

## Technical requirements

Order 469-TP-16-TE-Y-3 of subject:

**Design and authority supervision, project management, assistance in preparation of the technical part for tender procedure related to the building and controlling the facility, quality and supply control, process coordination and consulting during the construction and commissioning of new replacement capacities for hot water**

**Table of contents**

1.	Initial situation .....	3
2.	Subject of tender documentation .....	3
3.	Project management and reporting .....	4
4.	Preparation of technical and detailed projects as well as preparation of executive documentation .....	5
5.	Preparation of tender documentation for selection of Contractors(s) for HP South and TPP North sites	10
6.	Designer supervision.....	11
7.	Coordination and management of existing infrastructure.....	12
8.	Deliveries control and forecasting .....	12
9.	Deliveries.....	12
10.	Quality assurance/quality control (QA/QC ) .....	12
11.	Health and safety management.....	13
12.	Environment management .....	13
13.	Coordination of object construction and construction management.....	13
14.	Coordination and management of commissioning and performance tests .....	14
15.	Other .....	15
16.	Requirements for rendering additional services .....	15

## **1. Initial situation**

As a part of the concept for company development, EVN Bulgaria Toplofikatsia EAD is planning to build two new production capacities (heating plants) in the territory of TPP Plovdiv North and HP Plovdiv South.

The new capacities shall be based on water boilers each of capacity 20 MWth installed with all required auxiliary facilities for the proper and safe operation located in individual new buildings at both sites.

At this stage for HP Plovdiv South Conceptual design has been prepared. Initially, the design includes construction of boiler plant with one 38MW water boiler. At this stage the site - HP Plovdiv South had obtained a building permit by the Plovdiv municipality. The Assignor has subsequently changed its investment purposes deciding that the project should include the construction of capacity with two smaller boiler plants of 20MW each. This is why; there are substantial differences in the concept of two projects. This would have resulted in updating of the Building permit for the HP South site.

For the construction of new capacity at the site of TPP North Plovdiv the draft project is completed by the Assignor. The process on building permit issue has not started yet.

Both sites are categorized as first class objects.

## **2. Subject of tender procedure**

The Contractor shall provide the following services in accordance with the requirements of Assignor:

- a. Project management
- b. Reporting
- c. Preparation of technical and investment (detailed) project as well as the preparation of executive (as-build) documentation
- d. Preparation of tender documentation for Contractor(s) selection
- e. Designer supervision
- f. Coordination and management of existing infrastructure
- g. Control of procurement and forecasting
- h. Quality assurance/quality control (QA/QC)
- i. Health and safety management
- j. Environment management
- k. Coordination of site construction
- l. Coordination and assistance with commissioning and performance tests
- m. If necessary, to provide additional services outside the scope of this technical requirements and not described therein, the Contractor shall provide additional services on request by the Assignor.
- n. The statutory building supervision shall be not a subject of this order

### **3. Project management and reporting**

#### **3.1. Main responsibilities of Contractor**

The project engineer shall provide services:

- In a competent and professional manner in compliance with the best engineering and design practices, with all reasonable skills, care and diligence that are expected from a company with experience in providing services similar or identical to the subject matter of the present tender procedure;
- To periodically report on the progress of permits issuing and construction according to the schedules and tile framework laid down in the contract or otherwise indicated by the Assignor ;
- In manner supporting the Assignor to complete both projects for building new capacity within their budgets and time periods (given in schedules) or better;
- With the appropriate care of the quality standards in order to ensure within its responsibilities, that after the completion the two new capacity shall operate according to the expectations or better;
- In manner which always takes care of and protects the Assignor 's interests;
- By ensuring that the services, subject of the contract, are appropriate and compliant with their purpose;
- In compliance with all laws and respective legislations, regulations and standards ;
- Informing itself in detail for all Assignor 's requirements for both projects for building new capacity and for the services, subject of the contract;
- By carefully considering any information or documentation provided by the Assignor up to the level required for proper fulfilment of its obligations under the contract;
- By observing the Assignor 's relevant guidelines with respect to the services, subject of the contract, provision;
- By performing all additional functions and providing all additional materials which by default are for the proper performance of services, subject of the contract;
- By preparing together with the Assignor, document named Project manual, which document in detail described and unified all the terms and services that the Contractor must perform within the scope of the subject matter of the contract.

#### **3.2. Project management and reporting**

The Contractor on both projects shall manage and administer the activities up to the level defined by the activities scope, during the whole process of preparation and implementation of both projects. These additional activities to the reasonable applicable level for each work include:

##### **3.2.1. General reports and project management**

- Provides full support to the Assignor in all its responsibilities, to prepare and implement both projects according to the final schedule of the activities;
- To provide review of both projects in the form agreed as a monthly report (in cooperation with the Assignor )
- To report to the Assignor for all discrepancies found in the quality assurance system;
- To review the licenses, their validity and applicability to all countries included in both projects which are required for their implementation;
- Provides full support to the Assignor 's team at the initial meetings for progress of both projects and other meetings in the Assignor 's organization;
- Provides full support to the Assignor in the management of activities on public relations for example, participation in public discussions, preparation of publications for journals, etc.);
- Provides full support to the Assignor in review and management of risk, to prepare plans for remedial measures to be approved by the Assignor ;
- Provides full support for organizing and holding meetings according to the final schedule of the activities and the Assignor's instructions.

### 3.2.2. Reports and Management of both projects in relation with the Contractors (delivery batches)

- To support the Assignor in order to verify its obligations arising from the contracts for work and any other contracts concluded during preparation and implementation of the two projects (if any);
- To manage changes in orders including the technical and economic evaluation of changes and their consequences;
- To manage claims;
- To administer the contracts for work;
- To inspect and to approve the ongoing work in process in relation of part of such work that is invoiced by the Contractors;
- To inspect and approve the fulfilment of conditions for invoicing.

### 3.3. Monthly report

The Contractor on both projects shall prepare and submit to the Assignor up to the 10<sup>th</sup> day of the next month, the monthly report for each project summarizing the project progress. The detailed contents of the monthly report shall be agreed between the Engineer on projects and the Assignor and defined in the Project manual.

As a minimum, the monthly report on each project shall contain the following:

- Review of activities of Engineer on projects in the previous month;
- List of activities planned by the Engineer on projects in the next two months including the Contractor number of hours, plan for invoicing with tentative prices;
- Review of schedules showing the real progress ;
- Review of engineering activities;
- Review of deliveries;
- Review of construction activities;
- Review of contracts for work;
- Review of other contracts, if there are some:
- List with key supplies;
- Review of permits and licenses;
- Risk review:
- Review of changes in orders including justification and related expenses ;
- Review of claims (including delayed deliveries and penalties);
- List of shortcomings and critical zones including specification of remedial measures and the probable effect on the work of both projects. Special attention shall be paid to the fields concerning safety, quality, schedule, expenses or basic parameters of the two projects including the proposal for prevention, avoiding and mitigating, as applicable;
- Other information requiring the Assignor attention.

### 3.4. Meetings on progress, other meetings, video conferences, phone conferences, etc.

- Meeting on progress of both projects ;
- Meetings on task progress – meetings on progress of individual basic activities under both projects shall be held, if required ;
- Other meetings, video conferences, phone conferences and so on – they shall be organized if necessary.

## 4. Preparation of technical and detailed projects as well as preparation of executive documentation

The requirements to the preparation of technical and investment projects are divided in three sections to be clearer both for candidates and the Contractors at next stage.

In the first phase "Designing" the technological specifics of objects is described which is detailed by the Assignor at the conceptual design stage.

In the second phase "Construction and monitoring" the main principles and legal requirements are presented that shall be taken into account in the implementation and those given below do not comprise all circumstances. At this phase, the implementation technology is revealed, as well as the quality control and the phased plan of the particular sub-phases.

In the third phase some basic provisions are presented of the designing and construction process of capacities that the Contractors shall observe under the Assignor's instruction. All prescribed processes and provisions shall be mandatory for the whole construction process and the process of commissioning up to the expiry of warranty period.

#### **4.1. Designing**

##### **4.1.1. Projects aims and main tasks**

There is permit for construction of new production capacity at the site of HP South, which has been issued at the conceptual design phase made by:

Stroycontrol KK&KONERGY DZZD  
100 Gotse Delchev Bulv.  
1404 Sofia, Bulgaria

The technical assignment for the preparation of the technical and detailed projects for the construction of new replacement capacity in TP South has been developed on the basis of the conceptual design provided by the Assignor which contains significant changes to the first version.

The technical assignment for the preparation of the technical and detailed projects for the construction of new replacement capacity in TPP North has been developed on the basis of the conceptual design provide by the Assignor.

The process for issue of building permit for new production capacity construction at TPP North site has not started yet.

The subject of projects is the technical designing of new replacement capacity in the territory of HP South and TPP North, town Plovdiv. Designing shall include all necessary sections for construction of the new production capacities, and the documentation shall be detailed technical documentation needed by the construction team supported by graphical, text and media materials that shall enable achieving of high quality of plants construction in order to make the planned commissioning.

The projects shall contain text and graphical materials/details included/ required to perform all types of construction and mounting works, to carry out expert studies, make trails, etc. During designing all requirements shall be met of regulative documents currently applicable with all amendments and supplements that have become effective as to the construction.

The projects of all sections shall be prepared in line with the European designing standards.

All projects shall be presented in paper form or electronic media - DWG format (drawings), DOC format – notes and XLSX for calculations and graphics. The projects should be submitted to the Assignor in five (5) copies on paper, at least 3 of them must be with original ("wet") signatures and seals, as well as a copy of the project on digital media (CD). Property rights on the projects are fully in favour of "EVN Bulgaria Toplofikatsia" EAD.

The volume and contents of designing in no way shall be less than the minimum contents specified by the Ordinance No 4 on the scope and contents of investment projects (effective as of 5.6.2001, promulgated in SG issue 51 of 2001; amended in issues 85 and 96 of 2009; amended and suppl. in issue 93 of 2014; amended in issue 102 of 2014)

##### **4.1.2 Brief description**

#### 4.1.2.1. New replacement capacity at the TP South site

The building of new replacement capacity at the HP South site shall consist of the following functional zones– Boiler room, Pump room, Electric equipment rooms and Auxiliary rooms. Boiler room, Pump room, and Electric equipment rooms shall be located in the main hall. The auxiliary rooms shall adhere to the main hall space. The rooms for gas reducing and gas distributing installations shall be at distance indicated in the regulations. The amount of activities within this scope comprises also the designing of all plant connection – electric power supply, potable water, and process water, network water with tank, sewerage, telecommunications, and fire-fighting loop with a tank. The scope also includes the development of plant for supplying the new capacity with alternative fuel (light fuel oil).

#### 4.1.2.2. New replacement capacity at the TPP North site

The building of new replacement capacity at the TPP North site shall consist of the following functional zones – Boiler room, where besides the boilers also network water pumps shall be installed, as well as starter expanders, installations for softening and deaeration of make-up water, and other auxiliary facilities and installations, Electric equipment rooms and Auxiliary rooms. The auxiliary rooms shall adhere to the main hall space. It is foreseen that construction of gas reducing and gas distribution plants shall be constructed. The amount of activities within this scope comprises also the designing of all plant connection – electric power supply, potable water, and process water, network water with tank, sewerage, telecommunications, and fire-fighting loop with a tank. The scope also includes the development of plant for supplying the new capacity with alternative fuel (light fuel oil).

The technical indicators on the conceptual designs basis shall be specified in the project development process together with the Assignor.

#### 4.1.3. Requirements to the scope and contents of investment projects

##### 4.1.3.1. General requirements to the investment projects

- The investment projects shall be prepared in the following phases: technical project, detailed project and executive (as-build) documentation.
- The individual sections of investment projects shall be prepared under the procedure and conditions of ordinance No 4 of 2001 on the scope and contents of investment projects.
- The project solutions shall meet the requirements to the constructions under art.169 of TDA.
- The investment projects shall foresee the performance of all types of construction and mounting works and activities necessary for the construction implementation including detailed and exact specifying in quantitative and qualitative respect the construction and mounting works, materials, equipment and articles needed for construction.
- In the investment projects, the Contractors shall foresee the required amount and type of disassembly works of all buildings and facilities available at the terrain.
- In the investment projects it shall be foreseen materials, equipment and articles of high quality synchronised under BNS/EN which are provided with the respective certificates, declarations of origin and permits to be input in the construction according to the law on technical requirement to the products and the regulations to it.
- The explanatory notes shall clarify and give proofs of the technical decisions accepted, cite the regulatory documents used in the designing and construction, instructions for performance, tests and operation.
- The explanatory notes to the individual sections of investment projects besides the requirements of ordinance No 4 of 2001 on the scope and contents of investment projects shall contain also sections on the organization of construction performance and HSWFP (health and safety at work and fire protection), to be laid down as a basis for the development of sections PCOM and Safety and health plan (SHP) that are common to the order as a whole.

- Each section of the investment projects shall contain bill of quantities for the construction and mounting works (disassembly and assembly) necessary for the implementation and individual specification of necessary materials and equipment.
- The bills of quantities shall be prepared with Building Manager, Gaudi plan or other equivalent software and the individual lots shall be denoted with the respective codes.
- The PCOM section shall be prepared observing the requirements of Ordinance No 4 of 2001 on the scope and contents of investment projects.
- SHP shall be prepared observing the requirements of Ordinance No 2 of 22.03.2004 on the minimum requirements for health and safety at work during performance of construction and mounting works.
- Prior the start of designing the Contractors shall:
  - Make investigation and take survey of existing situation of objects and adjacent area (geodesy);
  - Study the climate data of the regions for designing at elevation, average annual atmospheric pressure, wind, maximum air temperature, average monthly temperature in the coldest month, average annual relative air humidity, precipitations, snow, seismicity;
  - Examination of existing underground and ground communications;
  - Make drillings and laboratory studies and prepare engineering and geological report.
  - Calculate the height of chimney stacks using the specialized PLUME software.

#### 4.1.4. Technical projects

Deadline no more of that the period for submitting the Detailed design, written in document Final Schedule of activities, prepared on the basis of the indicative schedule of activities, for the individual sites as of the date of request not including the term for acceptance and approval by the Assignor. At each stage of 25% readiness initiated by the designer, the designing shall continue after written confirmation by the Assignor.

The projects of the section "Architecture" shall be completed at the first 25 % of readiness. In this section at least two versions shall be developed for the allocation of buildings according to the disposition of necessary rooms, technological equipment in order to optimally use the areas.

- To prepare investment projects in accordance with art.139, para 1,2 and 3 of the Territory development act (TDA ).
- During the projects preparing all requirements of art.169, para 1, items 1-6 of TDA should be met.

The constructions shall be designed, performed and maintained in compliance with the requirements of regulatory acts and technical specifications during the lifespan that is economically grounded for assurance of essential requirements on:

1. load-bearing capacity – mechanical resistance, stability and durability of building structures and ground base for operation and seismic loads ,;

2. fire safety;

3 hygiene, protection of health and life of persons;

4. safe operation;

5. noise protection and environment protection ;

6. energy efficiency – energy and heat saving.

- The projects shall include full specification of materials and equipment set foreseen (manufacturer, type, from, colour coordinated with the concept for colours and materials of EVN Bulgaria Toplofikatsia EAD ), accompanied by bills of quantities for all sections (B of Q), detailed quantitative accounts (DQA) of all sections and explanatory notes specifying the construction and mounting works (CMW) by sections.
- The designation of the equipment shall be in accordance with a system for the designation of plants (KKS). The system KKS should be used in all documents prepared by the Contractor as diagrams, drawings, lists, etc.



Investment projects shall be prepared according to Ordinance 4/21.05.2001 – on the scope and contents of investment projects.

Graphical and document development on all specialties shall be made in such way that the projects may be submitted for approval to the respective institution in order to obtain building permit:

- Section: Engineering and geological report
- Section: Architecture
- Section: Building structures
- Section: Geodetic surveying and levelling layout
- Section: Water supply and sewerage
- Section: Electric installations
- Section: Heating, ventilation and air-conditioning
- Section: Energy efficiency, heat and energy saving in buildings
- Section: Fire safety
- Section: Organisation and performance of construction
- Section: Project for construction wastes management
- Section: Safety and health
- Section: Technology
- Other

Each section of technical projects shall contain:

- Drawings and details on which the types of CMW can be performed in the following recommended scale:
  - a) site layout - in M 1:500 or M 1:1000;
  - b) allocations, sectional views, facades - in M 1:50 or M1:100;
  - c) details – in suitable scale depending on the type and specifics of object;
  - d) Other drawings - in suitable scale depending on the type and specifics of object
- Explanatory note clarifying the project solutions proposed to which the documents and initial data issued in connection with designing shall be attached;
- Calculations verifying the project solutions;
- Bill of quantities for each section shall be attached to the calculations or verified in the section of cost estimate documentation
- Particular sections of the detailed projects may include depending on the designing specification, scale model, samples, composite photo, computer animation etc.
- When the construction is completed in compliance with the detailed project approved, it shall be verified as executive drawings according to art. 175 of TDA.

In the project, it is required to prepare Gantt chart for work on the individual CMW activities. Planning and coordination of all CMW activities shall ensure avoiding obstacles and delays during the construction implementation

The Gantt chart initially presented and approved may not be changed during the implementation process without the express written approval by the Assignor.

#### 4.1.5. Detailed design

Deadline – no more of that the period for submitting the Detailed design, written in document Final Schedule of activities, prepared on the basis of the indicative schedule of activities for individual sites.

Contractor shall prepare final detailed design representing graphical and documentary development in all sections on the basis of technical design so that it can serve as executive projects in the execution of construction activities. Further refinement and development of all the details necessary for full completion of the plant.

Detailed design should contain necessary:

- additional drawings with detailed parameters and fragments of the more important parts of the site;
- details on an appropriate scale in all parts of the project, clarifying the implementation of individual works in interior and exterior of the facility, including roofs, walls, ceilings, floors, flooring, insulation, windows, roofs, stairs, rails, shafts, plants, landscaping, etc., fittings sufficient for the execution of electrical works;
- developing the detail for assembly and strengthening of the machinery and equipment.
- guidance on the parameters of tests of machinery and equipment, carried out after the installation and setup of the installations.
- feasibility of the proposed solutions for the choice of systems for thermal insulation, waterproofing, sound insulation, fire, type and the chosen method of implementation of networks, installations and installation equipment (water and sewerage, HVAC, electric power, etc.);
- colour layout of the site and materials for facades, plinth, flooring, tiling and more. characteristic details of the exterior
- other

After completion of all activities all documentation must be submitted to the Assignor in electronic format (DWG / drawing /-format) and paper copies (5 pcs.)

#### 4.1.6. Executive (as-build) documentation

The contractor is responsible for the legality, quality, completeness and relevance of the developed Investment designs. He is responsible for full coordination between different parts of each phase of investment designs.

In case of detection of inconsistencies or omissions, inaccuracies and / or errors in investment designs during their implementation, the Contractor shall make all necessary enhancements and fixes at his account and in specified by the Assignor terms.

Contractor shall prepare as-built documentation and provide the necessary data for the Cadastre.

Checking the final documentation (operational logs and documents quality assurance) of the suppliers to complete, true and complete.

Create basic operational instructions as follows:

Description of the system and its operation for the whole primary and auxiliary equipment with relevant placements, drawings, lists, diagrams and process flow charts, following the instructions for operation of the suppliers.

Processing of existing performance levels if they are affected by the project.

### **5. Assistance in preparation of the technical part for tender procedure related to the building and controlling the facility - HP South and TPP North sites**

The activities on the both projects implementation shall be performed by other Contractors for all different sections of projects. The Contractors shall be selected through tender procedures according to the Public procurement act - PPA.

In this respect, the engineer has obligations under the section: Preparation of technical part of the tender documentation for selection of Contractors(s) of projects, and these obligations are:

- Preparation of documentation on bill of quantities for each section of projects. Detailed description of construction and mounting works types including detailed description of building materials, machines and facilities (model, type, manufacturer, colour etc. coordinated with the investor according to the concept of EVN Bulgaria Toplofikatsia EAD )

- The project unit prices by type of activities shall be prepared in analytic manner following the phases: quantities accounting – unit consumption – transport diagrams – calculations– unit estimated prices – value accounting. Analytical comparison of similar prices shall be used as well as prices obtained under real offers; prices of materials and facilities proposed by manufacturers and suppliers
- The quantities and value accounting must determine as far as possible the actual price of the object. The quantities shall be calculated on the basis of architectural and structural drawings, and where required – also on the basis of details to the drawings
- Preparation of Gantt progress chart for performance of types of construction and mounting works. Planning and coordination of all activities on CMW shall ensure avoiding of obstacles and delays during both projects implementation.
- Preparation of information and arguments for negotiations during the tender procedures
- Requirements to the candidates for participation in tender procedures (technical requirements for the candidates, eligibility criteria for selection of Contractors for both projects)
- Assistance in explaining the inquiries received by potential candidates for Contractors of the construction activities
- Conducting negotiations together with the Assignor for selection of Contractors for the the construction activities, if required

## **6. Author's supervision**

The obligations under the section for author's supervision over the Contractor are:

- To execute author's supervision during the construction at both sites as of the date of providing access of Contractors to the objects up to the commissioning of object at least once a week.
- To guarantee the exact implementation of both projects, adhering to the architectural, technological and construction rules and standards, as well as the preparation of project documentation for object commissioning.
- On request by the Assignor, to make amendments and supplements in the design development, elaboration of additional details under all project sections and other similar activities in accordance with the regulatory documents.
- The designer supervision during CMW shall be exercised by experts by all sections of the projects who shall conduct consultations and expert solutions to resolve issues arising in the process of both objects construction on request by the Assignor.
- All concrete, steel concrete works, statements for hidden works shall be mandatory accepted by the designer of project of section "Structure".
- To make prescriptions and to give technical solutions for adhering to the projects and the need of possible changes which shall be entered in the construction order book and they are mandatory for the other participants in construction; all such changes shall be coordinated in advance with the Assignor.
- The designer supervision shall be obliged to clarify and check the need of any additional activity (amount, price and materials) during the construction of both objects and to controls the performance of such activity.
- On invitation by the Assignor the persons exercising the designer supervision shall be obliged to participate in meetings, to prepare protocols concerning the objects construction and to sign all documents required for the acceptance of particular types of construction and mounting works (protocol of form Act 19) or phase of object completion, as well as to give prescriptions for eliminating errors and omissions in the construction process and to track for their performance within the required period.
- To provide designer supervision of the building materials input by the Contractor in the construction according to the projects from the opening until the commissioning on weekly basis. To provide expert solutions in any time on request by the Assignor for replacement of material (facility) with equivalent one.
- To provide weekly technical control on the CMW performance in the object and to participate in the preparation of bills of quantities and inspection of CMW actually performed at the construction.

- During each visit to both objects, to examine and establish their state and to provide solutions of the issues arising after coordination with the Assignor.
- To consult professionally the Assignor on the need and suitability of requested or required changes participating in the discussions and decision making for them.
- To track for performance of scheduled plan for CMW and to timely report on any delay or non-performance to the Assignor.

## **7. Coordination and management of existing infrastructure**

Contractor's obligations shall be:

- To coordinate and supervise the connection of the two projects to the existing facilities at the sites.
- To support the development, coordination, planning and framing of points and lines for connecting both projects to the existing facilities.

## **8. Deliveries control and forecasting**

The Contractor's obligations shall be:

- Assist the organization and administration of the contractual documents for both projects including invoices and management of requests, change of and variations in orders;
- To perform Programme on value improvement (PVI) in order to encourage innovations and creative approaches to the both projects implementation and cost saving by the other Contractors involved in the execution of the investment plan of the Assignor for building new capacity .

## **9. Deliveries**

The Contractor's obligations shall be:

- To assist the Assignor with the preparation of the technical part for tender procedure related with deliveries and works;
- To assist the Assignor in evaluation of the technical part for tender procedure

## **10. Quality assurance/quality control (QA/QC )**

The Contractor of both projects in HP South and TPP North shall be responsible for the comprehensive quality management in order to be sure that the required practices for QA/QC are adopted and properly coordinated in all work packages of projects and to approve the conformity to all QA/QC regulatory requirements.

The scope of activities of the Contractor include:

- As a part of QA to prepare comprehensive Plan for quality management of projects including QC requirements (programmes for testing and inspection) by the Contractor ;
- To review plans for quality management and programmes for testing and inspections of Contractors ;
- To perform audits of quality at each projects phase in order to find areas that are not meeting the quality and if required, to recommend actions for remedy of incompliances. To conduct regular audits of Contractors of the construction activities;
- To participate in other workshops and tests and inspections in place as required by the Assignor;
- To prepare protocols of tests and inspections
- To support the Assignor in all other activities for QA/QC management as required by the Assignor.

## **11. Health and safety management**

The Contractor of both projects in HP South and TPP North shall be responsible for the comprehensive health and safety management in order to make sure that the Bulgarian and European standards for health and safety management are adopted and properly managed in all work packages of projects, checking and approving the compliance with all regulatory requirements for health and safety management.

The scope of activities of the Contractor shall include:

- To specify manager on health and safety;
- to prepare plan for safety management of both projects;
- to review the plans for safety management of Contractors ;
- to do work sessions and exercise control on the safety of objects;
- to support the Assignor in all other activities for safety management as required from the Assignor, and to act on the Assignor 's benefit before the competent authorities.

## **12. Environment management**

The Contractor of both projects in HP South and TPP North shall be responsible of providing comprehensive support to the Assignor on the environment issues, if applicable, in order to make sure that:

- the standard practices for environment management are accepted and properly coordinated on all work packages of both projects;
- all measures agreed during negotiations for permits concerning the environment are properly implemented in both projects.

The scope of activities of Engineer on projects shall include:

- Review of plan for environment management of the Contractors ;
- If necessary, he/she shall do work sessions and exercise control on the environment management of objects;
- He/she shall support the Assignor in the negotiations with the competent authorities.

## **13. Coordination of object construction and construction management**

The Contractor of both projects in HP South and TPP North shall manage the procedures of QA/QC, the schedules and the work progress during transportation, erection and mounting of equipment at the objects by the Contractors s.

The Contractor of projects shall detect areas of concern during the project implementation, indicate remedial measures and report all remaining concerns to the Assignor.

This shall include:

- Quality assurance/quality control;
- Arrangement and presence at the tests for the object compliance and the respective documentation, check and certifying of object tests (pressure, completeness, etc.);
- Management of delivery logistics, work with materials, issue of reports for acceptance of materials, control of stocks, tracking of materials;
- Management, coordination, supervision and inspection of construction and mounting works of Contractors;
- Management, supervision, review, confirmation and coordination of delivery documentation ,;
- Management, coordination, and supervision objects facilities, completeness of the instructions for management of objects, health and safety, fire protection, environment protection, wastes management, confidential information, and review of monitoring, and other documents related to the activities at the objects;

- Coordination of object plans, management of handover and acceptance of Contractors work,, facilities of objects and within its zone;
- Management of security, safety, health and welfare of objects;
- Non-compliances management;
- Conducting of reviews and checks for completeness and compliance of works or equipment performed under specifications;
- Management and check of proper documents for plans corrections - executive drawings;
- Management of the final list of uncompleted works and review of all systems before commissioning and review of records on completeness;
- Check and recommendation for certifying the completed mechanical works, and other key dates;
- Providing assistance and presence in checking the acceptance test of the control system on the sites;
- Submission of report for mechanical works completion, including analysis of actual costs compared to the forecasted ones from the budget, monthly or more frequently if required by the Assignor ;
- Claims management;
- Any other activities arising from other Contracts for individual batches that have been concluded between the Assignor and the Contractors’.

#### **14. Coordination and management of commissioning and performance tests**

The Contractor of both projects shall manage the commissioning, demonstration tests of system and performance tests in order to check whether the new production capacities fully operate according to the contracts for work and whether the guaranteed values and conditions of the preliminary certificate for acceptance (PCA) are met.

This shall include:

- Management and correction of commissioning schedules;
- Quality assurance/quality control ;
- Review and approval of methods, procedures and programs for system testing and performance tests submitted by all Contractors;
- Management and supervision of hot and cold start of the new capacities;
- Review of all lists of Contractors spare parts;
- Management and supervision of preliminary and complex testing of the new capacities ;
- Optimisation of the new production capacities;
- Review and comments on all reports of Contractors on testing ;
- Supervision and report of compliance with the ecological standard;
- Compliance check and submission of report for projects completion with preliminary acceptance certificate;
- Comments and recommendation of program for training for Assignor ‘s approval and review of work staff training;
- Commissioning, performance test, warranty tests, preparation, execution and coordination of activities under PCA between all Contractors;
- Certification of tests, including certification of warranty test procedures;
- Supervision and certification of tests for emissions and noise levels, as well as other tests according to all contracts;
- Claims management;
- Preparation of protocol for PCA;
- Preparation of protocol for final approval

## **15. Other**

The Contractor shall design the construction of site networks (electric, WSS, and if necessary, also primary waste treatment plant) including all necessary design sections (tracing plan, temporary traffic organisation, plan on safety and health).

If during designing questions arise they shall be coordinated with Assignor.

If in the project sections for some reason it is necessary to use new, not applied before in the country building and other technologies, then a section shall be developed containing full construction and technological solutions.

In the designing process, all existing underground communications shall be established, and their shift must be foreseen if this is an obstacle for both projects implementation.

In case during the construction omissions or incompliances are found in both projects, the designers shall be obliged to make the required revisions and corrections at their own expense.

The requirements cited in the technical specification for preparation of all sections of both projects are minimal for all specialties.

The Contractor shall be obliged to enable the Assignor to exercise current control on the both projects implementation and to coordinate with the latter all decisions in advance.

The Contractor shall be obliged to be present and defend its developments before expert council, consultants, coordinating institutions and approving administration, as well as all other municipal, state authorities, individual or legal entities, who have direct or indirect relation to the fulfilment of its contractual obligations, and to make all required revisions or corrections, if necessary.

The Contractor shall be obliged to timely provide motivated notification in writing to the Assignor always when the changes proposed by the Assignor are not suitable for the proper performance of services assigned. Failure to fulfil this obligation by the Contractor shall result in claim and fulfilment of liability to the amount of damages and benefits forgone actually incurred by the Assignor .

The Contractor shall be responsible for the lawfulness, quality, completeness and applicability of investment projects it has prepared. The Contractor shall be responsible for the full conformity between the individual sections at each phase of investment project.

In case non-conformity or omissions, inaccuracies and/or errors have been found in Investment projects during their implementation, the Contractor shall be obliged to make the required rework and corrections at its own expense for a term specified by the Assignor.

Check of values in the statements and advance requests presented and their conformity to the offer prices, signing and submitting approval to the Assignor for their payment if the conditions for such payment have been met.

The Contractor shall be obliged to prepare executive documentation and present the data required for Cadastre.

Assignor has the right to exercise control and possible correction of elements supplied by the Contractor.

## **16. Requirements for rendering additional services**

Additional services shall be provided by the Contractor, if only the following three conditions are simultaneously met:

- The necessary additional services must be outside the scope of this order
- The necessary additional services must be within the additional hours foreseen
- The necessary additional services must be stated by the Assignor in writing

### 17. Additional information and requirements to the Participants

On Stage 2 of the procedure the Conceptual designs for HP Plovdiv South and TPP North Plovdiv will be provided to the Participants . The Participants should comply the clauses of p.7 Confidentiality of the document Trade conditions.

I am acquainted in full and accept to perform the technical requirements:

Company seal of candidate:.....

Signature of legal effect:.....

Town: .....

Date: ..... 2016