

**Partial Contract concluded on the basis of the Framework Agreement signed on  
12 October 2016 with the title:**

**Utilization of foreign experience in the siting process for a deep  
geological repository for radioactive waste in the Czech Republic**

**between**

**CONTRACTING PARTIES**

Client: **Česká republika – Správa úložišť radioaktivních odpadů**

Registered office: Dlážděná 6, 110 00 Praha 1, Czech Republic

Represented by: RNDr. Jiří Slovák, Managing Director

ID: 66000769,

Banking details:

Name of Bank: ČNB, Na Příkopě 28, Praha 1

Account No.: xxxxxxxxxxxxxxxx

Not a payer of VAT

(hereinafter referred to as the “**Client**”) and

Name of company: **Posiva Oy (lead party) in a consortium with Saanio & Riekkola Oy**

Registered office: Olkiluoto, FI- 27160 Eurajoki, Finland

Represented by: Janne Mokka

ID: 1029258-8,

Tax ID: FI10292588,

Banking details:

Name of Bank: Nordea (NDEAFIHH)

Account No.: xxxxxxxxxxxxxxxx

(hereinafter referred to as the “**Supplier**”)

(hereinafter both referred to as the “**Contractual Parties**”)

The Contractual Parties hereby conclude the following Partial Contract (PC) in accordance with the provisions of Article 5 and in the format of Annex No 4 of the Framework Agreement.

**Utilization of foreign experience in the siting process for a deep geological repository for radioactive waste in the Czech Republic**

Name of the Partial Contract:	<b>Utilisation of Finnish experience to guide the future development of the underground deep geological repository concept for radioactive waste in the Czech Republic</b>
Area of Services:	iii. Review and recommendation for Czech DGR design
ID of Services:	2016-120-10

	Function	Name	Date	Signature
Client approved for chapter 1	Project Manager	xxx	7.1.2019	
Compiled by	Project Manager of the Partial Contract	xxx	7.1.2019	
Partial Contract approved by the Client	Managing Director	Jiří Slovák	18.1.2019	
Supplier approved - project manager	Project Manager	xxx	7.1.2019	
Supplier approved - manager of the partial contract	Project Manager of the Partial Contract	xxx	13.2.2019	
Partial Contract approved by the Supplier	Sales Director, Posiva Oy	Xxx	12.2.2019	
	Managing Director, Saanio & Riekkola Oy	Xxx	14.2.2019	
	Managing Director, Posiva Solutions Oy	xxx	12.2.2019	

Note: This Partial Contract (PC) has been concluded in compliance with the conditions of a Framework Agreement (FA) signed on 12 October 2016 entitled: "Utilization of foreign experience in the siting process for a deep geological repository for radioactive waste in the Czech Republic".

## 1 CLIENT'S ASSIGNMENT

### 1.1 Requirements concerning the scope and technical specifications

The main purpose of this PC is to suggest the next steps with respect to the optimisation of the design of the underground section of the Czech DGR employing knowledge acquired by Posiva. The subject of this PC is related to the separate PC08 concerning the R&D of engineered barriers (buffer, backfill and plug); thus, this will result in close collaboration between PC08 and this PC. The design of the canister is not included in this PC or in PC08.

The transfer of Posiva's knowledge will take place in the following areas:

#### 1.1.1 Analysis of the current design of the SÚRAO DGR

The Client shall provide information (in the form of reports) on the current SÚRAO DGR design. The reports have been compiled by the Client's suppliers in the context of the "*Research support for the design of the deep geological repository*" (Výzkumná podpora pro projektové řešení hlubinného úložiště) project that will be concluded in 12/2018. The initial data amounts to roughly 300 pages.

The analysis shall focus on:

- A review of and suggestions concerning the current SÚRAO design of the underground repository (including all the various systems) – assessment of the technical concept and presentation of the findings and general recommendations. Identification of any potential problems.
- General discussion of the technical topics and a summary statement - initial requirements, technical recommendations, degree of correspondence to both operational and long-term safety.
- Suggestions concerning the subsequent optimisation of the design stage of the underground repository which may include general comments on for example:
  - Alternative layouts in general and alternative layouts for different potential sites
  - Specific legal requirements concerning construction in Finland (excluding IAEA and environmental requirements) – e.g. mining legislation etc.
  - Specific requirements concerning the material used for the lining, anchors, floors, grouting etc.; material compatibility
  - Construction materials - dismantling/blasting prior to the closure of the access/disposal tunnels?
  - Necessity for drainage sealing prior to closure

- EDZ as a pathway for potential radionuclide migration, EDZ requirements with concern to access tunnels, disposal tunnels, disposal boreholes / drifts
- Gravel transport and depot
- Canister handling (remote versus manual handling, handling equipment)

#### 1.1.2 Presentation of the current POSIVA DGR design (1-day workshop)

The Supplier shall provide information on the development of the DGR design in Finland. The information will be presented by the Supplier in the form of a 1-day workshop which will be open to SÚRAO's various subcontractors. The workshop shall be conducted together with the EBS workshop planned as part of PC08. The information provided by the Supplier shall cover the whole process of the development of the design of the underground section of the DGR in Finland from the very beginning and should focus on lessons learned. The main aim of the workshop is to provide for fruitful discussion between the Supplier and the Client (and the Client's subcontractors) including questions posed by the Supplier to the Client arising from the preliminary analysis of the current SÚRAO DGR design.

#### 1.1.3 Technical report on the SÚRAO DGR design

The Supplier shall draw up a draft of a technical report to be entitled "Review of and recommendations for the design of the underground section of the Czech DGR" on the basis of the activities undertaken under Article 1.1.1 of the PC. A draft of the report shall then be handed over to SÚRAO for comments, which will subsequently be discussed between the two contractual parties (via correspondence or at face-to-face meetings depending on the level of seriousness and/or complexity). The Supplier shall, subsequently, draw up a final version of the technical report and submit it to the Client who will then append a final statement to it.

The report shall include general suggestions aimed at addressing potential problem issues and at guiding the further development of the DGR concept into the next design optimisation stage that will be aimed at:

- obtaining an understanding of the repository for site selection purposes (i.e. to determine the site investigation work to be carried out)
- selecting the optimal variant (the horizontal versus the vertical disposal concept, TBM versus the conventional D&B method)
- obtaining the information required to form a more detailed estimation of the costs involved in the construction, operation and final closure of the facility
- compiling materials for the authorities, public relations purposes, presentations and communication activities

The Client nominates the following person as the Project Manager for the Partial Contract (PC): xxxxxxxxxxxxxxxxxxxxxxxx, e-mail: xxxxxxxxxxxxxxxxxxxxxxxx The Supplier will

communicate directly with this person, with correspondence copied on all occasions to Ms. xxxxxxxxxxxxxxxxxxxx, e-mail: xxxxxxxxxxxxxxxxxxxx; Ms. xxxxxxxxxxxxxxxxxxxx, email: xxxxxxxxxxxxxxxxxxxx and Mr. xxxxxxxxxxxxxxxxxxxx, email xxxxxxxxxxxxxxxxxxxx.

The Client requires the Supplier to nominate those PC participants that will be financed from this Partial Contract.

Changes of persons nominated either by the Client or the Supplier are permitted without the requirement for amending the PC. In case of a change of Project Manager either on the side of the Client or the Supplier, the Project Manager of the one party shall be required to notify his/her counterpart in writing of the change.

### 1.2 Required Services deadlines

estimated beginning – 1.2. 2019

Milestone 1: Delivery of the outputs of the Czech project focusing on the design of the DGR (provided by the Client)	T0+1 M
Milestone 2: 1-day workshop estimated for March 2019: the presentation of the current state of the POSIVA design of the underground section of the DGR	T0+2 M
Milestone 3: Draft of a technical report (Article 1.1.3) by the Supplier and submission to the Client	T0+6 M
Milestone 4: Comments on the technical report from the Client	T0+8 M
Milestone 5: Final version of the technical report drawn up by the Supplier and submission for the Client's final statement	T0+10 M
Milestone 6: Final statement from the Supplier	T0+12 M

### 1.3 Estimated labour intensity and/or its limitation

The Client estimates that the work involved in the PC will amount to 700 hours.

Point in the PC	Activities	Estimated labour intensity [hours]
1	Review of the current SÚRAO DGR design	200
2	Presentation of the current POSIVA design (1-day workshop)	
2a	Preparations for the workshop (Finnish experience and questions)	60
2b	Workshop at the Client's premises (2-3 pers.)	80
3	Draft of the technical report	200
4	Editing of the technical report	40
5	Final version of the technical report	60
1-5	Managing of the PC	60

#### **1.4 Specific requirements concerning the organisation of the Services**

The Supplier shall propose the location and timing of those meetings with the Client's experts deemed necessary for the fulfilment of the objectives of the Partial Contract. Communication via telephone, email and videoconferencing will be acceptable provided the security of the information disclosed is ensured.

## **2 CONFIRMATION / MODIFICATION OF THE ASSIGNMENT OF SERVICES BY THE SUPPLIER**

### **2.1 Scope of the Services and technical specification**

The Supplier shall perform the assignment of the Services set out by the Client in Article 1.1. The Client shall provide sufficient documentation describing the Client's research activities concerning the DGR underground design (as described in Article 1.1.1) to the Supplier in the English language. The approach via which the Supplier participates in the implementation of the improvements (as outlined in Article 1.1. of the Partial Contract 08) shall consist of consultancy, the presentation of the Supplier's knowledge and training activities.

### **2.2 Fulfilment dates**

The Supplier shall suggest the time schedule of the Services provided to the Client as stated in Article 1.2. The time schedule shall depend on the time at which the information to be provided by the Client is delivered to the Supplier.

The Supplier may suggest changes to the partial deadlines; however, the final deadline shall respect the requirements of the Client. If delays occur with respect to the delivery of information to the Supplier, such delays must be taken into account in the deadlines and overall schedule.

### **2.3 Price of the Partial Contract**

The Supplier states herein the price limit of the Partial Contract which is based on the labour intensity determined in accordance with Article 2.4 of this document and the rates specified in Article 4.3 of the FA. Based on the preliminary allocation of working hours to the various experts and their hourly rates, the price estimate (exclusive of travel costs) is set at 98 370 €. The Supplier shall be required to justify all the expenses incurred. As a minimum, consultation at the Client's premises will incur travelling expenses.

### **2.4 Organisation of the Services**

The Supplier shall set out the various activities corresponding to the work schedule, the persons involved in those activities and their roles in Table 1. When determining labour intensity, the Supplier shall take into account the limit set by the Client in Article 1.3 of the Partial Contract 08 (700 hours).

The Supplier shall set out the organisation and accountability of the persons involved in the Partial Contract in Table 1. Estimated hours per category are listed in Table 2.

Table 1. Personnel and roles in the activities set out in the Partial Contract.

Name	Role/position	Knowledge areas relevant to this PC
xxx	Project leader, primary reviewer	Underground repository design
xxx	Adviser	Underground repository design
xxx	Senior Expert	Material usage for underground openings
xxx	Adviser	Repository technology, technical systems
xxx	Adviser	Project management

Table 2: Personnel hours by category

Category	Hours	%	Price/€
1			
2	640	91	91392
3	60	9	6978
4			
5			
Total	700	100	98370

## 2.5 Risk identification

The risk identification, assessment and management procedures are set out in Annex no. 3 of the FA. The time schedule depends to a great extent on the availability of the required information in the English language.

## 3 CONCLUSION OF THE PARTIAL CONTRACT

Articles 1 and 2 of this Partial Contract are valid.

The sub-project is subject to the approval of those persons authorised with respect to contractual matters pursuant to Article 1.3 of the FA.

The Partial Contract shall be concluded in line with Article 5 of the FA.

This Partial Contract becomes valid and comes into force on the date of its signing by authorised representatives of the two Contractual Parties.