

Izmjena postupka

OSNOVNI PODACI

Opis predmeta javne nabavke:

Zaključivanje trećeg godišnjeg ugovora za nabavku usluge rentiranja i održavanja sistema za administraciju garancija porijekla

Vrsta predmeta:

Usluge

Vrsta postupka:

Poziv po osnovu okvirnog sporazuma

PODACI O NARUČIOCU

Naziv:

Društvo sa ograničenom odgovornošću
„Crnogorski Operator tržišta električne energije” – Podgorica

PIB:

02849097

Uslovi prije izmjena

Opis	Tip uslova	Za rangiranje
U postupku javne nabavke može da učestvuje samo privredni subjekat koji: 1) nije pravosnažno osuđivan i čiji izvršni direktor nije pravosnažno osuđivan za neko od krivičnih djela sa obilježjima: a) kriminalnog udruživanja; b) stvaranja kriminalne organizacije; c) davanje mita; č) primanje mita; ć) davanje mita u privrednom poslovanju; d) primanje mita u privrednom poslovanju; dž) utaja poreza i doprinosa; đ) prevare; e) terorizma; f) finansiranja terorizma; g) terorističkog udruživanja; h) učestovanja u stranim oružanim formacijama; i) pranja novca; j) trgovine ljudima; k) trgovine maloljetnim licima radi usvojenja; l) zasnivanja ropskog odnosa i prevoza lica u ropskom odnosu što se dokazuje na osnovu uvjerenja ili potvrde nadležnog organa izdatog na osnovu kaznene evidencije, u skladu sa propisima države u kojoj privredni subjekat ima sjedište, odnosno u kojoj ovlašćeno lice tog privrednog subjekta ima prebivalište	Obavezni uslovi	Ne
U postupku javne nabavke može da učestvuje samo privredni subjekat koji je izmirio sve dospjele obaveze po osnovu poreza i doprinosa za penzijsko i zdravstveno osiguranje što se dokazuje na osnovu uvjerenja ili potvrde organa uprave nadležnog za poslove naplate poreza, odnosno nadležnog organa države u kojoj privredni subjekat ima sjedište	Obavezni uslovi	Ne
Rok izvršenja Drugog pojedinačnog ugovora je godinu dana od dana realizacije Prvog godišnjeg ugovora o javnoj nabavci odnosno 30.jun 2026.godine	Rok izvršenja ugovora	Ne
Period važenja ponude je 60 dana od dana otvaranja ponuda.	Rok važenja ponude	Ne
Drugi uslov : Ponuđač je u obavezi da u ponudi dostavi dokaze, odnosno sertifikate koje izdaju akreditovana sertifikaciona tijela o ispunjavanju uslova kvaliteta predmeta nabavke, i to: Dokaz o uspostavljenom sistemu upravljanja sigurnošću informacionih sistema: ISO/IEC 27001 – Sistem menadžmenta (upravljanja) bezbjednošću (sigurnošću) informacija.	Stručna i tehnička sposobnost	Ne

Uslovi nakon izmjena

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Rok izvršenja Tećeg pojedinačnog ugovora je 30.jun 2027.godine	Rok izvršenja ugovora	Ne
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Kriterijumi prije izmjena

Opis	Očekivani odgovor ponuđača	Metod bodovanja
Cijena	-	-

Kriterijumi nakon izmjena

Opis	Očekivani odgovor ponuđača	Metod bodovanja
Cijena	-	-

Tehnička specifikacija prije izmjena

Procijenjena vrijednost bez PDV	Redni broj predmeta nabavke	Opis predmeta nabavke	Bitne karakteristike predmeta nabavke	Količina	Jedinica mjere
33000.00	1	Usluge rentiranja i održavanja sistema za administraciju garancija porijekla	TECHNICAL SPECIFICATION 1 Introduction 1.1 Introduction LLC "Montenegrin Electricity Market Operator"-Podgorica /hereinafter: COTEE/ is a legal energy entity, responsible for organizing and managing the electricity market in Montenegro as its basic energy activity of public interest, which it performs in accordance with Energy Law, License, Market rules and international regulations, while according to Energy Law, it is appointed as the Issuing Body (IB) for Guarantees of Origin (GOs) from renewable energy sources and high-efficiency cogeneration and fulfilling obligations related to guarantees of origin. After assuming responsibility from the Energy Law, registry for guarantees of origin of electricity produced from renewable energy sources and high-efficiency cogeneration and energy facilities that use renewable energy sources and high-efficiency cogeneration is	1.00	kom

maintained by COTEE, while the same applies to the issuance, transfer, usage and withdrawal of the guarantee of origin. In order to enable the exchange of issued guarantees within the European Association of Organizations that issue guarantees of origin (AIB - "Association of Issuing Bodies"), COTEE started the membership process and became an associate member of AIB, while the goal is to finalize the process of acquiring the status of a full member of AIB. Membership in AIB provides the possibility that guarantees of origin issued for electricity produced from renewable energy sources and high-efficiency cogeneration in Montenegro, with a production period after acquiring the status of a full member of AIB, to get EECS-GO status at some point and to be recognized by all AIB members, also, guarantees of origin issued by other AIB members will be recognized in Montenegro, all in accordance with Renewable Energy Directive (RED II). It is necessary to provide a safe and reliable registry for guarantees of origin (also called the system in this document) for the certification of the origin of electricity produced in Montenegro. Currently, guarantees of origin are issued only for electricity produced from renewable energy sources.

Connection to the AIB Hub - a place where it is possible to export GOs of electricity produced in Montenegro to other registries throughout Europe, as well as to import guarantees of origin from Europe to Montenegro. AIB is currently the only association at the European level that holds to the quality of guarantees of origin, while AIB members are competent authorities for the administration of GO schemes in EU, EEA (European Economic Area) and Energy Community member states. In order to implement the international exchange of guarantees of origin, AIB operates a communication hub between the registries, called the AIB Hub. In this way, AIB operates Hub for international trade of energy certificates, avoiding bilateral connections between registries. AIB Hub enables member registries to inter-communicate, in order to transfer certificates, which provides many

advantages to the operators: Registry operators have a single point of contact with other registry operators, it is enough for them (operators) to test their registry in terms of communication with the Hub, while on further communication with other registers is handled by Hub, and an essential, but not the last advantage in the series, reliable source of information regarding the transfer of certificates provided by the Hub.

AIB guarantees the origin of European energy and uses a standardized energy certification system - the European Energy Certificate System (EECS) which provides a basic set of rules for energy certificates for all energy carriers and several uses and is based on structures and procedures that ensure the reliable operation of energy certificate schemes in Europe. The schemes meet the criteria of objectivity, non-discrimination, transparency and cost-effectiveness, in order to facilitate the international exchange of guarantees of origin. All guarantees of origin that are issued must follow the EECS - European Energy Certification System. In order to further facilitate the entire process, AIB manages the communication hub between the registers. All Issuing Bodies are appointed by member governments to issue energy certificates for electricity, that is, to manage the system for guarantee of origin for electricity.

The connection of the system with the AIB Hub platform must be provided in a prescribed and adequate manner in accordance with all national laws and existing and future international standards and regulations. The system must ensure continuous transfer/import/export of certificates, except during the time when pre-announced system maintenance work is performed.

The national laws and regulations on which the technical specification relies are as follows: Energy Law, Rules on the Register of Guarantees of Origin, Rules on the method of calculating, displaying and publishing the share of all types of energy sources in the produced, that is, supplied electricity and the method of controlling the calculation, Regulation on closer conditions

and method of issuing, transferring, consuming and withdrawing the guarantee of the origin of electricity produced from renewable energy sources and high-efficiency cogeneration.

The system will be designed in such a way that COTEE continues issuing and managing the register of guarantees of origin for the domain of Montenegro and (future full) membership in AIB, in full compliance with the laws of Montenegro (Energy Law, Rules on the Register of Guarantees of Origin, Rules on the method of calculating, displaying and publishing the share of all types of energy sources in the produced, that is, supplied electricity and the method of controlling the calculation, Regulation on closer conditions and method of issuing, transferring, consuming and withdrawing the guarantee of the origin of electricity produced from renewable energy sources and high-efficiency cogeneration), EECS standard, AIB EECS fact sheets, CEN standards and future standards.

The goal is to maintain (and establish) a reliable GO system in accordance with the existing and upcoming European CEN standards, which specify the requirements for GO and the principles and rules of operation of the EECS, which enables the designated competent authority to independently manage its own national register and transfer GO regionally, and later throughout Europe and internationally, i.e. system that facilitates the issuance, transfer, cancellation, withdrawal and expiry of GO in a reliable manner.

The Technical Specification is set of minimum requirements that Provider should provide. If there is anything not requested or requested in incorrect way within technical specification, while is at the same time essential to ensure that certificates, GO scheme and GO registry in Montenegro are in full compliance with international standards (EECS standard, AIB EECS Facts Sheets, AIB Rules, CEN standards), Provider shall inform COTEE on required specification changes and shall be obliged to implement those specification changes but only upon prior COTEE written consent.

1.2 Scope of procurement

The scope of the procurement is rent and maintenance of registry for guarantees of origin which is in full compliance with this technical specification and with Montenegrin laws and regulations, existing and future international standards listed in section 1.1. System shall provide issuance, transfer, cancellation, withdrawal and expiry of GOs, recording and retaining the relevant information on the electronic documents that GOs constitute, ensuring their immutability, registration of ownership of market parties of GOs on privately accessible accounts, recording statistical data enabling the publication of GO market statistics in accordance with EECS, flexibility in the design for regular upgrades and continuous futureproofing (in relation with changes in the regulatory framework), while detailed operational rules and features may vary for subject national domain (system is configured according to the national needs of the country).

The monthly fee for renting and maintaining the system for administering the guarantee of origin is fixed. The fixed monthly fee includes fee for renting and maintaining the system, while the number of issued and recorded imported guarantees of origin is not limited for the entire duration of the contract.

GO registry shall be available in English and Montenegrin language (Serbian (Latin, Montenegro)).

Provider is obliged to provide a production environment, as well as an active test environment during the duration of the contract. The guarantee period for the service that is the subject of this procurement should last for the entire duration of the contract, within which the provider is obliged to issue regular updates and patches (to correct errors) for the system without additional fees for COTEE, as well as necessary system updates due to changes in the national and international legislation in order for the register to comply with all current and future standards in a timely manner and for COTEE to smoothly perform activities in accordance with (future full) membership in AIB - without additional costs for COTEE. The provider is obliged to provide COTEE with all technical support

related to the functionality required by this technical specification or errors and malfunctions related to the same, without additional costs. The above requests for support will not be treated as a special engagement on request and will not represent an additional cost for COTEE. The list of Services to be carried out by the Provider in this project is as follows:

1. Active test environment during the entire duration of the contract,
2. System support and updates of system in case of changing in national and international standards and rules for whole duration of contract, and changes of configurable parameters.

1.3 Documentation

The Provider is responsible to maintain permanently updated technical documentation with versions of the software supplied up till the end of the contract. This includes service bulletins and periodic notices containing corrections, modifications and updates of the system.

1.4 General Functional Requirements

The following general functional requirements shall be supported by the system:

- IB business processes
 - o Registration of New Account Holders
 - o Registration of Production Devices (PD)
 - o Issuing of GOs
 - o Cancellation of GOs with accompanying information on reasons for cancellation
 - o Expiry of GOs
 - o Withdrawal of GOs
 - o Transfer, Export and Import of GOs (with accompanying information on where and when the certificates were exported or imported)
 - ☐ Through AIB HUB
 - ☐ Pier-to-pier (CMO-CMO) communication with certain IB
 - o Other necessary functional elements in accordance with EU rules and regulations
- Other processes
 - o Reporting
 - o Export of data
 - ☐ Wherever the data are displayed to the user, these data sets must be exportable to

(groups of data and/or selected data) in appropriate formats:

- MS Excel formats with possibility to import modified MS Excel formats back to the system
- PDF

- o API
 - All exportable data, mentioned above, should be downloadable via API
 - User functionalities such as requests for the following transactions: issuing, cancelation, transfer, export and import of GOs should be also available via API
 - An Account Holder can GET, POST, and DELETE scheduled transactions, as well as view recent transaction history
- o Statistics
- o Handling of standard/non-standard days, Daylight Saving Time changes, i.e. summer and winter time calculation (with 23 and 25 intervals/hours), must be taken into account in case of processes started based on time
- o Process monitoring function shall be available which shall provide information about the state of running processes and execution of finished processes
- o Enabling actions such as: complete administration of data in the registry, login on behalf of the registry user, approval of applications/requests for certification, defining multiple levels of system users, etc.

- Communication
 - o Communication shall be provided in accordance with COTEE's existing IT infrastructure (if applicable)
 - o System shall have interface for export of data (such as but not limited to volumes of issued, transferred, imported, exported, cancelled, withdrawn certificates, number of account holders, requests for issuance and etc.)
- Data Table Views
 - o Displaying of data in table format shall be supported and data views shall support displaying of values; displayed tables shall be easily downloadable from the system (at least in MS EXCEL format)
- Reporting, MS Office Integration
 - o System shall provide functionality for the reporting including report design and report generation
 - o Generated reports will be stored in the

system either in printable formats (pdf) or in formats for external use (xls, xlsx). They will be also distributed to the users via messages.

- o Direct transfer between the data grid in the system and MS EXCEL shall be available (this should be done by export to EXCEL)

- Dataflow

- o System shall allow tracking of incoming and outgoing files and data

1.5 Update of the system

Provider shall assure that GO Registry, during the duration of the contract, is at any time in accordance with the above-mentioned national legislation and existing and new international regulations and standards (1.1), free of charge.

Parameters written in technical specification as configurable shall be configurable by COTEE Administrator and Provider. If parameters are configurable only by Provider, Provider shall be obliged to change those parameters within maximum 2 working days after the written request of the authorized representative of COTEE.

Provider is obliged to issue regular updates and patches (bug fixes) of the system and to provide it to COTEE, free of charge.

If COTEE, as user, identifies some irregular operation in functioning or bugs in the system, it shall notify the Provider in written form. Provider is responsible to correct those irregular operation or bugs in the system in a timely manner, free of charge.

Provider is obliged to perform tests of new functionalities and changes in the system beforehand in accordance with the rules of the profession before their inclusion in regular production.

2 GO Registry requirements

System shall support all processes necessary for COTEE to act as IB for domain of Montenegro such as but not limited to: issuing, cancelation, withdrawal, expiry, transfer, export and import of GOs, registration of Production Devices (PD), maintaining PD registry, reporting and etc. The system will support at least national GOs, EECS-GOs and HEC-GOs schemes in

the system.
It is necessary for the system to provide functioning within the framework of the regional system for guarantees of origin in the Energy Community, i.e. the EnC scheme, while Provider will be obliged to make all necessary changes in the foreseeable future in accordance with the technical requirements of current and future regulations and standards without additional costs for COTEE, in accordance with the dynamics of COTEE's movement, as IB, towards full membership in the AIB, membership in the EECS scheme and the possibility to transfer GOs throughout Europe and internationally, while not placing any obstacle in retaining the EnC-GO scheme, if COTEE expresses the need for it, while respecting the rules and standards set by the competent authorities.
Provider is also obliged to ensure functioning within the regional system and to provide all the functionalities that the regional system implies and which are not specified in the technical specification (for an example: Public reports for transactions, production devices and account holders; Scheduled and recurring transactions; Multiple accounts and account hierarchy; Notifications and task list, etc.).

2.1 Account Holder and User settings
System shall support comprehensive user structure allowing different user groups with separate authorization levels. All users shall be identified by unique access credentials by using username and password and additional authentication. System shall provide at least the following types of users:

- GO registry administrator (COTEE administrator, root user)
- IB operator
- Metering data provider
- Account Holder administrator
- Account Holder operator

COTEE operators shall have the possibility to have all roles and types of user in the system.
System Administrator shall have the possibility to delegate certain rights and roles to other users (in case of special need, the delegation of rights and roles to other

users must be adapted to the COTEE's requirements). System shall have user register for the monitoring of users and its rights, user logs and all operations. The activity log tracks all user activities, including records of all user activities that import or change data in the system. Users can only see activities relevant to their user roles, while IB users can see activities related to the entire domain. Date and time must track all user activity. The record must contain at least the following information about: the category of activity, the type of activity, the entity that the activity in question changes, the user and related information, the domain and other specific details of the activity (e.g. information about changed fields in data change operations). It is necessary that the results can be filtered and sorted by all columns, while the time frame of the activity can also be defined. IB users can see activities specific to any type of system user, as well as a list of all activities without previous selecting filtering criteria.

Account holders shall have at least the following attributes:

- Name of the company (if AH is a company)
- Business ID, company registration number (from Company register if AH is a company)
- VAT number (if AH is company)
- Name and Surname of authorised person (if AH is physical person or company)
- Personal ID (if AH is physical person or company)
- Validity period
- Business address
- Contact information. Several contacts per AH shall be available (Technical problems, Invoicing, General jobs, etc.). All contacts shall have at least Name and Surname, Address, e-mail, phone and fax numbers information
- Roles of company. Several roles shall be possible, at least: Electricity Supplier, Producer, Metering Data Provider, Trader and Disclosure. All roles shall have their validity period

Users shall have at least the following attributes:

- username/password
- name of the company

- Name and Surname
- e-mails (several e-mails can be specified)
- user roles and rights
- status: unlocked/locked
- validity period

All data entry fields, if required, and for which COTEE can not provide data at a given time, must be optional or the values for such fields will be automatically generated by the system.

The system will allow access to a specific user to be disabled, i.e. to lock the user. In case that user access is locked, the user can not load data or perform any actions. System shall log every change in user register along with user responsible for that change.

System shall support Account holders to have one administration user who will create and maintain other users, their accounts, roles and access rights (the first administration user will be created and maintained only by COTEE Administrator), if it is set that Account Holders can create new users.

System shall support COTEE to create new Account holders, and COTEE and Account Holder users with permission to manage users can also create new Account Holder users.

System shall support easy change of the key AH ID information (e.g. VAT number, company registration number, etc.) with the option that this change is only allowed to COTEE Administrator.

If there are requirements for register Account Holder and register User (e.g. additional information) that are imposed by AIB rules, EECS rules, CEN standards and international standards Provider shall implement those requirements free of charge.

2.2 Registering of Account Holders

System shall support registration of the AH and their users through GO registry system user interface.

System shall support that all AH are identified with their company registration number. In the cases when AH is a physical person (not a company), those users must mandatory enter personal identity number as

mean of identification.
System shall support that one initial account is created when an Account holder is accepted.
System shall support Account holder information to be registered and maintained in the system by COTEE Administrator.

2.3 Registration of production devices
System shall support that production device can be registered by COTEE Administrator and Account Holder. If Account Holder can register Production Device then registration needs to be confirmed by COTEE. Upon submitting Production Device in system COTEE Administrator shall receive notification on registration of Production Device which needs final confirmation. Registration of Production Device shall have its validity period.
Production Devices shall have at least following information in the register:

- Name of the production device
- Unique number (GSRN) - by default it will be auto generated by the system; this option will be adjustable to enter the same
- Connection grid, system to which Production Device is connected (transmission, distribution)
- Validity period
- Starting date of operation
- Commissioning date
- Licenses info
- Location (country, city, zip code, street, Latitude, Longitude, Coordinate Code) according to AIB EECS Fact Sheet 16
- Energy source, according to AIB EECS Fact Sheet 5
- Technology, type of Production Device, according to AIB EECS Fact Sheet 5
- Ownership. System shall support multiple owners and allocation of GOs according to ownership percentage
- Locked or unlocked status
- Meters used
- CHP Information (cogeneration)

All data entry fields, if they are mandatory, and for which COTEE can not provide data at a given time, must be optional or the values for such fields will be automatically generated by the system.
If there are any other requirements for

Production Devices (e.g. additional information) that are imposed by AIB rules, EECS rules, EECS Fact Sheets, CEN standards and international standards
Provider shall implement those requirements free of charge.

System shall support Production Devices that require a new approval/audit after a defined time (i.e. every 5 years) with an option to enter an Audit date (Production devices approaching the audit date must create a task in the COTEE Administrators and IB operator task list a defined time before the audit date).

System shall support that one Production Device can have multiple owners and store information on percentage of ownership share held by each owner, with the option to register, collect and maintain the owners and their respective ownership share of a Production Device in the system.

System shall support that data of the production device can be changed and maintained by COTEE Administrator.

System shall support finding and tracking of all changes made in history of Production Devices and Licenses, and ensure revision of those changes is easily accessible.

System shall support possibility to enter future changes (with starting date of validity).

System shall support additional information about Pumped Hydro Power Plant (PHPP).
System shall support additional comment field for Bio-mass/Biogas in addition to a percentage of renewable energy.

System shall support flexible solutions since the requirements for handling of PHPP and bio-mass are prone to change over time.

System shall support flexible solutions allowing changes in codes and definitions since requirements for information registered for production devices, schemes and certificate licenses may change over time due to legislations and directives change.

System shall support possibility to register production device with a different date of commissioning than the original, if an existing production device is upgraded with the new installed capacity.

PD shall have locked or unlocked status. Locked status shall be used if COTEE for some reason wants to forbid issuance of

GOs for that PD.

2.4 Metering

System shall support XML and JSON file formats for the metering data exchange. System shall also support manual input of metering data.

The file formats that COTEE uses to import metering data, received from the metering data providers, do not represent standard file formats for the exchange of metering data.

System shall support upload of files with metering data through system user interface.

In addition to the above, system will also support manual input of measurement data.

Possibility to upload metering data shall have Metering data provider and COTEE administrator. In case the measurement data is imported by the same provider, the measurement data will become validated only after receiving the final confirmation/approval by the COTEE Administrator.

System shall support basic operations with received metering data such as but not limited to: addition, subtraction.

Metering data shall be used for issuing of certificates only after they have been approved by COTEE administrator.

In case that during the term of the contract there are changes in the non-standardized file formats that are currently used for importing measurement data, COTEE reserves the right to demand corrections from the service provider during the term of the contract in accordance with the changes, whereby the new changes may also include standardized XML formats (in accordance with ENTSO-E standardization), as well as non-standardized XML formats.

2.5 Issuing of GO

Producers turn to IB with a request for the issuance of guarantees of origin, which is registered at IB as a notification.

IB administrator will receive a notification (through the system's user interface) about the request that requires confirmation.

IB gives approval on request for the issuance of guarantees of origin (IB can approve or reject the same).

Producers shall receive GOs issued in accordance with reported production data. Structure of information in GOs, shall be in accordance with national regulations, AIB rules, EECS rules, CEN standards and international standards.

System shall support issuing one certificate per each 1MWh produced.

Certificates shall be issued based upon production data, license information and, when required, production reports.

In the cases when more than one certificate has to be issued for production within the same production period, system shall support creation of bulk certificates (number of certificates for the same production device and production period having a continuous certificate numbering, holding only the start and end number declared on the bulk certificate). Any surplus production less than 1MWh shall be aggregated within the calculation of production in the next period for that PD until it exceeds 1MWh.

System shall support that each shared owner receive certificates according to its share of the production device in the cases when production device has multiple registered owners (certificates are deposited into the account of each owner).

If amount of available production for issuance is less than requested amount COTEE shall issue available amount of certificates. If amount of available production for issuance is more than requested amount COTEE shall issue requested amount of certificates and rest of the available production for issuance shall remain available for issuance upon request for one time issuance. System shall also support one-time issuance of certificates upon request from Account Holder entitled to certificates from certain PD. All issuance of certificates shall have the option to be confirmed by COTEE Operator or issuance shall be valid upon submitting request by Account Holder. This option shall be configurable.

System shall support situations for pumped hydro when the consumption for a period may be higher than the production supporting that the consumption could be carried forward to the next issuing period until all consumption is subtracted from

production.
If the Production report is required (i.e. for Bio-mass or Pumped Hydro Power Plant), the Account Holder has to register a production report for the production period before the right amount of certificates can be calculated. If the report is not present when production data is received, the production data shall be stored but the issuing of certificates is initiated only when the production report is received. The production report shall cover a designated period of time. The report may give a percentage of the production based on renewable energy sources or consumption to be subtracted from the production or other criteria dependent on certificate schemes.
System shall support flexible solutions since requirements for handling of PHPP and Bio-mass are prone to change over time.
System shall support that only a percentage of the production for upgraded production devices can be entitled to certificates.
System shall support registration of a reduction percentage on the license that must be used to reduce the production entitled to certificates.
System shall support that each owner receive issued certificates according to its share of the production device for production device that has multiple registered owners (certificates are deposited into separated account of each owner)).

2.6 Transfer, Export and Import of Certificates

Account Holder and COTEE operators shall have the possibility to Transfer, Export and Import certificates via the system user interface.
Provider will enable the opening of user account for COTEE, which will be enabled to transfer certificates from the privileged producer to COTEE, and from COTEE to the supplier or other user of the register to which COTEE can transfer certificates.
System shall support transfer functionality that include:

- Transfers on a regular basis, like for example daily, weekly (i.e. every Thursday), monthly (i.e. each 25th of the month, etc.)
- Transfers in the future date (for specific

date)

- Immediate transfers (today, now)

Account Holder shall be able to transfer, import and export:

- Selected certificates
- Designated number of certificates
- Designated percentage of all available certificates

System shall support that future transfers could be changed or deleted by the Account holder until due date.

System shall support possibility to transfer only a part of a bulk certificate with the support that the remaining certificates shall be created as a new bulk certificate with the same information as the original (the total number of certificates on the two new bulk certificates must be identical to the original bulk certificate).

System shall support accounts holding certificates from certificate schemes not issued by the Issuing body to be available for transfers and cancellation.

System shall keep all transfer data in a transaction register for later use in the reports, statistics and audit.

System shall support that account history is easy available via the system user interface including all movements of the account and key information such as transaction date, transaction type, key certificate information, number of certificates, sender/receiver, etc.

System shall support internal transfers of certificates within two or more Account holder's/owner's own accounts by incurring the configurable costs to AH of such transfer.

System shall support approval workflow supporting possibility that one user can register the transfer but would need another user approval, according to the users security level.

System shall support that COTEE can block import of certain certificates, of certificates from certain country and certificates which are not for renewable energy sources. These options shall be configurable.

System shall support situation where all transfer user requirements are also valid for the certificates export.

System shall support input control and error handling of imported certificates according to the AIB rules.

System shall support handling production device information for imported certificates. System shall support possibility for an Account Holder to define (in Account holder settings) if he wants to manually accept imported certificates to his account before they are deposited. Account Holder shall have option to deny Import of certain certificates.

System shall support easy selection of external IB registries, Account holders and accounts (new entries can be added only by the COTEE Administrator or Provider).

System shall support certificate schemes connected to valid export IB registries with option not to export certificates when a scheme is not accepted by the receiving IB.

System shall support logging of all outgoing and incoming transactions in a way so that transactions, status and error codes (according to AIB Rules) are easily accessible to the COTEE Administrator.

System shall support dissolving of the certificates in transit (i.e. uncompleted export where acknowledgment has not been received) by the COTEE Administrator using either reallocation to the original account or the export completion.

System shall support export and import of certificates to be done either via the AIB hub or as pier-to-pier bilateral communication supporting the same format and procedures in both case but depending on type of certificate and receiving domain.

Domains may have different requirements from the system, therefore domain configuration is maintained via domain parameters. Some of the domain parameters relevant to the user interface are block exporting certificates to other domains and block importing certificates from other domains.

System shall support blockage of import of certificates from certain Domain(s) which COTEE selects.

The system will support that maximum allowed number of bundles for an export transfer (to another domain) is not less than 5000, while any number of bundles over maximum allowed number of bundles will result in a failed transaction.

2.7 Cancellation, withdrawal and expiry of

certificates
System shall support manual cancellation of certificates initiated by the Account holder or COTEE Operator.
System shall support manual cancellation to be done for selected certificates or a designated number of certificates.
System shall support cancellation statement with a unique reference number to be downloaded as a report in PDF format.
System shall support possibility for non-authorized users to view issued Cancellation Statements via the system user interface, being able to verify the origin of the statement, using the cancellation statements reference number as the search criteria.
System shall support availability of the cancelled certificates for reports, statistics and audit.
System shall support automatic expiry of certificates depending on the certificate scheme with support for definition of the expiry rules for each certificate scheme. Expiry rules shall be configurable.
System shall support availability of the expired certificates for reports, statistics and audit.
System shall support availability of the cancelled and expired certificates in the Account holders account statement, in the system user interface.
System shall support a function for the COTEE Operator to manually withdraw certificates.
System shall support COTEE Administrator having the possibility to withdraw certificates from the Account holder's accounts to correct error situations (i.e. if certificates have been exported but reallocated in IB registry due to an error situation).
System shall support availability of the withdrawn certificates for reports, statistics and audit.

2.8 Log

System shall allow comprehensive log on parameter changes and actions in system. Log file shall be easy available for preview. In this way COTEE administrator shall have chance to see logged users and to filter desired tasks or actions or processes done in system like: registration of PD, metering upload, production declaration submit,

generation of certificates, cancelation of certificates, expiry, withdrawal, transfer, etc.

2.9 Messaging

System shall allow comprehensive messaging function where every action in system shall be reported as message to users in system based on user access rights. COTEE Operator shall be able to see messages relating to every action in the system regardless of user initiating the action, while every other user shall be able to see messages only related to his account.

Accordingly, COTEE administrator shall have a chance to see messages in the system and filter desired one like: registration of PD, upload of metering data, submitted production declarations, generation of certificates, cancelation of certificates, expiry dates, withdrawal, transfer, etc.

2.10 Connecting to the AIB Hub Platform

GOs, in accordance with Energy Law, are issued by COTEE for electricity produced from renewable sources and high-efficiency cogeneration and also maintains GO register. In order to enable the exchange of issued guarantees within the AIB ("Association of Issuing Bodies"), COTEE started the process of joining AIB and became an associate member of AIB. COTEE's current status with AIB is "Applicant to Electricity Scheme Group". In order to continue maintaining GO register and to finalize the process of acquiring the status of a full member of AIB, it is necessary to purchase software, that is, a register that will connect and communicate with the AIB Hub. Full membership in AIB provides the possibility that guarantees of origin, which are issued for electricity from renewable energy sources and high-efficiency cogeneration in Montenegro, with a production period after the official acquisition of the status of a full member of AIB, at some point receive EECS-GO status and to be recognized by all AIB members. The connection of the system with the AIB Hub platform should be ensured in an

adequate manner in accordance with the laws of Montenegro (Energy Law, Rules on the Register of Guarantees of Origin, Rules on the method of calculating, displaying and publishing the share of all types of energy sources in the produced, that is, supplied electricity and the method of controlling the calculation, Regulation on closer conditions and method of issuing, transferring, consuming and withdrawing the guarantee of the origin of electricity produced from renewable energy sources and high-efficiency cogeneration), EECS standard, AIB EECS Facts Sheets, CEN standards and emerging standards. System shall allow continuous transfer/import/export of certificates, except during system maintenance.

2.11 Reports and statistics
System shall support reports to be formatted for online view, printing and for export in various file formats, XLS and PDF. System shall support that reports are available depending on user's profile rights and role permissions. System shall support pre-defined and ad-hoc created reports. System shall support report generator available for creation of ad-hoc reports. The generator must have access to all register data in the system such as accounts, production devices and licenses, transactions (transfer, export and import), production and consumption data, and issued, expired and cancelled certificates. Level of access to the data must dependent on authorization level for the user using the report. System shall support storing of report definitions as templates for repeated use. Historic data must be available for reports and statistics.

2.12 Security
It is necessary to provide a high level of security, multi-factor authentication and secure data storage in accordance with the European GDPR ("General Data Protection Regulation"). The system shall have a user structure where different rights can be distributed to different users and user groups (e.g. COTEE Administrator, Account holder

administrator, etc...).
Provider shall bare sole responsibility for security of all data in the system. Data in the system shall not be compromised or jeopardized in any way.

2.13 Interface and user functionality

The user shall have a possibility to select languages for user interface, including online help and reports.

System user interface shall be available in Montenegrin (Serbian (Latin, Montenegro) and English.

2.13.1 Functionality for Account holders/Account operator

System shall enable the following functionalities:

- General functionality:

- o Overview screen shall be able to provide key information from all of the Account holder's accounts such as account name, number of certificates, certificates close to expiry date, etc.

- o Functionality to contact support / COTEE administrator by e-mail shall be available from all main functions

- o Search for production device (all devices in Domain)

- Administration functionality:

- o Maintain users (only administration user - administrator) within Account Holder

- o Maintain administrative data and settings

- o Maintain user settings

- Account maintenance:

- o Create new accounts

- o View account status, account holder data and transactions of the account holder

- o Transfer certificates between AH own accounts

- o Transfer certificates between Account holders (within Domain or as export)

- o Set up future transfers of certificates

- o Set up fixed regular transfers of certificates (define number of certificates or a percentage of certificates in the account)

- o Change or cancel future or regular transfers of certificates

- o Manual cancellation of certificates

- Producers:

- o Maintain administrative data for production device and license (e.g. issuing account)

- o View production device data and respected license information

- o Overview of issued certificates
- o Add production reports

2.13.2 Functionality for COTEE

Administrator

- The COTEE Administrator must have access to all Account Holder functionality on all accounts
- Search for
 - o Account Holders
 - o Account Holder Data
 - o Users
 - o Production Devices
 - o Certificate Numbers
- Administration of Account Holders and users
 - o Create new Account Holder
 - o Maintain administrative user for Account Holder
 - o Maintain user groups and access rights
- Account maintenance
 - o Suspend accounts
 - o Release suspended accounts
- Producers/Certificates
 - o Issue certificates manually
 - o Withdraw issued certificates
 - o Maintain production devices and licenses
 - o Maintain / change Account Operator
 - o View certificate transfer details
- System parameters and settings
 - o Maintain domains
 - o Maintain available accounts in other domains (available for export)
 - o Maintain certificate schemes and associations
 - o Maintain source and technology codes
 - o Earmark codes and flags
 - o Maintain administrative fees (if and when invoicing is added)
 - o Maintain other system parameters and settings

2.13.3 Functionality for Supervisory authority

- Search for
 - o Account Holders
 - o Account Holder data
 - o Production devices
 - o Users
 - o Certificate Numbers
- Supervise certificate Account Holders
 - o View master data (Account Holder, accounts, product devices and licenses)
 - o View certificate transfer details
 - o View all other registry details

- Reports
- o Ad-hoc reports access according to Reports and Statistics chapter.

2.14 Other Functionality

- System shall support possibility for an on-line search in other registries to find party details in:
 - o Other Domain registries to find party information of Account holders for external transfers
- Decimal point, number formatting and date time formats shall follow the settings of the client computer
- All time periods shall be expressed using an inclusive start date/time and an inclusive end date/time. Date and time displayed in system user interface shall be in CET time. System shall be able to handle data and issued certificates from different time zones.
- All date / time stamps of transactions shall show the date of the transaction in the user interface
- The system shall have interfaces to other external systems for data exchange.
 - o Interface will handle import and export of certificates between this registry and other registries using the AIB hub and directly between this registry and another registry not using the AIB hub; this interface shall be done according to AIB standards.

2.15 Data handling

System shall support that all data regarding certificates (issue, transfer, export, import and withdrawal data) being kept for later use in reports, statistics and audit for the minimum of 10 years.

System shall support production data, production declaration and production reports to be available in the database for the minimum of 10 years.

All data related to period older than 10 years shall be stored in GO registry archive.

In case that after the end of contract COTEE outsource or buy GO registry from another party or build its own GO registry Provider is obliged to deliver COTEE full backup, i.e. all data regarding AH, PD, metering data, production reports, certificates and transactions of certificates (issue, transfer, export, import and withdrawal data) stored in

Provider's GO registry, including the activity log. Data shall be delivered in such way that can be uploaded in COTEE relational database management system (as sql query, plain text file – xml or csv format or some other way that provider shall propose and COTEE will accept).

Provider is obliged to do a full backup of all data regarding AH, PD, metering data, production reports, certificates and transactions of certificates (issue, transfer, export, import and withdrawal data), activity log and deliver at the COTEE's request within a period of no longer than one month. Backup data shall be delivered in such way that can be uploaded in COTEE relational database management system (as sql query, plain text file – xml or csv format or some other way that provider shall propose and COTEE will accept). Provider shall deliver appropriate documentation for adequate use of delivered backup data and COTEE will approve mentioned documentation.

2.16 Production and Testing environment

The Provider shall also provide GO Test Registry, that will be functionally identical to the Production GO Registry, for testing purposes and for the whole contract validity period.

During the term of the contract, Provider is obliged to provide a development support service or upgrades of the system at the request of COTEE (in accordance with the current and future regulations of Montenegro, Montenegrin and international standards and all regulations and standards specified in section 1.1) and to provide support at the request of COTEE in setting up the system, changing the system, editing the database and other actions that COTEE is not able to perform by itself. COTEE submits the request in question to the Provider, while the Provider, after assessment of the request, shall submit it to COTEE for approval.

2.17 Guarantee Period

The guarantee period lasts for the duration of the Framework agreement and three annual contracts.

Within the guarantee period, Provider is obliged to fulfill all requests that are the subject of this technical specification promptly, conscientiously and in accordance with the rules of the profession without additional costs for COTEE. During the guarantee period, Provider is obliged to issue regular implementations for upgrades, updates and patches (to correct errors) for the system and deliver them to COTEE without additional fees for the entire duration of the contract. Within the guarantee period, Provider is obliged to promptly correct all errors and omissions in the system noted in the minutes by COTEE, which were not observed during the test period and handover of the system, and to note in the minutes the corrections made, which submits to COTEE for approval.

In this sense, there can be no additional costs for the customer (maintenance, on-demand engagement, system support, etc. - which do not fall outside the scope of the technical specification) and can not be subject of separate invoicing, that is, they will be an integral part of the agreed fixed monthly fee.

Within the guarantee period, it is understood that the system easily meets all new requirements and expansion, including connection to the AIB Hub. It is necessary that the technical requirements and their realization follow the current and future national and international regulations and standards, as well as the dynamics of the movement of COTEE (as IB) towards full membership in AIB, membership in the EECS scheme and the possibility of transferring GOs across Europe and internationally, while not setting any obstacle in keeping the EnC-GO scheme and functioning within the Energy Community, if COTEE expresses the need for it, while respecting eventual regulatory and technical restrictions, rules and standards placed by the competent authorities. All requirements and obligations of Provider, which are the subject of this technical specification, can not be the subject of separate invoicing, that is, they will be an integral part of the contracted fixed monthly fee.

During the term of the contract, Provider is obliged to submit to COTEE after all

completed works/services a report on completed works/services, which must be approved by COTEE beforehand.

2.18 Security settings

2.18.1 Password management

Interface for the users to look and manage their account information (change their passwords), shall be provided. It is expected that the password has to meet minimum criteria like capital letters, lower-case letters, numbers and special characters.

2.18.2 Login management

Login shall be provided in that manner that each user shall be identified by the system with unique identification without doubt. Login must be provided with username and password.

In case if some of the users forget their password, there should be a mechanism for solving that problem. In order to prevent poor and weak passwords, password management system or some other mechanism will be implemented with custom rules (password length, frequency of change, password complexity, login attempts, time until the session is deactivated, no repeating password or some other rules).

2.18.3 Account Auditing and Logging

The Provider must provide functionality where it is possible to trace account activity of every user. The activity log will provide an audit trail of user activity that allows specific action to be traced to a single user, location and time.

2.19 Provider support

During the contract period, the Provider is responsible for the support of the registry system.

The Provider shall provide On-Call Software Support Service on working days between 09:00 and 16:00.

Additionally, COTEE will report all failures and send support requests to the support portal provided by Provider. Provider is obliged to inform COTEE via e-mail that the request for intervention/support has been successfully completed. Provider will be

provided with a list of the authorized representatives of COTEE who can report failure. The response to the failure report, the working hours and the time provided for resolving service requests are defined in the contract. The priority of failures is defined in four categories: emergency, high, medium and low priority. It is necessary to comply with the requested minimum requirements regarding the mentioned categories. The response to an emergency must be within one hour (beginning of problem solving and continuous work until the establishment of proper functioning of the system), high priority within two hours at the latest (start of problem solving and continuous work until the problem is eliminated), medium priority within four hours at the latest (beginning of problem solving and work only during working hours until the problem is solved) and low priority within eight hours at the latest (start of problem solving and work only during working hours until the problem is solved).

In case that Provider is late with the start of the elimination of the disturbance that exceeds 50% of the maximum time provided for that level of disturbance, COTEE reserves the right to reduce the payment for the service for that month by 5%, for each problem that occurred for which the beginning of the elimination of the disturbance was delayed. COTEE will invite Provider in writing to jointly ascertain the cause and scope of the omissions through the minutes.

2.20 Required system availability

The provider is obliged to meet the service guarantee of minimum system availability of 99,5% on each calendar month of contract validity, excluding pre-planned downtime for purpose of regular system maintenance and upgrades.

The system should be available every day from 00:00h to 24:00h, while due to the specifics of the business and the future needs of internal and external users, minimum system availability of 99.5% on a monthly basis is required. Planned shutdowns must be announced in advance and must be planned at a specific time (periods outside of working hours).

Provider is obliged to notify COTEE in a timely manner, in writing, of the start of work on the system, the time and reasons for its unavailability (planned regular maintenance, upgrades, etc.) or to provide in a timely manner system information in a visible place within the system user interface such as the following: information about the latest system updates, planned updates and time frame during which system will be unavailable in order to implement new features, improvements and potential bug fixes.

If it is determined that the minimum availability of the system on a monthly level was less than the predicted 99,5%, COTEE reserves the right to reduce the monthly invoice. In case the minimum availability of the system on a monthly level does not reach the predicted 99,5%, COTEE reserves the right to reduce the service invoice for that month as follows:

- system availability from 98,00% to 99,49% 20%
- system availability from 90,00% to 97,99%..... 50%
- system availability less than 90,00%100%

COTEE shall inform Provider in writing in the case when minimum availability of the system on a monthly basis was less than expected and invite Provider to jointly ascertain cause and extent of the failures occurred through the minutes.

2.21 Additional requirements
The bidder must submit proof of meeting the requirements of professional-technical and personnel qualifications:

- evidence of an established information system security management system: ISO/IEC 27001 Information security management system

It is necessary that system easily meets all new requirements and expansions, as well as connecting to AIB Hub.
During the duration of the contract and the provision of services, key assigned personnel with specific knowledge, qualifications and professional experience in the field of work may be removed or replaced only at the request or with the prior consent of COTEE. Unauthorized removal or

			replacement of key personnel during the duration of the contract is an extraordinary reason for termination of the contract by COTEE. 3 Abbreviations and Annex ANNEX 1 – Abbreviations AIB Association of Issuing Bodies CEN European committee for standardization COTEE Montenegrin Electricity Market Operator CSV Comma-separated values EECS European Energy Certificate System EIC ENTSO-E Identification Coding Scheme ENTSO-E European Transmission System Operators GSRN Global Service Relation Number IB Issuing Body ISO International Organization for Standardization IT Information Technology PD Production Device PDF Portable Document Format PHPP Pumped Hydro Power Plant AT Acceptance Test XML Extended Mark-up Language		
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Tehnička specifikacija nakon izmjena

Procijenjena vrijednost bez PDV	Redni broj predmeta nabavke	Opis predmeta nabavke	Bitne karakteristike predmeta nabavke	Količina	Jedinica mjere
33000.00	1	Usluge rentiranja i održavanja sistema za administraciju	TECHNICAL SPECIFICATION	1.00	kom

garancija porijekla

1 Introduction

1.1 Introduction

LLC "Montenegrin Electricity Market Operator"-Podgorica /hereinafter: COTEE/ is a legal energy entity, responsible for organizing and managing the electricity market in Montenegro as its basic energy activity of public interest, which it performs in accordance with Energy Law, License, Market rules and international regulations, while according to Energy Law, it is appointed as the Issuing Body (IB) for Guarantees of Origin (GOs) from renewable energy sources and high-efficiency cogeneration and fulfilling obligations related to guarantees of origin. After assuming responsibility from the Energy Law, registry for guarantees of origin of electricity produced from renewable energy sources and high-efficiency cogeneration and energy facilities that use renewable energy sources and high-efficiency cogeneration is maintained by COTEE, while the same applies to the issuance, transfer, usage and withdrawal of the guarantee of origin. In order to enable the exchange of issued guarantees within the European Association of Organizations that issue guarantees of origin (AIB - "Association of Issuing Bodies"), COTEE started the membership process and became an associate member of AIB, while the goal is to finalize the process of acquiring the status of a full member of AIB. Membership in AIB provides the possibility that guarantees of origin issued for electricity produced from renewable energy sources and high-efficiency cogeneration in Montenegro, with a production period after acquiring the status of a full member of AIB, to get EECS-GO status at some point and to be recognized by all AIB members, also, guarantees of origin issued by other AIB members will be recognized in Montenegro, all in accordance with Renewable Energy Directive (RED II). It is necessary to provide a safe and reliable registry for guarantees of origin (also called the system in this document) for the certification of the origin of electricity produced in Montenegro. Currently,

guarantees of origin are issued only for electricity produced from renewable energy sources.

Connection to the AIB Hub - a place where it is possible to export GOs of electricity produced in Montenegro to other registries throughout Europe, as well as to import guarantees of origin from Europe to Montenegro. AIB is currently the only association at the European level that holds to the quality of guarantees of origin, while AIB members are competent authorities for the administration of GO schemes in EU, EEA (European Economic Area) and Energy Community member states. In order to implement the international exchange of guarantees of origin, AIB operates a communication hub between the registries, called the AIB Hub. In this way, AIB operates Hub for international trade of energy certificates, avoiding bilateral connections between registries.

AIB Hub enables member registries to inter-communicate, in order to transfer certificates, which provides many advantages to the operators: Registry operators have a single point of contact with other registry operators, it is enough for them (operators) to test their registry in terms of communication with the Hub, while on further communication with other registers is handled by Hub, and an essential, but not the last advantage in the series, reliable source of information regarding the transfer of certificates provided by the Hub.

AIB guarantees the origin of European energy and uses a standardized energy certification system - the European Energy Certificate System (EECS) which provides a basic set of rules for energy certificates for all energy carriers and several uses and is based on structures and procedures that ensure the reliable operation of energy certificate schemes in Europe. The schemes meet the criteria of objectivity, non-discrimination, transparency and cost-effectiveness, in order to facilitate the international exchange of guarantees of origin. All guarantees of origin that are issued must follow the EECS - European Energy Certification System. In order to further facilitate the entire process, AIB

manages the communication hub between the registers. All Issuing Bodies are appointed by member governments to issue energy certificates for electricity, that is, to manage the system for guarantee of origin for electricity.

The connection of the system with the AIB Hub platform must be provided in a prescribed and adequate manner in accordance with all national laws and existing and future international standards and regulations. The system must ensure continuous transfer/import/export of certificates, except during the time when pre-announced system maintenance work is performed.

The national laws and regulations on which the technical specification relies are as follows: Energy Law, Rules on the Register of Guarantees of Origin, Rules on the method of calculating, displaying and publishing the share of all types of energy sources in the produced, that is, supplied electricity and the method of controlling the calculation, Regulation on closer conditions and method of issuing, transferring, consuming and withdrawing the guarantee of the origin of electricity produced from renewable energy sources and high-efficiency cogeneration.

The system will be designed in such a way that COTEE continues issuing and managing the register of guarantees of origin for the domain of Montenegro and (future full) membership in AIB, in full compliance with the laws of Montenegro (Energy Law, Rules on the Register of Guarantees of Origin, Rules on the method of calculating, displaying and publishing the share of all types of energy sources in the produced, that is, supplied electricity and the method of controlling the calculation, Regulation on closer conditions and method of issuing, transferring, consuming and withdrawing the guarantee of the origin of electricity produced from renewable energy sources and high-efficiency cogeneration), EECS standard, AIB EECS fact sheets, CEN standards and future standards.

The goal is to maintain (and establish) a reliable GO system in accordance with the existing and upcoming European CEN standards, which specify the requirements

for GO and the principles and rules of operation of the EECS, which enables the designated competent authority to independently manage its own national register and transfer GO regionally, and later throughout Europe and internationally, i.e. system that facilitates the issuance, transfer, cancellation, withdrawal and expiry of GO in a reliable manner.

The Technical Specification is set of minimum requirements that Provider should provide. If there is anything not requested or requested in incorrect way within technical specification, while is at the same time essential to ensure that certificates, GO scheme and GO registry in Montenegro are in full compliance with international standards (EECS standard, AIB EECS Facts Sheets, AIB Rules, CEN standards), Provider shall inform COTEE on required specification changes and shall be obliged to implement those specification changes but only upon prior COTEE written consent.

1.2 Scope of procurement

The scope of the procurement is rent and maintenance of registry for guarantees of origin which is in full compliance with this technical specification and with Montenegrin laws and regulations, existing and future international standards listed in section 1.1. System shall provide issuance, transfer, cancellation, withdrawal and expiry of GOs, recording and retaining the relevant information on the electronic documents that GOs constitute, ensuring their immutability, registration of ownership of market parties of GOs on privately accessible accounts, recording statistical data enabling the publication of GO market statistics in accordance with EECS, flexibility in the design for regular upgrades and continuous futureproofing (in relation with changes in the regulatory framework), while detailed operational rules and features may vary for subject national domain (system is configured according to the national needs of the country).

The monthly fee for renting and maintaining the system for administering the guarantee of origin is fixed. The fixed monthly fee includes fee for renting and maintaining the system, while the number of issued and

recorded imported guarantees of origin is not limited for the entire duration of the contract. GO registry shall be available in English and Montenegrin language (Serbian (Latin, Montenegro)).

Provider is obliged to provide a production environment, as well as an active test environment during the duration of the contract. The guarantee period for the service that is the subject of this procurement should last for the entire duration of the contract, within which the provider is obliged to issue regular updates and patches (to correct errors) for the system without additional fees for COTEE, as well as necessary system updates due to changes in the national and international legislation in order for the register to comply with all current and future standards in a timely manner and for COTEE to smoothly perform activities in accordance with (future full) membership in AIB - without additional costs for COTEE. The provider is obliged to provide COTEE with all technical support related to the functionality required by this technical specification or errors and malfunctions related to the same, without additional costs. The above requests for support will not be treated as a special engagement on request and will not represent an additional cost for COTEE.

The list of Services to be carried out by the Provider in this project is as follows:

1. Active test environment during the entire duration of the contract,
2. System support and updates of system in case of changing in national and international standards and rules for whole duration of contract, and changes of configurable parameters.

1.3 Documentation

The Provider is responsible to maintain permanently updated technical documentation with versions of the software supplied up till the end of the contract. This includes service bulletins and periodic notices containing corrections, modifications and updates of the system.

1.4 General Functional Requirements

The following general functional

requirements shall be supported by the system:

- IB business processes
 - o Registration of New Account Holders
 - o Registration of Production Devices (PD)
 - o Issuing of GOs
 - o Cancellation of GOs with accompanying information on reasons for cancellation
 - o Expiry of GOs
 - o Withdrawal of GOs
 - o Transfer, Export and Import of GOs (with accompanying information on where and when the certificates were exported or imported)
 - ☐ Through AIB HUB
 - ☐ Pier-to-pier (CMO-CMO) communication with certain IB
 - o Other necessary functional elements in accordance with EU rules and regulations
- Other processes
 - o Reporting
 - o Export of data
 - ☐ Wherever the data are displayed to the user, these data sets must be exportable to (groups of data and/or selected data) in appropriate formats:
 - MS Excel formats with possibility to import modified MS Excel formats back to the system
 - PDF
 - o API
 - ☐ All exportable data, mentioned above, should be downloadable via API
 - ☐ User functionalities such as requests for the following transactions: issuing, cancelation, transfer, export and import of GOs should be also available via API
 - ☐ An Account Holder can GET, POST, and DELETE scheduled transactions, as well as view recent transaction history

- o Statistics
- o Handling of standard/non-standard days, Daylight Saving Time changes, i.e. summer and winter time calculation (with 23 and 25 intervals/hours), must be taken into account in case of processes started based on time
- o Process monitoring function shall be available which shall provide information about the state of running processes and execution of finished processes
- o Enabling actions such as: complete administration of data in the registry, login on

behalf of the registry user, approval of applications/requests for certification, defining multiple levels of system users, etc.

- Communication
 - o Communication shall be provided in accordance with COTEE's existing IT infrastructure (if applicable)
 - o System shall have interface for export of data (such as but not limited to volumes of issued, transferred, imported, exported, cancelled, withdrawn certificates, number of account holders, requests for issuance and etc.)
- Data Table Views
 - o Displaying of data in table format shall be supported and data views shall support displaying of values; displayed tables shall be easily downloadable from the system (at least in MS EXCEL format)
- Reporting, MS Office Integration
 - o System shall provide functionality for the reporting including report design and report generation
 - o Generated reports will be stored in the system either in printable formats (pdf) or in formats for external use (xls,xlsx). They will be also distributed to the users via messages.
 - o Direct transfer between the data grid in the system and MS EXCEL shall be available (this should be done by export to EXCEL)
- Dataflow
 - o System shall allow tracking of incoming and outgoing files and data

1.5 Update of the system
Provider shall assure that GO Registry, during the duration of the contract, is at any time in accordance with the above-mentioned national legislation and existing and new international regulations and standards (1.1), free of charge.
Parameters written in technical specification as configurable shall be configurable by COTEE Administrator and Provider. If parameters are configurable only by Provider, Provider shall be obliged to change those parameters within maximum 2 working days after the written request of the authorized representative of COTEE.
Provider is obliged to issue regular updates and patches (bug fixes) of the system and to

provide it to COTEE, free of charge.
If COTEE, as user, identifies some irregular operation in functioning or bugs in the system, it shall notify the Provider in written form. Provider is responsible to correct those irregular operation or bugs in the system in a timely manner, free of charge.
Provider is obliged to perform tests of new functionalities and changes in the system beforehand in accordance with the rules of the profession before their inclusion in regular production.

2 GO Registry requirements

System shall support all processes necessary for COTEE to act as IB for domain of Montenegro such as but not limited to: issuing, cancelation, withdrawal, expiry, transfer, export and import of GOs, registration of Production Devices (PD), maintaining PD registry, reporting and etc. The system will support at least national GOs, EECS-GOs and HEC-GOs schemes in the system.

It is necessary for the system to provide functioning within the framework of the regional system for guarantees of origin in the Energy Community, i.e. the EnC scheme, while Provider will be obliged to make all necessary changes in the foreseeable future in accordance with the technical requirements of current and future regulations and standards without additional costs for COTEE, in accordance with the dynamics of COTEE's movement, as IB, towards full membership in the AIB, membership in the EECS scheme and the possibility to transfer GOs throughout Europe and internationally, while not placing any obstacle in retaining the EnC-GO scheme, if COTEE expresses the need for it, while respecting the rules and standards set by the competent authorities.

Provider is also obliged to ensure functioning within the regional system and to provide all the functionalities that the regional system implies and which are not specified in the technical specification (for an example: Public reports for transactions, production devices and account holders; Scheduled and recurring transactions; Multiple accounts and account hierarchy; Notifications and task list,

etc.).

2.1 Account Holder and User settings

System shall support comprehensive user structure allowing different user groups with separate authorization levels. All users shall be identified by unique access credentials by using username and password and additional authentication. System shall provide at least the following types of users:

- GO registry administrator (COTEE administrator, root user)
- IB operator
- Metering data provider
- Account Holder administrator
- Account Holder operator

COTEE operators shall have the possibility to have all roles and types of user in the system.

System Administrator shall have the possibility to delegate certain rights and roles to other users (in case of special need, the delegation of rights and roles to other users must be adapted to the COTEE's requirements). System shall have user register for the monitoring of users and its rights, user logs and all operations.

The activity log tracks all user activities, including records of all user activities that import or change data in the system. Users can only see activities relevant to their user roles, while IB users can see activities related to the entire domain. Date and time must track all user activity. The record must contain at least the following information about: the category of activity, the type of activity, the entity that the activity in question changes, the user and related information, the domain and other specific details of the activity (e.g. information about changed fields in data change operations). It is necessary that the results can be filtered and sorted by all columns, while the time frame of the activity can also be defined. IB users can see activities specific to any type of system user, as well as a list of all activities without previous selecting filtering criteria. Account holders shall have at least the following attributes:

- Name of the company (if AH is a company)
- Business ID, company registration number (from Company register if AH is a company)

- VAT number (if AH is company)
- Name and Surname of authorised person (if AH is physical person or company)
- Personal ID (if AH is physical person or company)
- Validity period
- Business address
- Contact information. Several contacts per AH shall be available (Technical problems, Invoicing, General jobs, etc.). All contacts shall have at least Name and Surname, Address, e-mail, phone and fax numbers information
- Roles of company. Several roles shall be possible, at least: Electricity Supplier, Producer, Metering Data Provider, Trader and Disclosure. All roles shall have their validity period

Users shall have at least the following attributes:

- username/password
- name of the company
- Name and Surname
- e-mails (several e-mails can be specified)
- user roles and rights
- status: unlocked/locked
- validity period

All data entry fields, if required, and for which COTEE can not provide data at a given time, must be optional or the values for such fields will be automatically generated by the system.

The system will allow access to a specific user to be disabled, i.e. to lock the user. In case that user access is locked, the user can not load data or perform any actions. System shall log every change in user register along with user responsible for that change.

System shall support Account holders to have one administration user who will create and maintain other users, their accounts, roles and access rights (the first administration user will be created and maintained only by COTEE Administrator), if it is set that Account Holders can create new users.

System shall support COTEE to create new Account holders, and COTEE and Account Holder users with permission to manage users can also create new Account Holder

users.
System shall support easy change of the key AH ID information (e.g. VAT number, company registration number, etc.) with the option that this change is only allowed to COTEE Administrator.
If there are requirements for register Account Holder and register User (e.g. additional information) that are imposed by AIB rules, EECS rules, CEN standards and international standards Provider shall implement those requirements free of charge.

2.2 Registering of Account Holders

System shall support registration of the AH and their users through GO registry system user interface.

System shall support that all AH are identified with their company registration number. In the cases when AH is a physical person (not a company), those users must mandatory enter personal identity number as mean of identification.

System shall support that one initial account is created when an Account holder is accepted.

System shall support Account holder information to be registered and maintained in the system by COTEE Administrator.

2.3 Registration of production devices

System shall support that production device can be registered by COTEE Administrator and Account Holder. If Account Holder can register Production Device then registration needs to be confirmed by COTEE. Upon submitting Production Device in system COTEE Administrator shall receive notification on registration of Production Device which needs final confirmation. Registration of Production Device shall have its validity period.

Production Devices shall have at least following information in the register:

- Name of the production device
- Unique number (GSRN) - by default it will be auto generated by the system; this option will be adjustable to enter the same
- Connection grid, system to which Production Device is connected (transmission, distribution)
- Validity period

- Starting date of operation
- Commissioning date
- Licenses info
- Location (country, city, zip code, street, Latitude, Longitude, Coordinate Code) according to AIB EECS Fact Sheet 16
- Energy source, according to AIB EECS Fact Sheet 5
- Technology, type of Production Device, according to AIB EECS Fact Sheet 5
- Ownership. System shall support multiple owners and allocation of GOs according to ownership percentage
- Locked or unlocked status
- Meters used
- CHP Information (cogeneration)

All data entry fields, if they are mandatory, and for which COTEE can not provide data at a given time, must be optional or the values for such fields will be automatically generated by the system.

If there are any other requirements for Production Devices (e.g. additional information) that are imposed by AIB rules, EECS rules, EECS Fact Sheets, CEN standards and international standards Provider shall implement those requirements free of charge.

System shall support Production Devices that require a new approval/audit after a defined time (i.e. every 5 years) with an option to enter an Audit date (Production devices approaching the audit date must create a task in the COTEE Administrators and IB operator task list a defined time before the audit date).

System shall support that one Production Device can have multiple owners and store information on percentage of ownership share held by each owner, with the option to register, collect and maintain the owners and their respective ownership share of a Production Device in the system.

System shall support that data of the production device can be changed and maintained by COTEE Administrator.

System shall support finding and tracking of all changes made in history of Production Devices and Licenses, and ensure revision of those changes is easily accessible.

System shall support possibility to enter future changes (with starting date of validity).

System shall support additional information about Pumped Hydro Power Plant (PHPP). System shall support additional comment field for Bio-mass/Biogas in addition to a percentage of renewable energy. System shall support flexible solutions since the requirements for handling of PHPP and bio-mass are prone to change over time. System shall support flexible solutions allowing changes in codes and definitions since requirements for information registered for production devices, schemes and certificate licenses may change over time due to legislations and directives change. System shall support possibility to register production device with a different date of commissioning than the original, if an existing production device is upgraded with the new installed capacity. PD shall have locked or unlocked status. Locked status shall be used if COTEE for some reason wants to forbid issuance of GOs for that PD.

2.4 Metering

System shall support XML and JSON file formats for the metering data exchange. System shall also support manual input of metering data. The file formats that COTEE uses to import metering data, received from the metering data providers, do not represent standard file formats for the exchange of metering data. System shall support upload of files with metering data through system user interface. In addition to the above, system will also support manual input of measurement data. Possibility to upload metering data shall have Metering data provider and COTEE administrator. In case the measurement data is imported by the same provider, the measurement data will become validated only after receiving the final confirmation/approval by the COTEE Administrator. System shall support basic operations with received metering data such as but not limited to: addition, subtraction. Metering data shall be used for issuing of certificates only after they have been approved by COTEE administrator. In case that during the term of the contract there are changes in the non-standardized

file formats that are currently used for importing measurement data, COTEE reserves the right to demand corrections from the service provider during the term of the contract in accordance with the changes, whereby the new changes may also include standardized XML formats (in accordance with ENTSO-E standardization), as well as non-standardized XML formats.

2.5 Issuing of GO

Producers turn to IB with a request for the issuance of guarantees of origin, which is registered at IB as a notification.

IB administrator will receive a notification (through the system's user interface) about the request that requires confirmation.

IB gives approval on request for the issuance of guarantees of origin (IB can approve or reject the same).

Producers shall receive GOs issued in accordance with reported production data. Structure of information in GOs, shall be in accordance with national regulations, AIB rules, EECS rules, CEN standards and international standards.

System shall support issuing one certificate per each 1MWh produced.

Certificates shall be issued based upon production data, license information and, when required, production reports.

In the cases when more than one certificate has to be issued for production within the same production period, system shall support creation of bulk certificates (number of certificates for the same production device and production period having a continuous certificate numbering, holding only the start and end number declared on the bulk certificate). Any surplus production less than 1MWh shall be aggregated within the calculation of production in the next period for that PD until it exceeds 1MWh.

System shall support that each shared owner receive certificates according to its share of the production device in the cases when production device has multiple registered owners (certificates are deposited into the account of each owner).

If amount of available production for issuance is less than requested amount COTEE shall issue available amount of

certificates. If amount of available production for issuance is more than requested amount COTEE shall issue requested amount of certificates and rest of the available production for issuance shall remain available for issuance upon request for one time issuance. System shall also support one-time issuance of certificates upon request from Account Holder entitled to certificates from certain PD. All issuance of certificates shall have the option to be confirmed by COTEE Operator or issuance shall be valid upon submitting request by Account Holder. This option shall be configurable.

System shall support situations for pumped hydro when the consumption for a period may be higher than the production supporting that the consumption could be carried forward to the next issuing period until all consumption is subtracted from production.

If the Production report is required (i.e. for Bio-mass or Pumped Hydro Power Plant), the Account Holder has to register a production report for the production period before the right amount of certificates can be calculated. If the report is not present when production data is received, the production data shall be stored but the issuing of certificates is initiated only when the production report is received. The production report shall cover a designated period of time. The report may give a percentage of the production based on renewable energy sources or consumption to be subtracted from the production or other criteria dependent on certificate schemes.

System shall support flexible solutions since requirements for handling of PHPP and Bio-mass are prone to change over time.

System shall support that only a percentage of the production for upgraded production devices can be entitled to certificates.

System shall support registration of a reduction percentage on the license that must be used to reduce the production entitled to certificates.

System shall support that each owner receive issued certificates according to its share of the production device for production device that has multiple registered owners (certificates are deposited into separated

account of each owner)).

2.6 Transfer, Export and Import of Certificates

Account Holder and COTEE operators shall have the possibility to Transfer, Export and Import certificates via the system user interface.

Provider will enable the opening of user account for COTEE, which will be enabled to transfer certificates from the privileged producer to COTEE, and from COTEE to the supplier or other user of the register to which COTEE can transfer certificates.

System shall support transfer functionality that include:

- Transfers on a regular basis, like for example daily, weekly (i.e. every Thursday), monthly (i.e. each 25th of the month, etc.)
- Transfers in the future date (for specific date)

- Immediate transfers (today, now)

Account Holder shall be able to transfer, import and export:

- Selected certificates
- Designated number of certificates
- Designated percentage of all available certificates

System shall support that future transfers could be changed or deleted by the Account holder until due date.

System shall support possibility to transfer only a part of a bulk certificate with the support that the remaining certificates shall be created as a new bulk certificate with the same information as the original (the total number of certificates on the two new bulk certificates must be identical to the original bulk certificate).

System shall support accounts holding certificates from certificate schemes not issued by the Issuing body to be available for transfers and cancellation.

System shall keep all transfer data in a transaction register for later use in the reports, statistics and audit.

System shall support that account history is easy available via the system user interface including all movements of the account and key information such as transaction date, transaction type, key certificate information, number of certificates, sender/receiver, etc.

System shall support internal transfers of certificates within two or more Account holder's/owner's own accounts by incurring the configurable costs to AH of such transfer.

System shall support approval workflow supporting possibility that one user can register the transfer but would need another user approval, according to the users security level.

System shall support that COTEE can block import of certain certificates, of certificates from certain country and certificates which are not for renewable energy sources. These options shall be configurable.

System shall support situation where all transfer user requirements are also valid for the certificates export.

System shall support input control and error handling of imported certificates according to the AIB rules.

System shall support handling production device information for imported certificates.

System shall support possibility for an Account Holder to define (in Account holder settings) if he wants to manually accept imported certificates to his account before they are deposited. Account Holder shall have option to deny Import of certain certificates.

System shall support easy selection of external IB registries, Account holders and accounts (new entries can be added only by the COTEE Administrator or Provider).

System shall support certificate schemes connected to valid export IB registries with option not to export certificates when a scheme is not accepted by the receiving IB.

System shall support logging of all outgoing and incoming transactions in a way so that transactions, status and error codes (according to AIB Rules) are easily accessible to the COTEE Administrator.

System shall support dissolving of the certificates in transit (i.e. uncompleted export where acknowledgment has not been received) by the COTEE Administrator using either reallocation to the original account or the export completion.

System shall support export and import of certificates to be done either via the AIB hub or as pier-to-pier bilateral communication supporting the same format and procedures

in both case but depending on type of certificate and receiving domain. Domains may have different requirements from the system, therefore domain configuration is maintained via domain parameters. Some of the domain parameters relevant to the user interface are block exporting certificates to other domains and block importing certificates from other domains.

System shall support blockage of import of certificates from certain Domain(s) which COTEE selects.

The system will support that maximum allowed number of bundles for an export transfer (to another domain) is not less than 5000, while any number of bundles over maximum allowed number of bundles will result in a failed transaction.

2.7 Cancellation, withdrawal and expiry of certificates

System shall support manual cancellation of certificates initiated by the Account holder or COTEE Operator.

System shall support manual cancellation to be done for selected certificates or a designated number of certificates.

System shall support cancellation statement with a unique reference number to be downloaded as a report in PDF format.

System shall support possibility for non-authorized users to view issued Cancellation Statements via the system user interface, being able to verify the origin of the statement, using the cancellation statements reference number as the search criteria.

System shall support availability of the cancelled certificates for reports, statistics and audit.

System shall support automatic expiry of certificates depending on the certificate scheme with support for definition of the expiry rules for each certificate scheme. Expiry rules shall be configurable.

System shall support availability of the expired certificates for reports, statistics and audit.

System shall support availability of the cancelled and expired certificates in the Account holders account statement, in the system user interface.

System shall support a function for the

COTEE Operator to manually withdraw certificates.
System shall support COTEE Administrator having the possibility to withdraw certificates from the Account holder's accounts to correct error situations (i.e. if certificates have been exported but reallocated in IB registry due to an error situation).
System shall support availability of the withdrawn certificates for reports, statistics and audit.

2.8 Log

System shall allow comprehensive log on parameter changes and actions in system. Log file shall be easy available for preview. In this way COTEE administrator shall have chance to see logged users and to filter desired tasks or actions or processes done in system like: registration of PD, metering upload, production declaration submit, generation of certificates, cancelation of certificates, expiry, withdrawal, transfer, etc.

2.9 Messaging

System shall allow comprehensive messaging function where every action in system shall be reported as message to users in system based on user access rights. COTEE Operator shall be able to see messages relating to every action in the system regardless of user initiating the action, while every other user shall be able to see messages only related to his account.

Accordingly, COTEE administrator shall have a chance to see messages in the system and filter desired one like: registration of PD, upload of metering data, submitted production declarations, generation of certificates, cancelation of certificates, expiry dates, withdrawal, transfer, etc.

2.10 Connecting to the AIB Hub Platform

GOs, in accordance with Energy Law, are issued by COTEE for electricity produced from renewable sources and high-efficiency cogeneration and also maintains GO register. In order to enable the exchange of issued guarantees within the AIB

("Association of Issuing Bodies"), COTEE started the process of joining AIB and became an associate member of AIB. COTEE's current status with AIB is "Applicant to Electricity Scheme Group". In order to continue maintaining GO register and to finalize the process of acquiring the status of a full member of AIB, it is necessary to purchase software, that is, a register that will connect and communicate with the AIB Hub. Full membership in AIB provides the possibility that guarantees of origin, which are issued for electricity from renewable energy sources and high-efficiency cogeneration in Montenegro, with a production period after the official acquisition of the status of a full member of AIB, at some point receive EECS-GO status and to be recognized by all AIB members. The connection of the system with the AIB Hub platform should be ensured in an adequate manner in accordance with the laws of Montenegro (Energy Law, Rules on the Register of Guarantees of Origin, Rules on the method of calculating, displaying and publishing the share of all types of energy sources in the produced, that is, supplied electricity and the method of controlling the calculation, Regulation on closer conditions and method of issuing, transferring, consuming and withdrawing the guarantee of the origin of electricity produced from renewable energy sources and high-efficiency cogeneration), EECS standard, AIB EECS Facts Sheets, CEN standards and emerging standards. System shall allow continuous transfer/import/export of certificates, except during system maintenance.

2.11 Reports and statistics

System shall support reports to be formatted for online view, printing and for export in various file formats, XLS and PDF.

System shall support that reports are available depending on user's profile rights and role permissions.

System shall support pre-defined and ad-hoc created reports.

System shall support report generator available for creation of ad-hoc reports. The generator must have access to all register data in the system such as accounts,

production devices and licenses, transactions (transfer, export and import), production and consumption data, and issued, expired and cancelled certificates. Level of access to the data must dependent on authorization level for the user using the report.
System shall support storing of report definitions as templates for repeated use. Historic data must be available for reports and statistics.

2.12 Security

It is necessary to provide a high level of security, multi-factor authentication and secure data storage in accordance with the European GDPR ("General Data Protection Regulation"). The system shall have a user structure where different rights can be distributed to different users and user groups (e.g. COTEE Administrator, Account holder administrator, etc...).
Provider shall bare sole responsibility for security of all data in the system. Data in the system shall not be compromised or jeopardized in any way.

2.13 Interface and user functionality

The user shall have a possibility to select languages for user interface, including online help and reports.
System user interface shall be available in Montenegrin (Serbian (Latin, Montenegro) and English.

2.13.1 Functionality for Account holders/Account operator

System shall enable the following fuctionalities:

- General functionality:
 - o Overview screen shall be able to provide key information from all of the Account holder's accounts such as account name, number of certificates, certificates close to expiry date, etc.
 - o Functionality to contact support / COTEE administrator by e-mail shall be available from all main functions
 - o Search for production device (all devices in Domain)
- Administration functionality:
 - o Maintain users (only administration user - administrator) within Account Holder
 - o Maintain administrative data and settings

- o Maintain user settings
- Account maintenance:
 - o Create new accounts
 - o View account status, account holder data and transactions of the account holder
 - o Transfer certificates between AH own accounts
 - o Transfer certificates between Account holders (within Domain or as export)
 - o Set up future transfers of certificates
 - o Set up fixed regular transfers of certificates (define number of certificates or a percentage of certificates in the account)
 - o Change or cancel future or regular transfers of certificates
 - o Manual cancellation of certificates
- Producers:
 - o Maintain administrative data for production device and license (e.g. issuing account)
 - o View production device data and respected license information
 - o Overview of issued certificates
 - o Add production reports

2.13.2 Functionality for COTEE Administrator

- The COTEE Administrator must have access to all Account Holder functionality on all accounts
- Search for
 - o Account Holders
 - o Account Holder Data
 - o Users
 - o Production Devices
 - o Certificate Numbers
- Administration of Account Holders and users
 - o Create new Account Holder
 - o Maintain administrative user for Account Holder
 - o Maintain user groups and access rights
- Account maintenance
 - o Suspend accounts
 - o Release suspended accounts
- Producers/Certificates
 - o Issue certificates manually
 - o Withdraw issued certificates
 - o Maintain production devices and licenses
 - o Maintain / change Account Operator
 - o View certificate transfer details
- System parameters and settings
 - o Maintain domains
 - o Maintain available accounts in other

					domains (available for export) - o Maintain certificate schemes and associations - o Maintain source and technology codes - o Earmark codes and flags - o Maintain administrative fees (if and when invoicing is added) - o Maintain other system parameters and settings 2.13.3 Functionality for Supervisory authority • Search for - o Account Holders - o Account Holder data - o Production devices - o Users - o Certificate Numbers • Supervise certificate Account Holders - o View master data (Account Holder, accounts, product devices and licenses) - o View certificate transfer details - o View all other registry details • Reports - o Ad-hoc reports access according to Reports and Statistics chapter. 2.14 Other Functionality • System shall support possibility for an on-line search in other registries to find party details in: - o Other Domain registries to find party information of Account holders for external transfers • Decimal point, number formatting and date time formats shall follow the settings of the client computer • All time periods shall be expressed using an inclusive start date/time and an inclusive end date/time. Date and time displayed in system user interface shall be in CET time. System shall be able to handle data and issued certificates from different time zones. • All date / time stamps of transactions shall show the date of the transaction in the user interface • The system shall have interfaces to other external systems for data exchange. - o Interface will handle import and export of certificates between this registry and other registries using the AIB hub and directly between this registry and another registry not using the AIB hub; this interface shall be done according to AIB standards.
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2.15 Data handling

System shall support that all data regarding certificates (issue, transfer, export, import and withdrawal data) being kept for later use in reports, statistics and audit for the minimum of 10 years.

System shall support production data, production declaration and production reports to be available in the database for the minimum of 10 years.

All data related to period older than 10 years shall be stored in GO registry archive.

In case that after the end of contract COTEE outsource or buy GO registry from another party or build its own GO registry Provider is obliged to deliver COTEE full backup, i.e. all data regarding AH, PD, metering data, production reports, certificates and transactions of certificates (issue, transfer, export, import and withdrawal data) stored in Provider's GO registry, including the activity log. Data shall be delivered in such way that can be uploaded in COTEE relational database management system (as sql query, plain text file – xml or csv format or some other way that provider shall propose and COTEE will accept).

Provider is obliged to do a full backup of all data regarding AH, PD, metering data, production reports, certificates and transactions of certificates (issue, transfer, export, import and withdrawal data), activity log and deliver at the COTEE's request within a period of no longer than one month. Backup data shall be delivered in such way that can be uploaded in COTEE relational database management system (as sql query, plain text file – xml or csv format or some other way that provider shall propose and COTEE will accept). Provider shall deliver appropriate documentation for adequate use of delivered backup data and COTEE will approve mentioned documentation.

2.16 Production and Testing environment

The Provider shall also provide GO Test Registry, that will be functionally identical to the Production GO Registry, for testing purposes and for the whole contract validity period.

During the term of the contract, Provider is

obliged to provide a development support service or upgrades of the system at the request of COTEE (in accordance with the current and future regulations of Montenegro, Montenegrin and international standards and all regulations and standards specified in section 1.1) and to provide support at the request of COTEE in setting up the system, changing the system, editing the database and other actions that COTEE is not able to perform by itself. COTEE submits the request in question to the Provider, while the Provider, after assessment of the request, shall submit it to COTEE for approval.

2.17 Guarantee Period

The guarantee period lasts for the duration of the Framework agreement and three annual contracts.

Within the guarantee period, Provider is obliged to fulfill all requests that are the subject of this technical specification promptly, conscientiously and in accordance with the rules of the profession without additional costs for COTEE. During the guarantee period, Provider is obliged to issue regular implementations for upgrades, updates and patches (to correct errors) for the system and deliver them to COTEE without additional fees for the entire duration of the contract. Within the guarantee period, Provider is obliged to promptly correct all errors and omissions in the system noted in the minutes by COTEE, which were not observed during the test period and handover of the system, and to note in the minutes the corrections made, which submits to COTEE for approval.

In this sense, there can be no additional costs for the customer (maintenance, on-demand engagement, system support, etc. - which do not fall outside the scope of the technical specification) and can not be subject of separate invoicing, that is, they will be an integral part of the agreed fixed monthly fee.

Within the guarantee period, it is understood that the system easily meets all new requirements and expansion, including connection to the AIB Hub. It is necessary that the technical requirements and their realization follow the current and future

national and international regulations and standards, as well as the dynamics of the movement of COTEE (as IB) towards full membership in AIB, membership in the EECS scheme and the possibility of transferring GOs across Europe and internationally, while not setting any obstacle in keeping the EnC-GO scheme and functioning within the Energy Community, if COTEE expresses the need for it, while respecting eventual regulatory and technical restrictions, rules and standards placed by the competent authorities. All requirements and obligations of Provider, which are the subject of this technical specification, can not be the subject of separate invoicing, that is, they will be an integral part of the contracted fixed monthly fee. During the term of the contract, Provider is obliged to submit to COTEE after all completed works/services a report on completed works/services, which must be approved by COTEE beforehand.

2.18 Security settings

2.18.1 Password management

Interface for the users to look and manage their account information (change their passwords), shall be provided. It is expected that the password has to meet minimum criteria like capital letters, lower-case letters, numbers and special characters.

2.18.2 Login management

Login shall be provided in that manner that each user shall be identified by the system with unique identification without doubt. Login must be provided with username and password.

In case if some of the users forget their password, there should be a mechanism for solving that problem. In order to prevent poor and weak passwords, password management system or some other mechanism will be implemented with custom rules (password length, frequency of change, password complexity, login attempts, time until the session is deactivated, no repeating password or some other rules).

2.18.3 Account Auditing and Logging

The Provider must provide functionality

where it is possible to trace account activity of every user. The activity log will provide an audit trail of user activity that allows specific action to be traced to a single user, location and time.

2.19 Provider support

During the contract period, the Provider is responsible for the support of the registry system.

The Provider shall provide On-Call Software Support Service on working days between 09:00 and 16:00.

Additionally, COTEE will report all failures and send support requests to the support portal provided by Provider. Provider is obliged to inform COTEE via e-mail that the request for intervention/support has been successfully completed. Provider will be provided with a list of the authorized representatives of COTEE who can report failure. The response to the failure report, the working hours and the time provided for resolving service requests are defined in the contract. The priority of failures is defined in four categories: emergency, high, medium and low priority. It is necessary to comply with the requested minimum requirements regarding the mentioned categories. The response to an emergency must be within one hour (beginning of problem solving and continuous work until the establishment of proper functioning of the system), high priority within two hours at the latest (start of problem solving and continuous work until the problem is eliminated), medium priority within four hours at the latest (beginning of problem solving and work only during working hours until the problem is solved) and low priority within eight hours at the latest (start of problem solving and work only during working hours until the problem is solved).

In case that Provider is late with the start of the elimination of the disturbance that exceeds 50% of the maximum time provided for that level of disturbance, COTEE reserves the right to reduce the payment for the service for that month by 5%, for each problem that occurred for which the beginning of the elimination of the disturbance was delayed. COTEE will invite Provider in writing to jointly ascertain the

cause and scope of the omissions through the minutes.

2.20 Required system availability

The provider is obliged to meet the service guarantee of minimum system availability of 99,5% on each calendar month of contract validity, excluding pre-planned downtime for purpose of regular system maintenance and upgrades.

The system should be available every day from 00:00h to 24:00h, while due to the specifics of the business and the future needs of internal and external users, minimum system availability of 99.5% on a monthly basis is required. Planned shutdowns must be announced in advance and must be planned at a specific time (periods outside of working hours).

Provider is obliged to notify COTEE in a timely manner, in writing, of the start of work on the system, the time and reasons for its unavailability (planned regular maintenance, upgrades, etc.) or to provide in a timely manner system information in a visible place within the system user interface such as the following: information about the latest system updates, planned updates and time frame during which system will be unavailable in order to implement new features, improvements and potential bug fixes.

If it is determined that the minimum availability of the system on a monthly level was less than the predicted 99,5%, COTEE reserves the right to reduce the monthly invoice. In case the minimum availability of the system on a monthly level does not reach the predicted 99,5%, COTEE reserves the right to reduce the service invoice for that month as follows:

- system availability from 98,00% to 99,49% 20%
- system availability from 90,00% to 97,99%..... 50%
- system availability less than 90,00%100%

COTEE shall inform Provider in writing in the case when minimum availability of the system on a monthly basis was less than expected and invite Provider to jointly ascertain cause and extent of the failures occurred through the minutes.

2.21 Additional requirements

The bidder must submit proof of meeting the requirements of professional-technical and personnel qualifications:

- evidence of an established information system security management system: ISO/IEC 27001 Information security management system

It is necessary that system easily meets all new requirements and expansions, as well as connecting to AIB Hub.

During the duration of the contract and the provision of services, key assigned personnel with specific knowledge, qualifications and professional experience in the field of work may be removed or replaced only at the request or with the prior consent of COTEE. Unauthorized removal or replacement of key personnel during the duration of the contract is an extraordinary reason for termination of the contract by COTEE.

3 Abbreviations and Annex

ANNEX 1 – Abbreviations

AIB Association of Issuing Bodies

CEN European committee for standardization

COTEE Montenegrin Electricity Market Operator

CSV Comma-separated values

EECS European Energy Certificate System

EIC ENTSO-E Identification Coding Scheme

ENTSO-E European Transmission System Operators

GSRN Global Service Relation Number

IB Issuing Body

ISO International Organization for Standardization

			IT Information Technology PD Production Device PDF Portable Document Format PHPP Pumped Hydro Power Plant AT Acceptance Test XML Extended Mark-up Language		
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