

Contract documents

Performance description and terms of contract

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1 Performance description

1.1 Client

The expertise of the Institute for Climate Protection, Energy and Mobility (IKEM), which was founded in November 2009 as an affiliated institute of the University of Greifswald, lies in the analysis, evaluation and further development of the legal, socio-economic and political framework for the three main research areas that give the institute its name. As an independent, non-profit organization, IKEM deals with key scientific issues on the way to a sustainable economic and social order. All projects are based on an interdisciplinary, integrative and international perspective. IKEM's central research topics are the expansion of renewable energies, sustainable energy networks, electromobility, increasing vehicle automation and related traffic and mobility issues, the implementation of climate protection targets and fundamental questions of energy supply, planning, resource protection and efficiency. In cooperation with partners, IKEM has been and is significantly involved in numerous projects on electromobility, vehicle automation, traffic telematics, system integration, sector coupling and acceptance research in the context of the mobility and energy transition. IKEM has been working on topics relating to the electrification of long-distance road freight transport since 2011 and was also involved in the ENUBA 1 and 2 and AMELIE I and II projects, which focused on electric road systems.

As part of E-CORE, IKEM is funded by the Federal Ministry for Economic Affairs and Climate Protection. The subcontracting to a qualified Hungarian partner was already planned in the project application. The contract amount is EUR 179,690.00 (incl. taxes) and is a fixed price. IKEM will act as the contracting authority vis-à-vis the bidders and will award the contract in a public procurement procedure.

1.2 Project presentation

Previous research on electric road systems shows that the establishment of a national ERS core network would lead to significant greenhouse gas savings while keeping the costs manageable. With a Europe-wide market ramp-up, these advantages would be even greater. The next logical step is therefore the cross-border construction of an ERS route in the EU. To date, there are no other (research) projects that develop a coherent concept that deals with the planning, financing, construction and operation of a European interoperable ERS infrastructure and is developed jointly with EU partners. So far, ERS have only been tested in field trials by a few member states. Furthermore, various ERS technologies (overhead line, conductor rail, inductive systems) are being researched across the EU, while some Member States have taken on a mere observer role without wanting to develop their own national pilots. Particularly with regard to the Alternative Fuels Infrastructure Regulation (there are no binding deployment requirements for ERS to date), coordination at EU level is not expected in the near future. It is therefore currently still up to the member states to prepare the next steps for a successful market ramp-up and to initiate the necessary harmonization processes. The scenario of an unregulated, one-sided market ramp-up of individual ERS technologies at different times should be prevented. In conclusion, the international dimension of a harmonized ERS drive solution should therefore be

emphasized in particular. Only a comprehensive, largely seamless, international infrastructure network can meet the requirements of logistics companies operating across borders. As these companies usually work with margins in the low single-digit percentage range, planning security and rapid scaling in the European and international market are particularly relevant.

The project aims to show how political, ecological, economic, technical and legal aspects must interact in order to realize a European ERS corridor. To this end, the project addresses all the issues that arise when integrating a cross-border overhead line system. For the first time, a coordinated concept will show concrete possibilities of how a European ERS pilot can be financed, planned, built, operated and maintained. A major advantage of this project approach is the close cooperation with European partners. The aforementioned studies are to be carried out on the basis of a specific EU corridor. This approach is in line with the German government's "overall concept for climate-friendly commercial vehicles", which stipulates that exchange with other member states should be sought in the scaling phase in particular.

The Hungarian perspective is also to be included in the project by way of subcontracting. A specific ERS corridor is to be identified by the project participants, whereby the TEN-T corridor from Rotterdam via Frankfurt am Main and Vienna to Budapest is considered to be particularly suitable. This will enable the project partners to network relevant stakeholders from the various member states and ensure a direct exchange of information and knowledge between the partners.

In particular, it will be examined which findings from German research projects can be transferred to other member states and which new aspects need to be taken into account. It is envisaged that the partners will jointly develop a feasibility concept so that the practical planning phase of the EU corridor can begin directly at the end of the project. In addition, the project should offer the opportunity to involve other interested member states and stakeholders and to raise awareness throughout the EU that ERS represent a promising decarbonization method for the (freight) transport sector.

Another focus is on investigating synergies with other alternative drive infrastructures (in particular charging points). In addition, scenarios are to be developed that take other ERS technologies into account alongside the overhead line, identify potential synergies in this regard and address bidirectional charging and standardization issues. Such a framework concept is of great importance for a successful European market ramp-up of ERS technologies, as it guarantees planning security for all stakeholders involved through coordination and harmonization and barriers to introduction can be identified and eliminated at an early stage. Furthermore, the requirements that future ERS users will place on the respective electricity grids when purchasing electricity and how it can be ensured that the infrastructure and operating systems can be used easily and smoothly.

Project partners in the joint research project E-CORE are IKEM e. V. in the fields of law, political science and economics with and the University of Applied Sciences Erfurt, with its technical, systemic and transportation expertise and the EU partners. Based on a comprehensive feasibility study, it is possible to initiate transnational ERS planning and implementation processes as quickly as possible. This can build on preliminary work and make a significant contribution to achieving the European climate protection targets for heavy goods vehicles.

1.3 Scope of performance

Presentation of the issues to be investigated as part of the subcontract.

1.3.1 Structure/explanation

With regard to the section of the corridor that runs through the Republic of Hungary (hereinafter: Hungary), the involvement of a partner with expertise in the areas of transport, economic and political conditions from a Hungarian perspective is mandatory. This will probably be a Hungarian research partner.

The main E-CORE project is structured into two sub-projects.

Sub-project IKEM: Economics, Accounting and Networking (WAVE) includes the work packages:

A (European coordination and networking)

C (Political and economic framework conditions)

E (Harmonization of operation and billing)

F (Harmonized infrastructure planning and its procedures - Legal support).

Sub-project FHE: Corridors, Management, Charging (KML) includes the work packages:

B (Corridor and user identification):

D (Standardization)

F (Harmonized infrastructure planning and its procedures - work package management)

G (Requirements for the corridor management of ERS corridors in the event of disruption)

H (Bidirectional charging)

It is planned that the contractor will carry out the respective investigations for the Hungarian corridor section in the "E-CORE work packages" B, C, E and F in close coordination with the partners. Some work steps are mandatory (minimum requirement). Others can be considered additionally (option).

1.3.2 Performance description

The performance description is basically presented as follows:

→ Name of the work package of the subcontract (WP 1-5)

WP 1 has no direct correspondence to "E-CORE work packages"

WP 2 corresponds to WP B

WP 3 corresponds to WP C

WP 4 corresponds to WP E

WP 5 corresponds to WP F

→ Objective and description of the corresponding WP of the main project (WP B, C, E, F)

→ Work steps - minimum requirements

→ Work steps - options

For WP 1, there is no corresponding WP in the main project and no differentiation between minimum requirements and options. All work steps must be carried out here.

AP 4 has no optional working steps.

WP 1 Organization of and participation in events

Description of the work steps (WP 1.1.-1.5)

- 1.1 Participation and preparation of Jour Fixe (monthly) and project advisory board meetings (1-2 times a year) (online)
- 1.2 Bilateral exchange with FHE and IKEM, where necessary (online)
- 1.3 Participation in a project meeting during the project term (on site - presumably in Berlin)
At the project meeting, the funding body and the project sponsor are informed about the progress of the project.
- 1.4 Organization of a workshop in Budapest (topic to be decided/ number of participants 15-20)
- 1.5 Participation in the closing event (on site: Berlin or Brussels)

WP 2 Corridor and user identification (Hungary section)

The contractor shall mirror the work of WP B of the E-CORE project as far as possible.

Objective of work package B Corridor and user identification (KML):

Identification and analysis of a European model corridor and analyses of potential users of the corridor. Due to the partner structure, the European corridor from Rotterdam via Frankfurt a.M. and Vienna to Budapest is envisaged, via which a considerable volume of freight traffic in the EU with a relevant transit share in Germany takes place. The detailed planning and analysis of the corridor outside Germany can only be carried out if foreign partners are involved.

Minimum requirements WP 2

Description of the necessary work steps (WP 2.1-2.5)

- 2.1: Recording the transport networks and model data in the study area
→ Determining the infrastructure data relevant for the model corridor in coordination with the FHE
- 2.2 Development of a transport demand model in the Hungarian study area, test simulation calculations and traffic allocations
→ Transfer of existing traffic counts to the traffic model
→ Tool calibration, i.e. validation of the traffic model and implementation of Sensitivity calculations
→ The model is created in close coordination with the FHE, whereby the format of the data transmission is also defined

2.3 Analysis of the forecast freight traffic flows in the corridor.

→ The methodology for determining traffic forecasts is carried out in coordination with the FHE

2.4 Research on potential users of the cross-border overhead line system on the proposed route through qualitative interviews with relevant stakeholders

→ The interview forms are developed together

2.5 Assessment of the available transport networks and their traffic volumes in relation to the construction of a possible ERS infrastructure network

Options

Description of optional work steps (2.6- 2.7)

2.6 Route-related determination of the average energy demand for Hungarian long-distance road freight transport and the necessary loading requirements

2.7 Inclusion of further ERS technologies and stationary charging options. Analysis of the availability of the electricity grids on the relevant TEN-T routes through exchange with relevant grid operators

WP 3 Political and economic framework conditions (Hungary)

Objective of work package C (WAVE): Political and economic framework conditions

The aim is to identify and map the relevant stakeholders involved in the planning and construction of the corridor and to develop a joint market ramp-up strategy, with a focus on political cooperation. From an economic perspective, an assessment of the infrastructure costs of the corridor and the development of a financing and funding concept that complies with European law will be carried out.

Minimum requirements AP 3

Description of the necessary work steps (3.1-3.4)

3.1 Mapping the stakeholder landscape, graphic visualization

→ Prioritized actors, their functions and relationships to each other are summarized in an organizational chart and described in text form

→ Methodological coordination takes place with IKEM

3.2 Overview of national policy in the areas of infrastructure, energy industry, government intentions with regard to electromobility, climate, sustainable development and digitalization.

3.3 Research and development of kick-off financing concept as part of the cross-border market ramp-up of ERS

- 3.4 Approach to ERS infrastructure costs
→ Methodological coordination with IKEM and eur. partners

Options

Description of optional work step (3.5)

- 3.5 Concept development of funding/subsidy models during a possible market ramp-up in Hungary

WP 4 Harmonization of operation and billing

Objective of work package E (WAVE): Harmonization of operation and billing

An operational concept for a cross-border e-corridor for the market ramp-up is presented. It presents hurdles and synergies that can arise during the operation of the cross-border corridor and develops solutions and implementation recommendations. The focus is on the consideration of grid-side, trunk road-side and billing-relevant aspects of corridor operation.

Minimum requirements AP 4

Description of the necessary work steps (4.1-4.4)

- 4.1 Presentation of the Hungarian toll system (legal background, operating model).
- 4.2 Proposal to adapt the toll system in favor of billing ERS (infrastructure and traction current costs) in Hungary. What adjustments need to be made so that ERS can be billed in Hungary?
- 4.3 Harmonization of the Hungarian system with other European systems to support ERS settlement:
→ Question: What harmonization measures are necessary to ensure that ERS users can travel the corridor unhindered and obtain and bill traction and charging current as easily as possible.
- 4.4 Support in the investigation of different operational aspects of the infrastructure, whether there is a fundamental cross-border connection with cooperation potential between Hungary and Austria. In particular, energy grid and road-side operational aspects will be examined. Support in the development of a possible cooperation concept for Austria/Hungary.
- 4.5 Support would be necessary, e.g. in the context of a workshop (focus Austria-Hungary), in arranging contacts. Further support measures can be proposed.

No options

WP 5 Infrastructure planning and its procedures (Hungary)

Objective of work package E (KML/WAVE): Harmonized infrastructure planning and its procedures

The aim of the WP is a comparative analysis of the relevant planning procedures for national transport routes, charging infrastructure and energy networks in the neighboring countries. Based on the operator models, this work package will analyse the necessary planning steps in the individual neighbouring countries with regard to responsibilities, the legal framework, public participation, the integration of environmental impact assessment procedures, the expected time required and the possibilities for harmonizing and optimizing the planning procedures.

Minimum requirements AP 5

Description of the necessary work steps (WP 5.1-5.3)

- 5.1 Desktop analysis of the relevant national planning procedures in relation to national transport routes and energy networks (Hungary) and presentation of important planning law principles under Hungarian law
- 5.2 Support in the development of a concept for cross-border, coordinated and transparent planning and construction of an ERS infrastructure on trunk roads
- 5.3 Support for a workshop to present and discuss the results

Option

Description of the optional work step (AP 5.4-5.6)

- 5.4 Desktop analysis of the relevant national planning procedures in relation to stationary charging infrastructure
- 5.5 Expert discussion with relevant Hungarian planning institution
- 5.6 Support in the development of a concept for regional, cross-border official cooperation in the construction of the overhead line infrastructure (intra-authority approach). Suggestions for support are welcome.

2 Terms of contract

Upon acceptance of an offer, the conditions listed here become part of the contract. These form the core content. Further agreements are also possible.

§ 1 Remuneration

The remuneration for the subcontract amounts to EUR 179, 690 (gross incl. VAT of 19 %) (fixed price).

Net amount: EUR 151,000.

IKEM is dependent on the disbursement of the funding from the funding provider (German Federal Ministry for Economic Affairs and Climate Protection), payment can only be made once the funding has been received by IKEM. In the next step, payment can be made to the contractor.

The following accounting is performed:

- 25% of the order amount at the start of the contract (EUR 37,750)
- 50% of the order amount after 6 months (EUR 75,500)
- 25% of the order amount after submission and acceptance of all project results. (EUR 37,750)

§ 2 Tax

The subcontract is subject to VAT in Germany (19%). IKEM is obliged to pay the VAT rate (reverse charge).

§ 3 Contract term and termination of contract

The contract term is 12 months. The contract is expected to begin on 01.06.2024. Any delays of up to four weeks are possible.

During the term of the contract, the contract can be terminated with a notice period of 6 weeks, stating an important reason. Terminations must be made in writing. Upon request, the former contractor must support the client in the search for a new contractor.

The contractual language is English. The law of the Federal Republic of Germany shall apply, with the exception of private international law. All prices are agreed in € (Euro).

§ 3 Rights of use

IKEM and the funding body (Federal Ministry of Economics and Climate Protection) shall irrevocably acquire a right of use to the legal and graphic content created for the Customer that is unlimited in terms of time and territory and covers every known type of use, including the right to grant simple rights of use to third parties. If the project results are used by the customer, the contractor shall be named as the source.

§ 4 Confidentiality

"Confidential information" is all information and documents of the client that are marked as confidential or are to be regarded as confidential due to the circumstances, in particular information about operational processes, business relationships and know-how.

The Contractor undertakes to maintain confidentiality regarding confidential information. This obligation shall continue to apply after termination of the contract.

The Contractor shall store confidential information carefully and securely and protect it from access by third parties.

Such confidential information is excluded from these obligations,

- a) which were demonstrably already known to the Contractor when the contract was concluded or which subsequently become known to the Contractor from a third party without violating a confidentiality agreement, statutory provisions or official orders;
- b) which are publicly known at the time of conclusion of the contract or are made public thereafter, insofar as this is not based on a breach of this contract;
- c) which must be disclosed due to legal obligations or by order of a court or authority. As far as permissible and possible, the Contractor obliged to disclose shall inform the Client in advance and give it the opportunity to take action against the disclosure.

The Contractor shall only grant access to confidential information to those third parties who are subject to professional secrecy or on whom obligations corresponding to the confidentiality obligations of this contract have previously been imposed. Among its employees, the Contractor shall only disclose confidential information to those persons who need to know it for the performance of this contract and shall also oblige such employees to maintain confidentiality to the extent permitted by labor law for the period after their departure.

§ 5 Publications

In publications of the Contractor in connection with the project, appropriate reference must be made to the involvement of the Client and the project partners. The publications require the prior written consent of the client. They must also contain a reference to the funding body (Federal Ministry of Economics and Climate Protection).

§ 6 Other provisions

Amendments and/or supplements to this contract must be made in writing. This also applies to any waiver of this written form requirement.

Should a provision of this contract be invalid or void or become invalid or void during its execution, the validity of the remainder of this contract shall remain unaffected. The parties undertake to replace the invalid or void provision with a valid provision that comes as close as possible to what was intended by the parties in accordance with the meaning and purpose of the invalid provision.

§ 6 Data protection

Data protection in the context of the tendering procedure

The personal data and other information contained in the offer may be collected, processed and used by the Client and its agents within the scope of its/their responsibility. Disclosure of this data to other bodies shall be governed by the applicable data protection regulations. Bidders are requested to inform the employees involved in the project of the collection and storage of their data (name, official availability).

Data protection in the context of service provision

The Contractor guarantees compliance with data protection regulations in accordance with EU law, in particular the General Data Protection Regulation (GDPR) and national law, in particular the German Federal Data Protection Act (BDSG as amended).

At the request of the client, the contractor is obliged to submit a meaningful, compact data protection concept that demonstrates compliance with data protection requirements.

The Contractor undertakes vis-à-vis the Client to treat the personal data transmitted to it and all confidential information, business and trade secrets obtained within the scope of the contractual relationship as confidential, in particular not to pass them on to third parties and to process them exclusively for the agreed purposes.

The Contractor shall ensure that third parties authorized by it to access the personal data, including processors, observe and maintain the confidentiality and security of the personal data. The persons working under the responsibility of the Contractor, including processors, may only process the personal data on the instructions of the Contractor. This provision does not apply to persons who are legally authorized or obliged to access the personal data.

The Contractor undertakes in particular to implement suitable technical and organizational measures to protect the personal data transmitted to it in accordance with Art. 5 para. 2, Art. 24 para. 1 of the European General Data Protection Regulation (GDPR). Furthermore, the Contractor is the controller for the processing of personal data within the meaning of Art. 4 No. 7 GDPR and must therefore itself ensure compliance with data protection regulations.

The Contractor shall inform the data subjects appropriately in each case and provide them with further information in accordance with Art. 13, 14 GDPR. The contractor must ensure the legal basis required for the respective data processing.



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