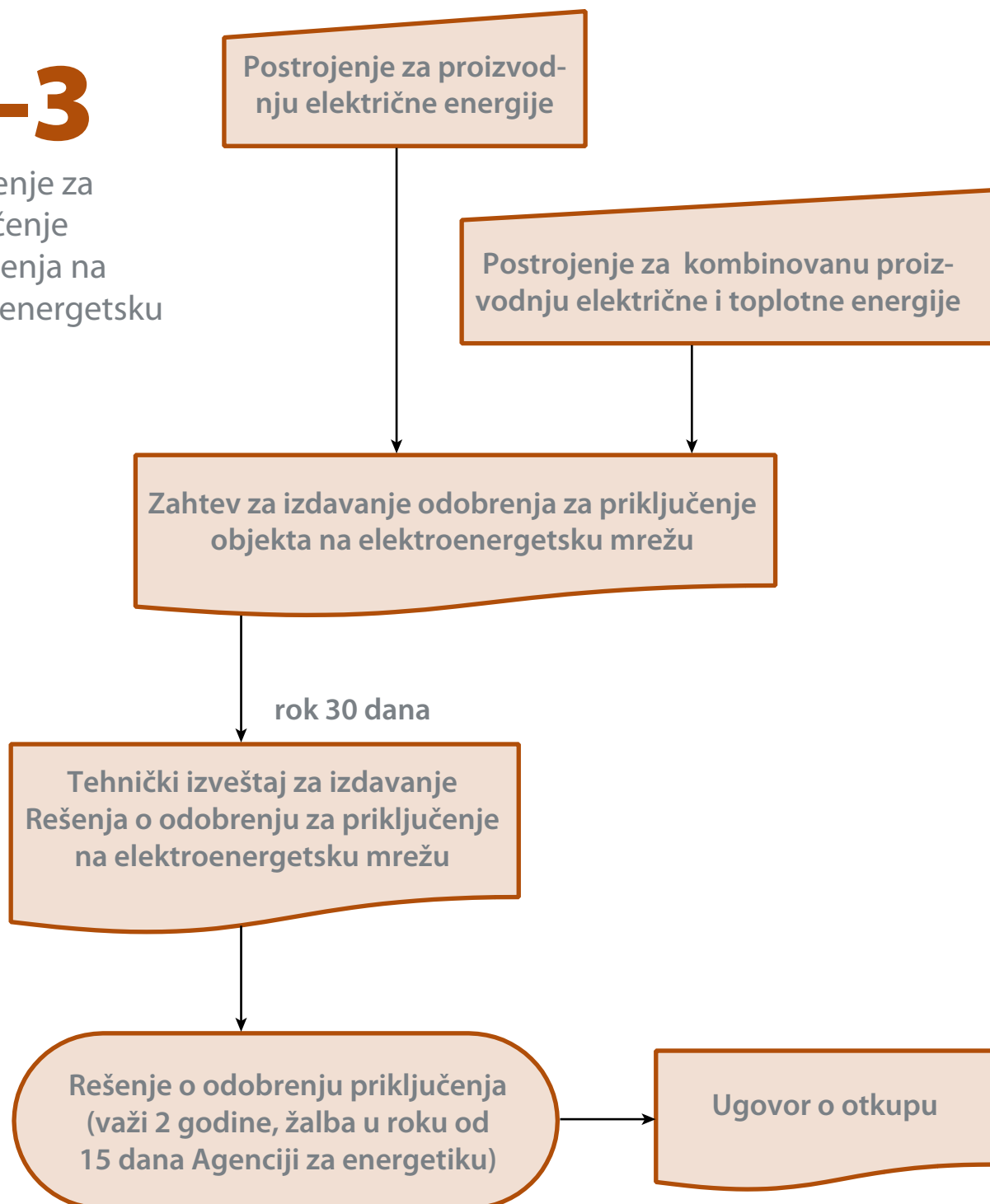
III-2

Licenca- za obavljanje energetskih delatnosti -



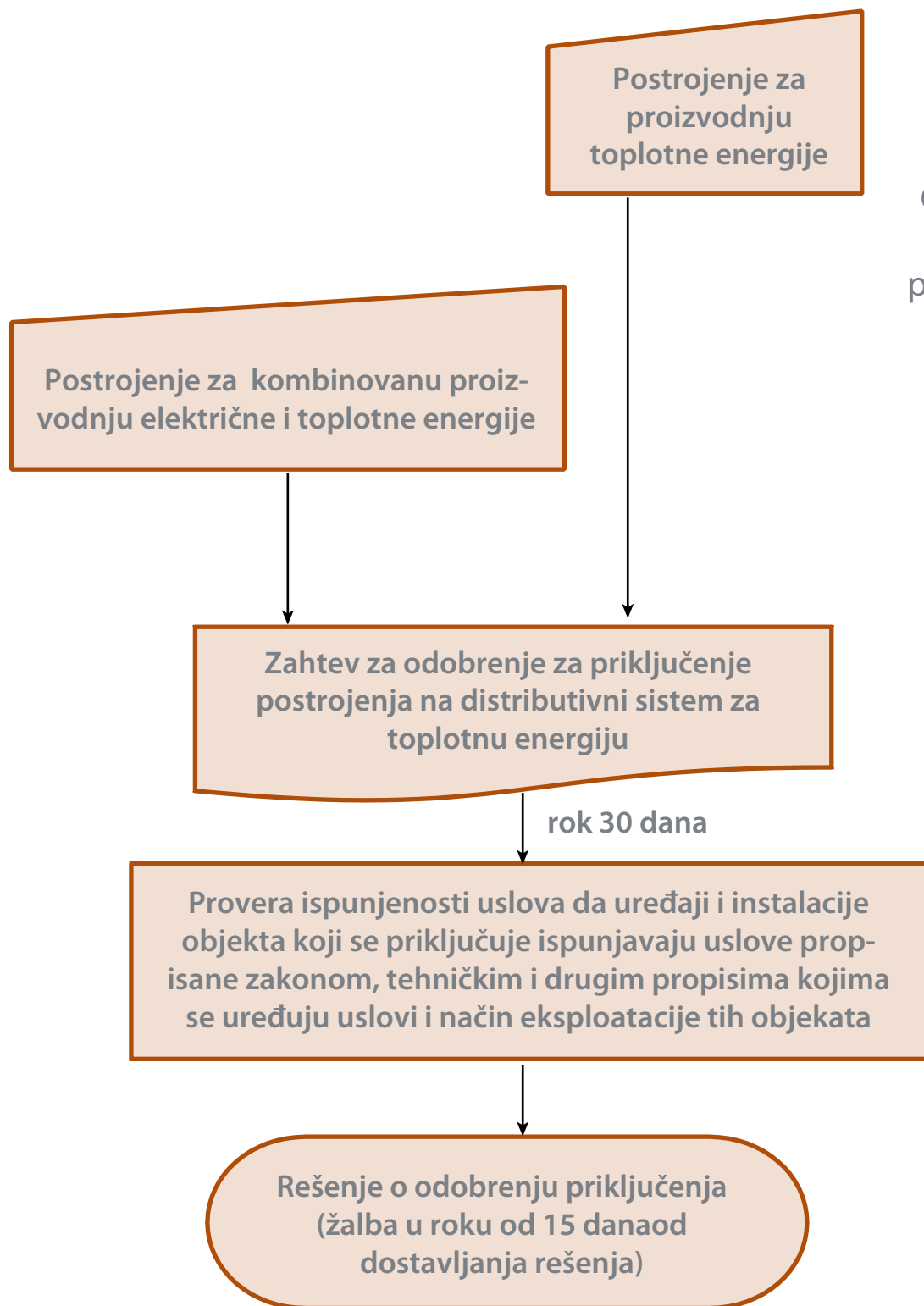
III-3

Odobrenje za priključenje postrojenja na elektroenergetsku mrežu



III-3

Odobrenje za priključenje postrojenja na mrežu za distribuciju toplotne energije



III-4

Status
povlašćenog
proizvođača

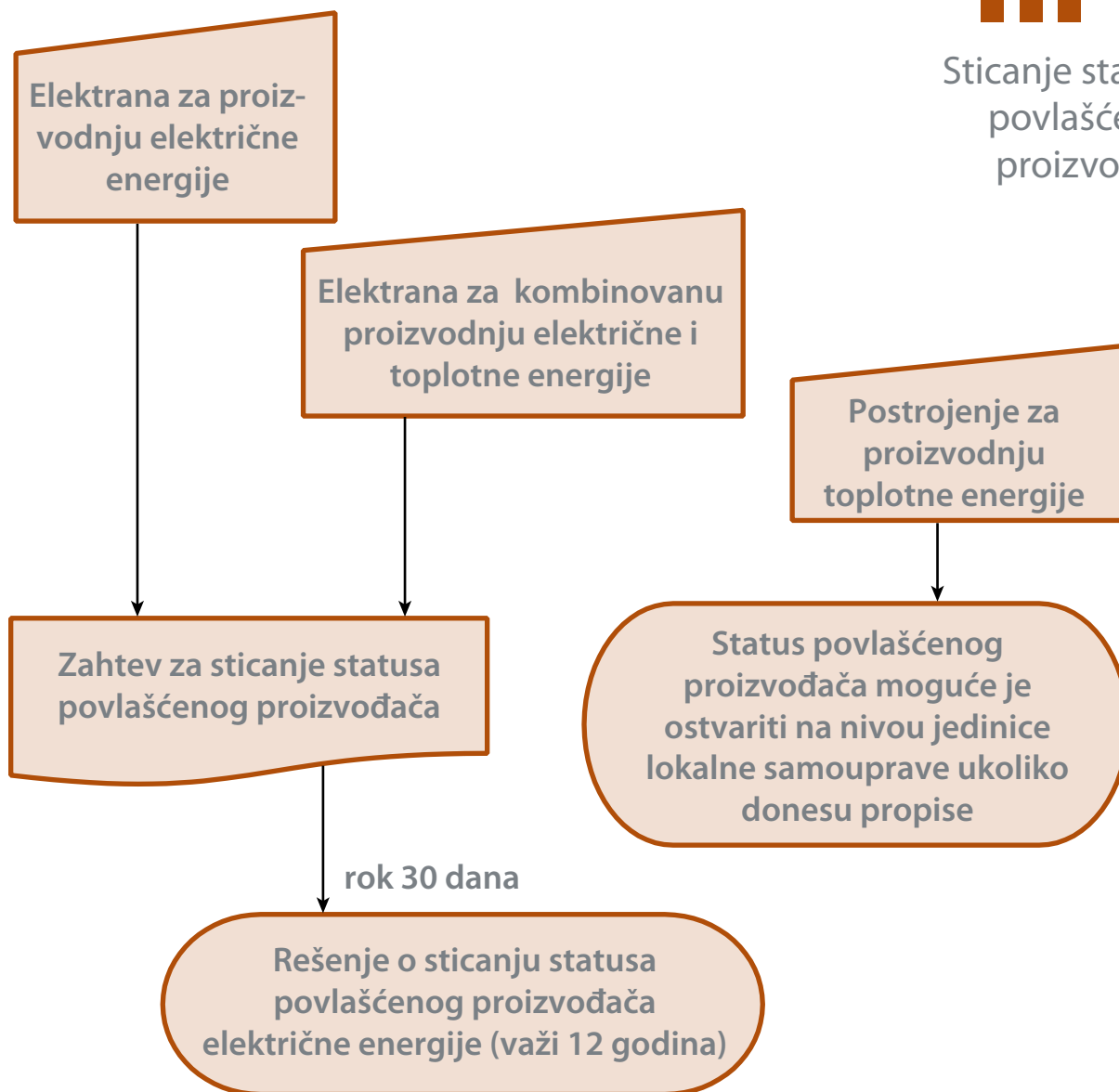
- Pravo prvenstva pri preuzimanju ukupno proizvedene električne energije u prenosni ili distributivni sistem, osim u slučaju kada je ugrožena sigurnost rada tih sistema
- Pravo na subvencije (poreske, carinske i druge olakšice)
- Mere podsticaja: 1) podsticajni period; 2) preuzimanje balansne odgovornosti; 3) besplatno očitavanje o proizvedene energije 4) pravo da nakon prestanka podsticajnog perioda zaključi ugovor sa javnim snabdevačem po ceni na organizovanom tržištu; 5) Feed-in tarife:

Vrsta elektrane	Instalisana snaga P(MW)	Mera podsticaja - otkupna cena (cEUR/1 kWh)
na geotermalnu energiju	do 1	9,67
na geotermalnu energiju	1 – 5	10,358-0,688*P
na geotermalnu energiju	preko 5	6,92



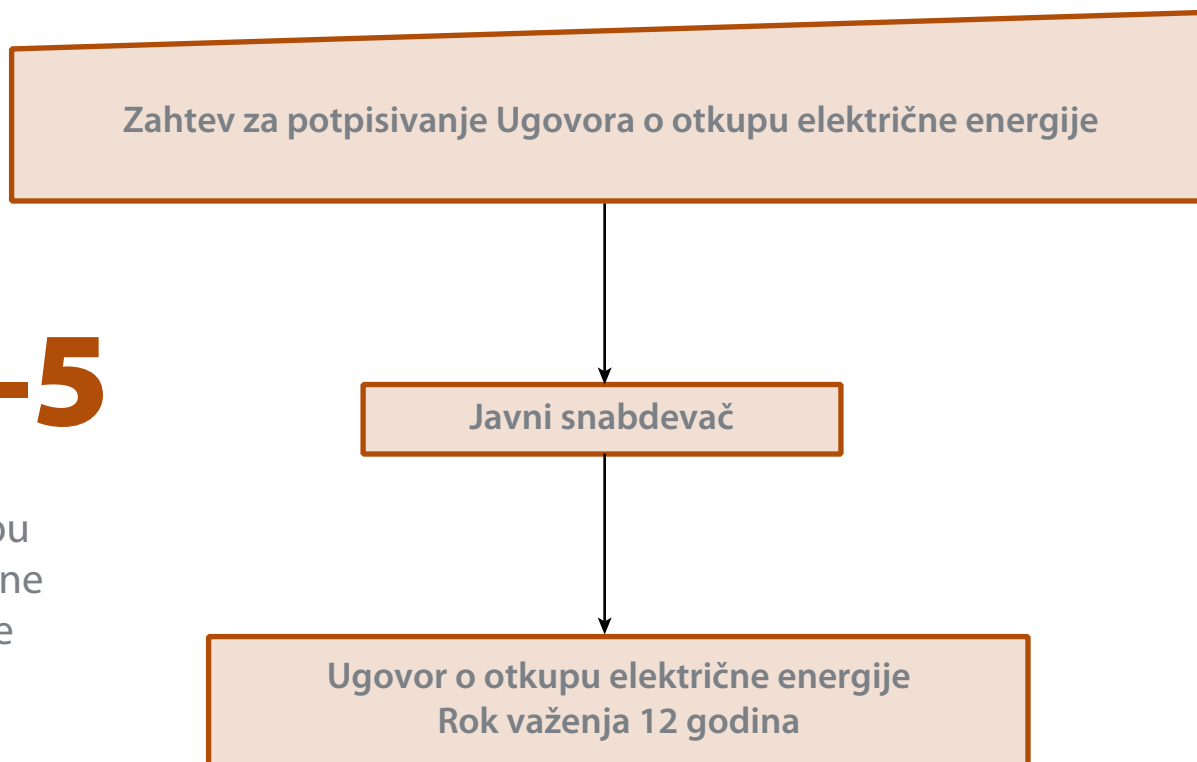
III-4

Sticanje statusa povlašćenog proizvođača



III-5

Ugovor
o otkupu
električne
energije



NAPOMENA: Postoje i slučajevi ugovora o otkupu proizvedene električne energije, pre sticanja statusa, radi realizacije priključenja na mrežu



Početak proizvodnje (i prodaje) električne/toplotne energije

Garancija porekla

- Dokument koji ima isključivu funkciju da dokaže krajnjem kupcu da je dati udeo ili količina energije proizvedena iz obnovljivih izvora energije, kao i iz kombinovane proizvodnje električne i toplotne energije sa visokim stepenom iskorišćenja primarne energije
- Garanciju porekla izdaje operator prenosnog sistema za jediničnu količinu proizvedene energije od 1 MWh
- Garancija je dokument u elektronskom obliku i važi godinu dana od dana izdavanja
- Prenosiva je
- Garancija porekla izdata u drugim državama važi pod uslovima reciprociteta i u Republici Srbiji i u skladu sa potvrđenim međunarodnim ugovorom

