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<http://transenergy-eu.geologie.ac.at>

Questionnaire for authorities involved in management of geothermal energy and Database of authorities

TEMPLATE



	QUESTIONNAIRE - GEOTHERMAL REGULATION	Yes	No
A.1.1	Does legislation define geothermal energy clearly? What is (are) national definition (-s)? Which definition do you use?	Y	N
	Was Directive 28/2009 approved by your national Parliament/Government? When?	Y	N
A.1.2	Which parameters are used to further define the resource and mode of extraction and to guide the permitting process through which shallow and deep geothermal energy exploitation is regulated (in both heating and cooling mode): 1 - Depth? 2 - Water temperature? 3 - Flow rates? 4 - End use? 5 - Systems capacity/size?	Y Y Y Y Y	N N N N N
A.2.1	Is geothermal energy regulated effectively either through existing or new legislation?	Y	N
	Which authority issues licences for exploration and development of the resource?		
A.2.2	Is the state ownership of geothermal resources clearly defined at a national level? Which primary legislation covers it?	Y	N
A.2.3	Regulation of the right to use of the resource and granting a licence to an applicant to explore and exploit thermal water and geothermal energy is adopted through: 1 - Natural resources? 2 - Hydrocarbons? 3 - Mining? 4 - Groundwater? 5 - Planning laws? 6 - Separate geothermal act?	Y Y Y Y Y Y	N N N N N N
A.3.1	Does the system of licensing for exploration and exploitation of geothermal resources efficiently regulate and help to develop the national geothermal sector?	Y	N
A.3.2	The regulatory burden for shallow systems should be minimised. Does existing national planning, natural resource, environmental, water abstraction/exploitation or building legislation regulates the shallow commercial and deep geothermal sectors? Please, state the possible necessary modifications.	Y	N

A.3.3	Did you identify any shortfalls in the legislation for the licenses in actual operation? Is there a need for preparation of new Geothermal Act to address these shortfalls?	Y Y	N N
A.3.4	Is shallow geothermal energy exploration and development for large commercial systems regulated through local planning laws where the local government body could be the licensing authority?	Y	N
A.3.5	Is the licensing authority for exploration and development of deep geothermal resources the government department responsible for licensing mineral or other resources?	Y	N
	Are the relevant local authorities consulted in the licensing procedures for exploration and development of deep geothermal resources by the government department?	Y	N
A.3.6	Does the geothermal licensing system grant a license holder the exclusive rights to exploration and exploitation of geothermal resources over a defined area and period of time?	Y	N
A.3.7	Is the geothermal license holder protected from other external parties depleting or damaging the geothermal resource available within their licence area?	Y	N
	How this protection works? Has the licensing authority to take into consideration other existing natural resource licenses (e.g.: mining, hydrocarbons, CCS, quarrying, groundwater abstraction) in advance of issuing geothermal exploration and exploitation licenses?	Y	N
A.3.7	Are any conflicts between neighbouring users already appears? How the conflicts are mended?	Y	N
A.3.8	Is the geothermal licensing authority responsible to ensure that there will be no conflicting rights relating to overlap of geothermal licences with other resources?	Y	N
A.3.9	Is the geothermal resource (depth, water temperature, flow rates, end use, systems capacity/size, thermal output ...) clearly defined by the licensing authority as part of the license award process and available to the license holder?	Y	N
	Are legal conditions (such as ownership, rights of access, multiple resource licensing) specified in the process and attached to the licence?	Y	N
A.3.10	Is a national reference guide to legislation for geothermal energy exploration and exploitation available for sector stakeholders which provides an outline of regulations relating to licensing, taxation and fiscal conditions?	Y	N
A.3.11	Are the appropriate exemptions from the national planning regulation and environmental impact assessment regulations considered for the exploration stage of geothermal energy projects in order to assist in the development of the sector?	Y	N

A.3.12	Are the specific guidelines on the application procedure for deep geothermal exploration and exploitation licences available to help streamline application submissions: 1 - Outlines of the legislation regarding the granting of rights of ownership and of access to geothermal resources? 2 - Identification of the relevant licensing authorities and outlining the application process? 3 - Guidelines for technical inputs, work programmes and reporting requirements?	Y Y Y	N N N
A.3.13	Is the e-government portal for deep geothermal exploration license applications and legislative guidelines available?	Y	Y
A.3.14	Does the duration of the administrative process for the granting of a deep geothermal exploration or exploitation licences exceed an overall period of six months? What is the overall duration?	N	N
A.3.15	Is the validity of the geothermal exploration licence longer than six years? How long?	Y	N
	Is there a facility for periodic (annual or bi-annual) reviews by the licensing authority? 1 - Based on reporting of exploration results? 2 - Based on meeting expenditure commitments by the licence holder? 3 - Based on an agreed future work programme?	Y Y Y Y	N N N N
A.3.16	Has the programme plan and exploration results data together with proposed production models relating to any geothermal energy projects to be submitted to the appropriate national licensing authority in advance of awarding an exploitation license?	Y	N
	Have these data to fulfil all requirements of the primary legislation for natural resources, planning, EIS, groundwater (including monitoring data) in accordance with relevant EU Directives?	Y	N
A.3.17	Do the Deep Geothermal Energy exploitation permits have duration more than 30 years?	Y	N
	Is the exploitation permits renewal subject to a review of the: 1 - Production rates and their associated impacts on the geothermal reservoir and other natural resources? 2 - The economics of the project?	Y Y	N N

A.3.18	Requirements for submission of monitoring and production data for exploitation licenses are: 1 - Energy production? 2 - Temperature of the carrier fluid at surface? 3 - Flow rates of the carrier fluid? 4 - Pressure of the injected fluid? 5 - Temperature of the injected fluid? 6 - Chemistry of the produced waters? 7 - Chemistry of the injected/rejected waters?	Y Y Y Y Y Y Y	N N N N N N N
	Is the submission of these data to the licensing authority on a regular basis set out in the licence?	Y	N
	Reporting every month to Ministry of Environment (Slovak Hydro-meteorological Institute).		
A.3.19	Is the confidentiality of all submitted data associated with licensed geothermal exploitation operations considered: 1 - In the primary legislation? 2 - In the geothermal license confidentiality clause for the licence period? 3 - In the geothermal license for the defined confidentiality period? 4 - Confidentiality period set by the licensing authority after surrender of the license?	Y Y Y Y	N N N N
A.3.20	Are the groundwater abstraction/exploitation permits for geothermal energy production based on the national groundwater abstraction/exploitation and pollution control regulations?	Y	N
	Do the large-scale commercial shallow geothermal exploitation systems have a target of zero (or near zero) net water abstraction/exploitation from an aquifer or geothermal reservoir?	Y	N
A.3.21	Have users where reinjection is not applied (balneology, thermal spas) to follow surface water discharge licensing requirements with relevant local authorities?	Y	N
	Have minimal environmental impact of the proposed system and sustainability of the resource to be demonstrated?	Y	N
A.3.22	Have the cost of geothermal exploration licences to be set lower than the petroleum and mineral exploration licensing costs to reflect the comparatively lower economic return potential and to promote geothermal energy development as part of the national renewable energy action plans (NREAPs, RES Directive-2009/28/EC)?	Y	N
A.4.3	Is all deep geothermal energy production in concordance with the Groundwater Framework Directive-2000/60/EC, and national groundwater abstraction/exploitation legislation where implemented, including the requirement for the use of re-injection or closed circuit systems?	Y	N

A.5.1	Is there a body responsible for promotion and development of the geothermal energy sector in your country: 1 - National geothermal authority? 2 - Independent expert body (competent professional body)? 3 - Cooperative network of competent authorities?	Y Y Y	N N N
A.5.2	Is a geothermal licensing authority recruit geothermal energy experts with relevant professional accreditation to use best practice geothermal standards?	Y	N
	Are geothermal energy experts with relevant professional accreditation responsible for the: 1 - Issuing licences for exploration and development of geothermal resources? 2 - Reviewing and awarding the licences on a case specific basis? 3 - Facilitating and monitoring the geothermal licence application system?	Y Y Y	N N N
	Are there certification schemes for geothermal professionals?	Y	N
A.5.3	The responsible for the issuing of licences for exploration and development of geothermal resources, reviewing and awarding the licences on a case specific basis as well as facilitating and monitoring the geothermal licence application system is: 1 - Geothermal authority? 2 - Department responsible for natural resource exploration licensing?	Y Y	N N
A.5.4	The responsible for the issuing of licences for exploration and development of shallow geothermal resources, reviewing and awarding the licences on a case specific basis as well as facilitating and monitoring the geothermal licence application system is local authority?	Y	N
A.5.5	Is the authority responsible for granting the license for exploration and development of geothermal resources the same as that responsible for monitoring license holder's project data during exploration and exploitation? If not, what is their relation and are there any problems?	Y	N
A.6.1	Has your country adopt the national strategy that establishes the geothermal potential, identifies targets and increases the public awareness of geothermal energy?	Y	N
A.6.2	Which authority (organisation) is responsible to collect reliable statistics and prepare comprehensive compilation of geothermal, heating and cooling market data required to profile baseline market data and as well as monitoring of future sector growth?	Y	N

A.6.3	Is the central geothermal inventory from large commercial systems (shallow and deep) established in your country to: 1 - Collects, organize borehole completion information, production parameters and yearly monitoring data? 2 - Interprets borehole completion information, production parameters and yearly monitoring data? 3 - Planning license granting for resources exploration/exploitation? 4 - Implement national geothermal energy development strategy?	Y Y Y Y	N N N N
A.6.4	Are monitoring data included also from surface production facilities such as the heat or power plant efficiencies, heat output, electrical power output and fouling of heat exchangers? Are templates developed to ensure full reporting?	Y Y	N N
A.6.5	Are monitoring data available to the public: 1 - Restricted access? 2 - Free access? Is there any confidentiality period for exploration and exploitation licences?	Y Y Y	N N N
	Are Financial Incentives Schemes (FIS) play an essential role in promoting the development of national shallow and deep geothermal energy sectors for heating and cooling: 1 - Reduction of the upfront investment costs to users? 2 - Changed perception of geothermal energy systems by consumers and local authorities? 3 - Increased uptake of these systems?	Y Y Y	N N N
B.1.1	Is the exploration permit fee for the licence area: 1 - A single fee included in the initial licence application? 2 - Additional fee applied to specific works carried out as part of an exploration programme during the licence period? 3 - Not required?	Y Y Y	N N N
B.1.2	Is the exploitation licence fee applicable also in the case of non permanent heat removal from aquifers or rock formations?	Y	N
B.1.3	Is there any scheme to promote the withdrawal of royalty fees for the use of reinjection systems on the basis that geothermal energy is renewable and contributes to fulfilling the RES targets set out in the NREAPs to be defined in every EU state?	Y	N
B.1.4	Is there any scheme to promote the withdrawal of Groundwater abstraction/exploitation fees and permitting in accordance with national groundwater legislation if the net water producing budget from shallow and deep systems is less than or equal to 0m ³ /d or below the national guidelines (Where re-injection of produced geothermal waters does occur)?	Y	N
B.2.1	Are there the financial incentives schemes for geothermal energy in your country? Are they alive and efficient? Do investors use this support?	Y Y Y	N N N

B.2.3	Are the incentives for large commercial heat production systems? Are they available by the assessment procedure (on a case by case basis subject to a review by the relevant national authority)?	Y Y	N N
B.2.5	Is the procedure for the project assessments for financial incentives: 1 - Based on market accepted resource definition parameters? 2 - Based on long term geothermal energy production data? 3 - Available after initial production data have been submitted to the relevant national agency?	Y Y Y	N N N
B.2.6	If financial Incentives Scheme exists in your country, is it simple as possible?	Y	N
B.2.7	Are there financial incentives to reduce the financial burden of large scale geothermal projects development available at national, regional or local government authorities?	Y	N
B.2.8	Is national research and development funding schemes targeted in geothermal energy research with: 1 - Demonstration projects? 2 - Spin-off activities amongst the priority fields?	Y Y	N N
B.3.1	Are technical parameters used to assess eligibility for a Financial Incentive Scheme (FIS) strictly oriented to European standards and certifications in place?	Y	N
B.3.2	Are incentives based on the: 1 - CO ₂ emissions avoidance from operating geothermal plants? 2 - A set of agreed heat feed-in tariffs based on a national feed-in tariff strategy?	Y Y	N N
B.3.3	Is the development of a CO ₂ emissions credit system (green certificates) for the operation of geothermal energy projects encouraged at national level to incentivise sector investment?	Y	N
B.3.4	Does geothermal energy receive incentives similar to the support received by other renewable energy sources in the form of: 1 - Financial assistance for initial feasibility studies? 2 - Grants? 3 - Low interest rate loans? 4 - Risk insurance? 5 - Preferential VAT rate? 6 - Feed in tariffs or certificates for geothermal heat units produced/installed?	Y Y Y Y Y Y	N N N N N N
B.3.5	Are preferential VAT rates for heat sales from operating geothermal power plants below the higher rates of 19-22.5%? (to encourage fossil fuels substitution and provide a competitive price for geothermal energy based on national domestic and commercial energy rates)	Y	N

B.3.6	Is there a Geothermal Insurance Guarantee or Risk Fund for deep geothermal exploration and/or development drilling available in your country - covering the risk associated with exploration drilling and assessment of the resource? (based on the potential fossil fuel substitution and on the national CO2 emission savings that can be achieved through the development of geothermal energy projects)	Y	N
B.3.9	Is the cost of national drilling permits for the completion of geothermal energy boreholes (where applicable) waived or reduced for the geothermal sector? If yes, is it waived or reduced for a defined period? / 15 - 20 years? / Until the sector is established?	Y	N
B.3.10	Is there waiver/reduction on natural resource data acquisition costs to a licence applicant for review of geothermal energy data prior to application submission?	Y	N
C.1.1	Does in your state any geothermal energy educational strategies for students, academia, professional bodies and institutions involved in the implementation of projects exist? Are there any intention?	Y Y	N N
C.1.2	Is relevant professional qualification of technical personnel reporting to the national licensing authority recommended?	Y	N
C.1.3	Does the accreditation process differentiate between shallow and deep geothermal system designers and installers? (to ensure that the level accredited is specific to the experience and competence acquired)	Y	N
C.2.1	Does the national strategy include projections on the target contributions of shallow and deep geothermal energy developments providing a stable implementation platform for geothermal regulation over a defined period of time?	Y	N
C.2.2	Is national strategy accompanied by a set of government measures to achieve the targets, such as the inclusion in the priority development fields eligible for special funding (e.g.: from the EU 2007-2013 financial schemes)?	Y	N
C.2.3	Is mapping and assessment of geothermal resources needs to be included as part of the NREAPs to understand the likely contributions of the geothermal energy sector?	Y	N
C.2.5	Are there awareness campaigns for Renewable Heating and Cooling (RES-H) technologies and in particular for geothermal energy which proactively target professionals (engineers, architects, installers) undertaken?	Y	N
C.2.6	Are information and economic benefits of RES-H disseminated to encourage change in investment behaviour of energy consumers?	Y	N
C.2.7	Are district heating schemes considered as cost effective application for geothermal energy in a parallel review of the legislation and planning laws relating to the implementation of such schemes?	Y	N

C.3.2	Are there standards/recommendations for longer term implementation for large deep geothermal systems (district heating) to facilitate the growth of this sector?	Y	N
C.3.3	Is the national guideline for definition of efficiencies and utilisation coefficients for power and heat generation from deep geothermal energy developed?	Y	N
C.4.1	Is there Research, Development and Demonstration project support available both for shallow geothermal systems / geothermal heat pumps and for geothermal district heating with the following aims: 1 - Increase knowledge of existing geothermal potential through drilling? 2 - Geophysical investigation and demonstration projects? 3 - Improved plant efficiency? 4 - Decrease installation and operational cost? 5 - Decrease geothermal heat pumps: installation cost? 6 - Increase seasonal performance factor (SPF)? 7 - Identify approaches to optimize entire systems (ground heat source/heat pump/distribution)?	Y Y Y Y Y Y Y	N N N N N N N
C.4.2	Is there any RD&D support in the form of funding for the cost of: 1 - Site characterisation? 2 - Regional resource assessment? 3 - Targeted drilling available for the areas with poorly defined deep geothermal resources? Is this ad-hoc or permanent instrument?	Y Y Y	N N N