

## Public Utilities Commission of Sri Lanka

# Request for Proposals (RFP) – License Management System

### Introduction

Established by the Public Utilities Commission of Sri Lanka Act No. 35 of 2002 by the Parliament of Sri Lanka, the Public Utilities Commission of Sri Lanka (PUCSL) performs a vital role as a multi-sector supervisory body regulating certain physical infrastructure industries in the country. The PUCSL came into operation in 2003 and more information about PUCSL & what it does could be learnt from its website ([www.pucsl.gov.lk](http://www.pucsl.gov.lk)).

PUCSL being the technical, economic and safety regulator for the Electricity industry in Sri Lanka, the Licensing Division of it is entrusted with the task of issuing licenses and granting exemptions for the players of the electricity industry of the country. Both government and privately owned entities who are involved in generation, transmission and distribution of electricity in Sri Lanka are required to obtain a license from PUCSL as it is illegal to engage in such operations without having a valid license. Similarly, those who meet the eligibility criteria and therefore would be exempted from the requirement to have a license to operate can obtain an exemption from PUCSL (so that they can operate without a license). Those who wish to obtain a license or an exemption from PUCSL should first submit an application to PUCSL with all necessary information, supporting documents & proof of payment to PUCSL and after deliberation, if PUCSL decides in favour of the application, it would grant the license or exemption in terms of the regulations published in the gazette notification bearing the number 1617/34 and dated 2009-09-03.

The current manual process with respect to licensing / exempting is described below:

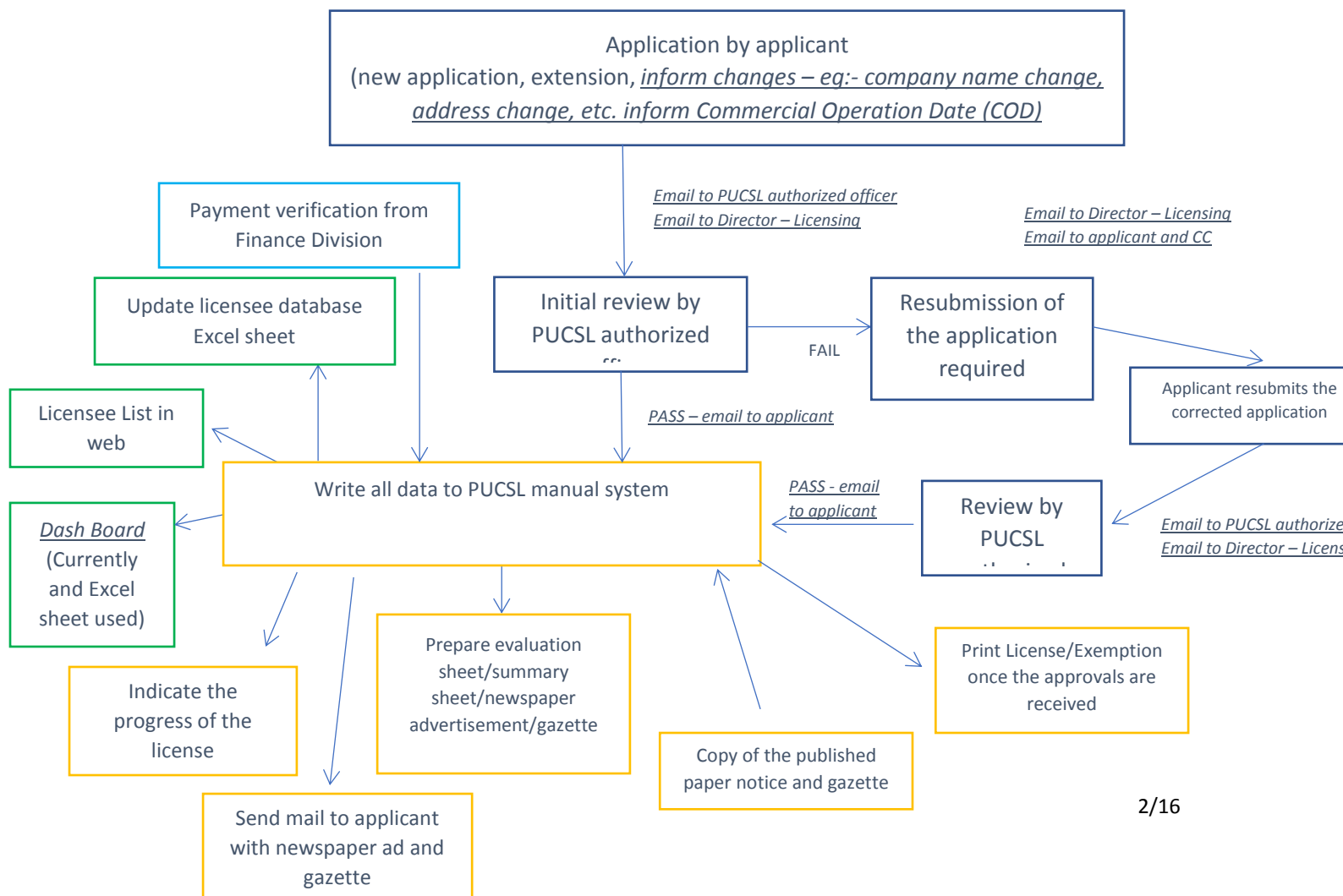
PUCSL has a set of applications and defined processes to apply for aforesaid each license / exemption and this whole licensing/exemption process is currently executed as a manual process. This licensing / exemption process can be categorized into few main stages as below

1. Submission of an application (signed hard copy) to PUCSL by an applicant along with necessary supporting documents and the payment (at this stage PUCSL issue an **application number**).
2. Evaluation of the application by a PUCSL authorized officer for any missing documents, information or errors. If such omissions or errors are found, the applicant is informed to provide missing information / missing documents or resubmit the complete application with corrections.
3. Preparation of the evaluation sheet by PUCSL authorized officer with respect to the final application (if the PUCSL is satisfied with the level of completion of the application and / or the attached supporting documents, it is possible that the application is processed even if certain information and /or documents are missing – with the hope that all necessary documents would be provided before granting the license / exemption. License / Exemption would not be granted if any field in the application is incomplete or supporting documents are missing. However if PUCSL authorized officer insists on providing any information or supporting documents then without such information or documents application would not be processed. In such situations PUCSL authorized officer may request the applicant to provide necessary information and documents.)
4. Obtain the approval of the Commission to publish a newspaper notice in all three languages which contains a set of information about the applicant and the purpose of obtaining a license/exemption

5. Publication of the newspaper notices and grant a period of 28 days for any public comments or objections.
6. Obtain the approval of the Commission (after considering public comments – all public comments received are filed.)
  - a. to grant license for applicant with the concurrence of the minister (in the case of a license)
  - b. to gazette the exemption (in the case of an exemption)
7. Issuance of the printed license document or exemption certificate (at this stage PUCSL issue **a license number/exemption number** which is totally differ from the **application number** – PUCSL maintains both **application number** and **license / exemption number** and can refer to / search for a license / exemption or the application by either number. )
8. Upgrade the Licensing Database (an excel sheet which contains important information about the all applicants and all licensees/exempted parties) with the information of the new applicant
9. Carryout work related to modifications of the License/Exemption in later stage (modify the license/exemption as per the changes happening in name, address, capacity, director board, etc.)

Please note that;

- Licensing Database is a set of key information related to applicants/licensees/exempted parties are being maintained as an excel sheet (of 450 rows x 50 columns) separately for the operational convenient.
- Rough sketch of the above explained licensing/exemption process and the PUCSL system is illustrated below (except what is mentioned in *italicized and underlined characters*)



PUCSL intends to automate the business processes pertaining to issuance of licenses and exemptions by implementing a Web based information system of which all stakeholders would become users. This system would be known as License Management System (LSM).

### **Functional Requirements**

The landing page (which is linked to PUCSL website) that a user (i.e. a company), who visits LMS would first encounter, would display the following options to the users

(a) If the user is to obtain a fresh license or exemption he must be guided along this path: A user will have to first indicate whether he is applying for a license or exemption. Based on the selection he will have to next choose the type of license or exemption that he intends to apply for. The types of licenses and types of exemptions are given in Annexure – 1. Based on these two selections (Firstly, whether a license or exemption and secondly, the type of license or the type of exemption as the case may be), the form that has to be filled would vary. Filling this form would be a lengthy process as it would have a certain number of steps and therefore a few tabs. Both (i) applying for a license / exemption and (ii) creating an account for managing this license / exemption would be realized by filling and submitting this multi-stage form. The first tab of this form would facilitate making the above two selections and also providing guidance with respect to making the correct selection. Then the basic information about the applicant will be recorded in tab 2. These fields that must be present in the second tab of this form are also given in the Annexure – 1. (The last column in the table called “Information to be taken at the Sign-Up stage”). The third tab will contain a set of common instructions (those common instruction is available in Annexure 2) with respect to applying for a license / exemption. The fourth tab will have a form (which has a considerable number of fields to be filled by the user. Except for the mandatory fields of this form, including uploading supporting documents, it must be possible for the user to provide explanation why certain information or document is not provided / would be delayed, whenever necessary. For this, a remark field for each field in the form must be available. And the fifth tab will have a form for creating an account (which can be used for signing-in later). At this stage, an **Application Number** will be issued to the applicant. Application number is also the user name of the account to be created. (Application number is granted only after the completion of the fourth tab. i.e. after submitting the application to PUCSL.) Format of the said Application Number can be found in **Application Number / User Name Format** column of Annexure 1. At this stage, the applicant has to submit his application to the system. Before he submits it, the system itself should show him the application he filled and ask him to confirm it (both information provided and documents attached). Once he confirmed it there should be a message to the applicant indicating that a PUCSL authorized officer will check the submitted application and the PUCSL authorized officer would confirm you the completeness of the application and the possibility of starting the processing of application by an email notification. Once that email notification is sent by the PUCSL authorized officer as it is a completed application, then the applicant has to download the completed application and submit the same to PUCSL with signature (signature page is in the Application Gazette dated 2009SEP03). If PUCSL authorized officer found any missing information or documents, then an email notification should go to applicant indicating certain information / documents are missing and requesting to complete or resubmit. Till the application is accepted by the PUCSL authorized officer as a completed one, user cannot print the application for the submitting a hardcopy with signature.

All these communications should be done via emails. The common instructions that must be displayed to all types of applicants (Tab 3) is given in Annexure 2. Annexures 3 – 8 carry the details of the 6 types of forms that must be displayed in Tab 4 based on the selections made in Tab 1.

(b) If a user wants to obtain an extension of an existing license/exemption then he has to provide the license/exemption number and the expiry date and thereafter the above procedure (a) can be followed. PUCSL authorized officer must be able to see the provided license number and the expiry date (and it should get recorded in the system).

(c) If a user wants request a modification with respect to an existing license or exemption then there will be a separate path to be followed where he needs to mention what needs to be changed and the evidence to support the changes requested (including letter officially requesting the change, signed by the directors). Here the user has to provide the existing license/exemption number to the system with his request.

(d) if a user wants to view the progress of his application, he already submitted then he has to provide his application number and password to see the progress. (So the landing page has a link for signing-in for those who already created an account)

Submitting an application and creating an account would take place at the same time and a user can later sign-in to check status or other information (such as data provided while applying, newspaper advertisement published by PUCSL with respect to the license / exemption, etc.) pertaining to an application submitted, provide missing information or supporting documents, modify any existing information, etc. (If modification of information or documents needs to be done after PUCSL authorized officer accepting an application as complete and ready to be processed, then the applicant needs to follow the proper path for requesting a modification with documentary evidence along with an official request signed by the directors. Before that a user can change information provided or documents attached by signing-in. However any such modifications made must be properly and prominently indicated to both PUCSL authorized officer and the applicant including email notifications. All history must be recorded and visible for applicant and PUCSL authorized officer to see who changed what, when, from where, etc. – including the documents uploaded and information provided at various stages. All activities must be logged)

There are 4 types of licenses and 2 types of exemptions (that a user can apply for) are mentioned below.

#### Licenses

1. Generations Licenses - over 25 MW generation capacity
2. Generations Licenses – 25 MW or less than 25 MW generation capacity
3. Transmission License
4. Distribution License

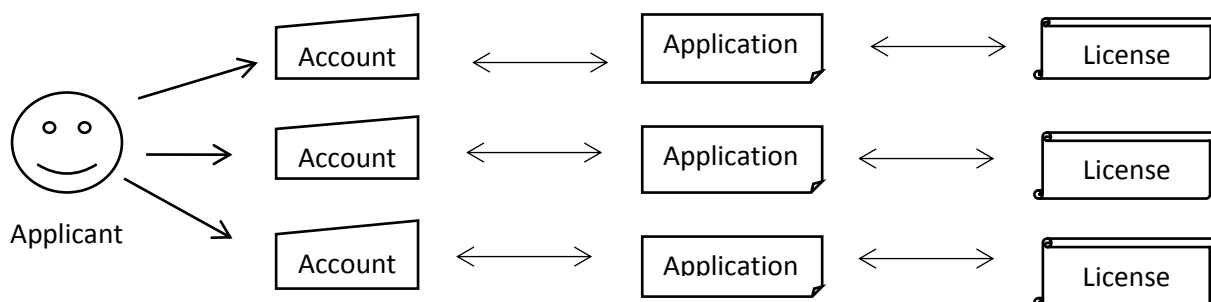
#### Exemptions

5. Exemptions - Generations
6. Exemptions - Distribution

There can be instances where only one license per application is made and there can be only one application per account. If any user (i.e. company) wishes to submit more than one application then the user will have to create more than one account. A user can create any number of accounts (using the same email address, same company registration number, etc.).

Traversing from the Tab 1 to Tab 5 in the form described above is strictly sequential and it must not be possible to skip a tab and proceed to a next tab. Also it must be required to complete all mandatory fields before proceeding to the next tab. (An admin user must be able to determine which fields are mandatory and which fields are optional.)

A signed-in user's dashboard will display the status of the application and also a link to access the applications already submitted (pending or finished processing) Appropriate colours would be used for dashboard designing. By clicking the status, a user can view the status visually, which would graphically show which steps have been completed and which steps to be completed. Dashboard would also the expiry date of a license / exemption (and also other relevant information such as date of commercial operations), if the license / exemption has been granted.



Since a user (i.e. a company) can have multiple accounts it must be possible for the PUCSL staff to find out applications / licenses / exemptions belonged to a given company name, company registration number, email addresses, etc.

Users have to sign-in before using the system (except when applying for a new license / exemption) and only the signed-in user are allowed to access the system (except the instance where a user is filling a new application while creating an account). Signing-up, signing-in, signing-out, forget password, email address verification, prohibiting weak passwords (including setting password validity periods, password expiry, character combinations, maintaining password history & avoiding repetitions, and other common password rules), encrypting/hashing passwords, etc. mechanisms pertaining to user authentication must be available. At the time of signing-up, a user will have to indicate an email address would be used as the user name and if a user forgets the password, a link that would get expired in a few hours would be sent to that email address. After creating the account, user will have to fill a form and provide his details before applying for licenses / exemptions. Annexure 1 has the details of this form. Certain fields of the form would be mandatory. An admin user (i.e. PUCSL) must be able to block / unblock user accounts, reset passwords, etc. It must be a mandatory requirement to change any PUCSL issued password at the time of signing-in (users should not be allowed to sign-in without changing the password before signing-in, if the password has been issued by PUCSL). PUCSL must be able to change the email address and transfer an account to a different applicant / licensee / organization / individual, if PUCSL receives request with supporting documentary evidence along with a signed request and PUCSL is satisfied with the validity of the request.

If a user is applying for a license or exemption he would select the required path and follow the relevant workflow as mentioned in Flow-Chart Boxes from 1 to 6 (along with the master flow chart).

(As far as the forms that would be used by applicants as well as PUCSL staff are concerned, fields in the form can be categorized as mandatory / optional and editable / fixed. The forms are workflows will have to be appropriately designed.)

The attached annexures show the work flow for applying for licenses / exemptions

#### Main Steps of the work-flow

1. Submit the application and create a user profile in the Licensee Management System for applicants who would apply for licenses and / or exemptions
2. apply license/exemption online through that system (accessible via PUCSL website)
3. evaluate the application submitted online for any deficiencies/shortcomings (i.e any missing information, documents, etc.) by PUCSL authorized officer
4. inform applicant via email about the deficiencies/shortcomings (or missing items) of the application (if relevant) and resubmit the corrected application. Email sent to the applicant should contain the correct link which would take the user to the proper place within the application (when the application has multiple pages) so that user can provide any missing information. If the user had not signed-in by then, he should first be prompted to sign-in first and after signing-in the user must be presented with the web page that he wanted to visit.
5. generate automatically the evaluation sheet/summary tables/newspaper advertisement/gazette notices which are required to submit along with the board paper (PUCSL would provide the templates in MS Word format and those MS Word files will have to be with data extracted from the database. Newspaper advertisements / Gazette notifications must be generated as both MS Word and PDF files.)
6. write all necessary information of applicants in to database of the License Management System and keep all the information/documents related to applicants and applications in the storage system and give facility to access, view, copy, print, etc. any document, in the aforesaid database (These documents include both the documents submitted by applicants, generated by the system and uploaded by PUCSL staff)
7. show progress of the licensing process online to applicant (applicant can log in to web and see the progress of the licensing process)
8. Send important information related to licensing process to applicant and access and view any relevant information (eg:- Copy of the newspaper advertisement, information provided by the applicant, any interactions with the PUCSL i.e. emails sent by the system, etc.)
9. Create soft version of the License and Exemption document (as both MS Word and PDF files) (Printed application containing the information provided at the time of applying without the uploaded documents to be signed and sent by post to PUCSL)
10. display important information about the licensees (summary) in the dashboard (Licenses that are nearing expiration, pending applications, etc.)
11. Real time update the list of licensees/exempted parties as a web page which would be linked to PUCSL website (And therefore it will have to follow the appearance of PUCSL website) so that anybody who wants to check the list of licenses and the exemptions can access that web page(s) which is open to public.
12. A signed-in user can change information provided before such as name, address, capacity, commercial operation date, etc. and the user should provide documentary evidence to prove the new name, new address, etc. and if PUCSL is satisfied then PUCSL will authorize then change. Until then the change of information will not be valid. However even if information has been changed, previous information must be shown (in a suitable manner, along with the period during which such information has been valid.) Users can update information while an application process and also after granting the license. However there can be periods of time during which information cannot be changed.

**Important:** Submission of a signed application (hard copy) to PUCSL in order to obtain a license/exemption is mandatory under the applicable legal provisions for issuance of a license/exemption. Therefore, still it's required to submit a hard copy of the application to PUCSL even though the applicant applies for the license/exemption through the online system. Hence, once the applicant filled the application and once the PUCSL authorized officer confirmed it as correct, then system shall provide to download a copy of that confirmed application to the applicant. Then

applicant has to print it, sign it and send it to PUCSL. The system should automatically generate the printed version of the respective application based on the information provided by the user. This said printed version should not be contained any of annexures. As annexure are already been uploaded to the system, said printed version itself should give only references for those uploaded annexures. The application generated by the system (to be printed) containing all information provided by the applicant (along with the signature page) must clearly mention the files uploaded to the system by the applicant so that PUCSL authorized officer can easily identify them (in an unambiguous manner).

**Operational Conditions of the system and other notes to be considered as per the Business requirement listed above**

- 1. create a user profile in PUCSL website for applicants/licensees**
- 2. apply license/exemption online through PUCSL website (both 1 & 2 in the same step)**
- 3. evaluate the online submitted application for any shortages (by PUCSL authorized officer)**
- 4. inform applicant online about the shortages of the application (if available) and resubmit the corrected application by the applicant.**

a) It would be possible for each user, who signs-up, to have his profile created in LMS. Refer Master Flow Chart and Annexure 1 for more information. An application number shall be assigned to the application at the time of submitting an application (as a reference number) and this number can be used to refer to the application. System should know which user submitted which application and also which license is granted to which application. (Similarly, apart from the application number, there would be a license number or an exemption number, if an application is successful and the system should maintain records with respect to which application number corresponds to which license or exemption number. It must be possible to refer to a license or an exemption by means of mentioning the relevant application number also.)

It must be possible to find out the details of user who has submitted an application or received a license (or an exemption) and see the applications submitted by and license (or exemption) received by a given user.

The user name is always the Application Number (given at the time of signing-up) and the user select a password as per the password rules, which would ensure that the password selected by the user is sufficiently strong. (Common password rules must be used). An email would be sent to email addresses used as user name (and would also be the email address used for contacting) mentioning the link to access the system, user name, date of creation of the account, etc. along with other information such as how to change the password, when the password would get expired, what to do if the password is forgotten, how to check status, etc. (i.e. links to help manuals, which could be accessed via dashboards after signing-in).

- b) As explained in above, there are four license types & two exemption types (altogether six) and have separate applications for each license or exemption. (And also, the work flow pertaining to each type of application is different from one another) But PUCSL has issued all six applications together as one gazette notification dated 2003 Sept. 9. For the convenient of the project of developing LMS, the application has been split into separate six applications. Refer Annexures 3 to 8
- c) LMS will have separate application forms (and also work flows). Need to build up applications separately in the LMS and content of those applications are as per the Annexures 3 to 8. Refer

**Master Flow Chart also** (Extra fields that must appear in the forms, in addition to what is mentioned in Annexures 3 – 8 are given in Annexures 9 – 19.)

- d) For new applicants, they can select which type of application they need to submit and respective application shall be loaded to fill it up. Initially Instruction page (Annexure 2) shall be displayed (instruction page is common for all six applications) and once it is clicked OK, then only the relevant application is loaded for the applicant to fill (for some questions, applicant has to upload scanned documents as well).
- e) As far as identifying the fields that should appear in each form is concerned, Annexures from 3 to 8 must be considered in conjunction with Annexures from 9 to 19.
- f) Once all parts of the application are filled by the applicant, it can be submitted to the system. But before submitting, the preview of the completed application needs to be shown to the applicant and request him to confirm it to ensure that application contains correct information. (As far as the fields which are meant for uploading scanned documents are concerned the preview should indicate whether a document has been attached or not) Certain fields of an application would be mandatory whereas some other would be optional. Application will use data validation. Captcha must be used as far as application submission is concerned. Once an application is submitted to the relevant officer of PUCSL (such as Director Licensing and other relevant officers) must receive email notifications. Meantime, a message shall be displayed to the applicant indicating that PUCSL has received the submitted application and if necessary PUCSL will contact the applicant (eg:- if the application is incomplete). If an application is accepted (for processing – nb:- not a favourable decision has been made but processing can commence), an acceptance notification will be sent to the applicant's email and then the applicant must sign-in to the system again and need to print the accepted application (could be able to download from LMS) and clearly identifiable references to the documents uploaded so that PUCSL authorized officer can verify whether the supporting documents uploaded are acceptable in minimum time send it to PUCSL with the signature and the proof of necessary payment as a hard copy (relevant address should be displayed to the applicant).
- g) If an application is deemed to be acceptable for processing by PUCSL, then PUCSL authorized officer would review the accepted application along with attachments through the LMS and LMS itself should provide facility to comment for each answer (in front of each answer) of the filled application if there is any issue. Once all comments are given related to the entire application (where necessary) by the PUCSL authorized officer, the PUCSL authorized officer shall suspend the application with all given comments. Then an email notification shall go to the applicant (and Director Licensing and other necessary parties) indicating that **PUCSL has suspended the application due to some errors, omissions, etc. and it is required that the application be resubmitted after rectifications, if it is to be processed. Comments inserted by PUCSL authorized officer must not be included in the notification email sent to the applicant.** Email will only indicate that the applicant has to take action and when the applicant signs-in to the LMS he can see the comments made by PUCSL authorized officer.
- h) Then the applicant has to sign-in and retrieve his previous application. Then the system shall show the comments given by PUSCL officer in front of each answers provided by the applicant. And then the system shall allow applicant to do the necessary corrections as far as the incorrect answers (including document uploading) and re-submit the corrected application. This system shall be developed in a way that, applicant can sign-in and edit the answers submitted with application initially and resubmit the application with corrections. A signed-in user can view the applications submitted (including the answers provided with the application) and edit and resubmit an application if PUCSL has requested. The applicant can see the comments made by PUCSL authorized officer. Both applicant and PUCSL authorized officer must be able to see the all previous information provided, all documents uploaded previously with date and time, etc.



- i) With the subsequent submission by the applicant (there can be any number of subsequent submissions because PUCSL authorized officer can request resubmission of the application any number of times), again PUCSL authorized officer has to verify whether the application is acceptable for processing and if so, PUCSL authorized officer can accept the application (for further processing). If an application has been submitted in such a manner a PUCSL authorized officer can undertake the processing of it and can inform the applicant that the processing of the application has begun. So that the status shown in the dashboard with respect to the application would change and an email notification would be sent to all relevant parties.
- j) PUCSL authorized officer and the applicant must be able to see the complete history of submitted answers and comments provided by PUCSL authorized officer with date and time with respect to each field in the form and this includes the document uploads also. (i.e. all previously uploaded documents must also be there for checking. User interfaces must be designed in an appropriate manner. i.e in the most logical, most efficient and most user friendly manner. )
- k) But if the application is correct without any issues at the very first stage, then PUCSL authorized officer can directly accept it (for processing).
- l) At the end of any application, space must be available for the applicant to make any remark or upload any additional documents if the applicant wants to and if the applicant has a cover page, then he can upload the scanned copy of that cover letter.
- m) PUCSL must be able to modify the forms (i.e. add, remove or change the fields in the application) because the applications would be revised and updated from time to time as per the changing requirements of PUCL. (An admin user must be able to add remove modify fields in the form.)
- n) Once the License/Exemption is granted, facility shall be given to Sign-In using both aforesaid user name (i.e. application number) as well as the License / Exemption Number with the same password.
- o) Authority shall be given to PUCSL authorized officer to attach/save additional information received by post or email with respect to any of applicant in to LMS throughout the process.
- p) It must be possible for the PUCSL authorized officer to save all board papers, letters, ministry's concurrence and extra documents related to any particular application in the LMS.
- q) Any document generated by LMS such as newspaper advertisement, etc. board paper, must also be saved in LMS.
- r) Further, if applicant needs a "Application processing letter" to CEB/LECO, there should be a place applicant to insert a tick mark. If the tick mark is enabled by the applicant, the system should generate the said letter to PUCSL officer for the signature of PUCSL CEO. Once the letter is ready, PUCSL authorized officer shall upload to that to the system and email notification should go to applicant.

- 5. generate automatically the evaluation sheet/summary tables/newspaper advertisement/gazette notices which are required to submit along with the board paper**
- 6. write key information of applicants in to license database and keep all the information/documents related to applicants as a database and give facility to print any document, application in the aforesaid database**

#### **Operational Conditions of the system and other notes to be considered**

- a) Once the application is accepted (for processing), the system shall provide an evaluation sheet, summary table and newspaper advertisement with respect to each category of application. Currently PUCSL uses only templates with respect to two applications and those

are for applications indicated in Annexure 4 and Annexure 8 (Annexure 20 is relevant for Annexure 4 and Annexure 21 is relevant for Annexure 8). Provision shall be kept to upload other templates of other applications later. Also, facility shall be given to amend these templates as required by the PUCSL. Based on type of the license / exemption application, aforesaid evaluation sheet, summary table and newspaper advertisement (which are to be generated automatically by the system) would differ from one another. Templates of each of them will be provided by the PUCSL and those templates must be used in LMS for generating them automatically. Refer the table below for further information. When the LMS generates those word files / pdf files for Newspaper Advertisement, etc. based on the given templates it must be possible for PUCSL authorized officer to select which applications are included in a given advertisement as several applications are included in a single advertisement. Therefore the pipeline of applications received must be shown to the PUCSL authorized officer and it should show which applications have been included in the last one or two newspaper advertisements, which applications are ok and can be included in the next newspaper advertisement and which applications are incomplete. Out of them PUCSL authorized officer would select which applications would be included in the next newspaper ad. Additional documents will have to be generated based on the templates given. LMS should retrieve information from the database and insert in the relevant templates.

- b) Further, it must be possible to generate documents (such as newspaper advertisements, etc.) in such a manner they contain information pertaining to more than one license and / or exemption (or applications relevant for them) while inserting common or general information only once so that generating one document is enough (instead of many) to accommodate several licenses, exemptions, applications, etc. Eg:- Generally PUCSL publish only one newspaper advertisement per month. Therefore, information of the all applicants who submitted application during that month will be considered for that single newspaper advertisement other than publishing a newspaper advertisement per each applicant. Therefore, content of the aforesaid newspaper advertisement shall be generated by the system automatically considering required information of all the applications belong to that particular month using the appropriate template. (PUCSL authorized officer must be able to manually select from the system which licenses / exemption are included in which newspaper advertisement, commission paper, etc. and the newspaper advertisements, commission papers must be able to be automatically generated based on the templates.)
- c) TBDL- to be developed later – Each of this template is similar to the other corresponding template. Therefore, this system shall allow PUCSL to upload those templates in later stage.
- d) All information and documents submitted along with the application shall be stored in the LMS But there are set of key information that are frequently used by PUCSL. Those are listed in annexure 26 and must be stored in for every applicant or every person who signs-up. And that set of key information shall be viewed and sorted (as per the various preferences) through the system in a very user-friendly manner. Further any information and document related to applicant shall be printed through the system itself.

<b>License Category</b>	<b>Evaluation Sheet</b>	<b>Newspaper AD</b>	<b>Summary Table</b>	<b>License Document</b>
Generations Licenses - more than 25 MW generation capacity	TBDL	TBDL	TBDL	TBDL
Generations Licenses – 25 MW or less than 25 MW generation capacity	Annexure 20	Annexure 22	Annexure 24	Annexure 27
Transmission License	TBDL	TBDL	TBDL	TBDL

Distribution License	TBDL	TBDL	TBDL	TBDL
Exemptions – Generations	TBDL	TBDL	TBDL	TBDL
Exemptions – Distribution	Annexure 21	Annexure 23	Annexure 25	TBDL
	TBDL	TBDL	TBDL	TBDL

- 7. show progress of the licensing process online to applicant (applicant can log in to web and see the progress of the licensing process)**
- 8. Send important information related to licensing process to applicant (ex. Copy of the newspaper advertisement)**
- 9. Create soft version of the License and Exemption document**
- 10. display some important information about the licensees in a dashboard**
- 11. Timely update the list of licensees/exempted parties in the PUCSL website which is open for the public**
- 12. Make request to PUCSL by applicants/licensees for changes related to their application/license (name change, address change, capacity modification, update COD, etc) during the licensing process and after the license is granted**

#### **Operational Conditions of the system and other notes to be considered**

- a) Facility shall be given to PUCSL authorized officer to update the progress of the processing of the application of each applicant. That progress can be viewed by the applicant by signing-in to LMS. (And the progress would appear in the dashboards of other relevant users such as PUCSL authorized officers). Annexure 28 shows the general process of the issuing a licenses. Same procedure will be followed to issue exemptions with slight changes.
- b) As indicated above, relevant additional information and necessary documents related to any applicant shall be added to this system by the PUCSL authorized officer. Eg:- Newspaper advertisement, Letters from Ministry, License/Exemption granted, etc.
- c) Once that newspaper advertisement is uploaded to the system by the PUCSL authorized officer, that shall be viewable by the applicant once he signs-in in to the system and email notification shall be sent to applicant (signed-in person and two directors) and any other stakeholder.
- d) It is needed to auto generate the License and Exemption documents with the applicant data, once all the procedures of the licensing process are completed. It could be downloaded by PUCSL authorized officer to get the signatures of the relevant officers of PUCSL (after taking a printout of the licenses document generated by LMS). And a scanned copy of the original signed License / Exemption shall be uploaded back to the LMS. Then an email notification shall be sent to applicant (and other relevant stake holders) and that document is downloadable by the applicant after signing-in. Template of Generations Licenses – 25 MW or less than 25 MW generation capacity is available as annexure 27.
- e) With respect to above said matter, for Licensees, they have only one document called License. But for exempted parties, they have two documents called Gazette and Exemption Certificate.
- f) And this system shall provide a dashboard for each user who can sign-in and dashboard should be designed and built in such a manner that it has all relevant information appropriately placed. PUCSL authorized officer shall be able to define what information / parameters are to be displayed in that dashboards of the other users of LMS such as applicants
- g) Numerical information must be displayed in tabular and graphical formats where appropriate.

- h) PUCSL has uploaded a list of Licensees and Exempted parties to the website. Currently, PUCSL authorized officer update it manually once a month. But with this new system, that list shall be updated automatically by the system.
- i) While processing the application or after the granting the license / exemption, changes might occur with respect to the information provided by the applicant (such as address, contact details, board of directors of the company, company name, capacity of the plant, commissioning dates, etc.) and it must be possible for the applicant to sign-in and inform PUCSL through LMS regarding the changes that have occurred. It must be possible for the applicant to uploading supporting documents to prove the changes (such as the company registration documents, if the name of the company has been changed) PUCSL authorized officer can view it those and accept or deny and it must be possible for PUCSL authorized officers to request any documents or extra information via the LMS with respect to the changes that the applicant has intimated to PUCSL. If PUCSL decides to accept any changes with respect to the information originally provided such information must be updated in the LMS. However all information provided by all users (i.e applicants, PUCSL staff, etc.) must be retained with the system for audit purposes. LMS should also retain all past records and if it is necessary to annul the changes and revert to the previous values it must be possible.

#### **Other Factors to be considered**

1. Generally, a license is issued for 20 years whereas an exemption is issued for 5 years. This system shall keep records of issuing date and expiry date and inform PUCSL authorized officers (and other relevant parties) with respect to the expiration. Dashboards (of all relevant stakeholders) should indicate the licenses and exemptions which are about to be expired and email notifications must also be sent in advance so that the applicants can submit a new application for a new license or a new exemption.
2. The license becomes operative with the Commercial Operation Date (COD). At the stage of issuing the license, this COD is not available. Therefore, the system shall send timely emails to applicant inquiring the COD and update the database accordingly.
3. Facility should be provided to applicant save the application at the middle of the filling process and retrieve the same in a later time to complete (i.e. the applicant must be able to fill the application in stages and can resume filling the rest of the application from where it was stopped).
4. Contact details of PUCSL authorized officer must be available in the dashboard and / or application, if an applicant wants to contact an officer to obtain advice.
5. Make mandatory to fill all (or some of) the parts of the application.
6. As far as this specification is concerned, LMS will not have an online payment facility. Therefore applicants have to send the proof of the payment to PUCSL. Once that bank receipt is received, PUCSL authorized officer is expected to upload the scanned copy of it with respect to each application.
7. System shall verify all the given email addresses (domain name, MX record, email address syntax).
8. Need to upload the previous license/exemption and the all the details to the LMS (an MS Excel sheet consisting of 450 x 50 cells) The Excel sheet is consisting of around 450 rows pertaining to previously issued licenses / exemptions and each row is consisting of around 50 columns. The parameters pertaining to those 50 columns can be seen in Annexure 26. And the same database should be continuous with the new licensees as

well. And that database should be displayed to PUCSL authorized officer as similar as the current excel sheet which is being used.

9. All email communication shall be copied to all relevant stakeholders with respect to each application, license, exemption, etc.
10. Provision shall be given to PUCSL authorized officer to edit the COD of licensees along with the proof documents.

Attached templates show the type of documents (such as evaluation sheets, newspaper advertisements, annexures to board papers, etc.) that the system is expected to generate by extracting data from database. It is required to generate documents in both MS Word and PDF formats.

The selected bidder is expected to carry out an exhaustive and accurate requirement gathering and prepare a requirement specification before starting the implementation

### **Non functional requirements**

Paths of the websites should not be hard coded and no frame-work that requires to hard code the paths should not be used. It is essential that PUCSL must be able to change the IP address, domain name, etc. of the server where the system is hosted without having to modify the system (or deploy the system on a different platform with a different IP address, domain name, etc. without having to modify any configuration, code, etc. This is important for automating the restoration and testing backup.). As the system to be hosted in the in-house data centre of PUCSL, it is important that outside user (such as applicants) can access the system using a public IP address and the internal users (such as PUCSL staff) can access the system using a private IP address. Therefore it must be possible to access the same application using multiple paths (for defining different security levels) and the access path must not be hard coded.

PUCSL has virtualized its servers using ESXi and CentOS Operating system and Apache Web server would be used for hosting the system. MySQL would be the database. The server has both PHP and Node.js. The Web based information system must be developed using Linux Apache MySQL PHP (LAMP) Technologies. The OS used is CentOS 7. The selected bidder must be ready to work with the existing MySQL database Server of PUCSL (which would be either MySQL 5.7 or MySQL 8). The selected bidder can use either PHP or Node.js for development.

Full strength of the latest front end technologies such as HTML5, CSS3, JavaScript libraries must be used for ensuring that the user interfaces have been implemented in the most user friendly manner and the users, who are familiar with the web based systems that make use of latest front end technologies, should not feel a difference when using the Licensee Management System.

It is essential that all user interfaces, forms, dashboards workflows, etc. are designed and implemented in the most rational manner. It is imperative that the most logical, efficient and user friendly interfaces, forms, dashboard, workflows, etc. (realizable with the currently available technology) are achieved by the developer and it should not be possible for others to propose more logical, more efficient, more user friendly interfaces, workflows, dashboards, etc. Improving the efficiency, user-friendliness, etc. of forms, dashboards, interfaces, work-flows, etc. is always a responsibility of the selected supplier. All user interfaces, forms, dashboards workflows, etc. must be optimized for the requirements of PUCSL and the users must be able to complete their tasks in the minimum possible time and in the minimum possible number of steps. The

Dashboards, forms, interfaces, etc. must be designed and implemented in a professional manner and their appearance must suit an official environment.

All data must be recoded in MySQL and any report required must be able to be generated. It may be required to generate report involving the 50 odd parameters mentioned in Annexure 26 and it must be possible to get any report by writing a simple query. There must be a graphical method to construct the query that can be run to get the report. Output of some of the queries can be a PDF file. Eg:- The set of Central Environment Authority documents submitted by mini-hydro plants between 2005 and 2010.

Latest practices pertaining to development of Web based information systems must be used.

Web based information system must be efficient and no unnecessary delays must be added to user experience by generating unnecessary http requests and downloading unnecessary files, which are not needed to generate the content that is displayed to the end user. (Some of the users who access this system may be accessing it from remote areas of the country, who might experience bandwidth constraints.)

Filling forms, proceeding along workflows, etc. must be free of unnecessary steps, unnecessary mouse-clicks, etc. that can add only delays, inefficiencies and inconveniences.

All content that is sent to the users' browsers must reside within the PUCSL Web server.

If the selected bidder is using any third-party frameworks, libraries, etc. their limitations should not prevent the developer company from fulfilling requirements of PUCSL or achieving the best possible solutions.

The selected bidder must ensure that the system (including but not limited to user interfaces, dashboards, forms, workflows, etc.) can only be used for the intended purpose and user cannot use the system in unintended manners.)

Captcha must be used in a user friendly manner. Captcha should not be displayed to users every time a user loads a form into his or her client device. A user must be prompted to prove that he or she is a human, only if suspicious behaviour is detected. If the system experiences an unusual increase in traffic, it must be possible to display captcha in the forms and challenge users to prove that they are humans and not robots. Tightening of security should not badly affect the user experience.

LMS (including the database) must be implemented in a secure manner.

There must be two different sets of PHP (or Node.js) files – one to be used by the external users and another to be used by the internal PUCSL staff and should reside in two different directories. If it is required to prevent the outside users accessing the directory meant for the internal users, it must be possible to do so.

Email notifications must be sent to all relevant stakeholders, with respect to all activities.

All necessary activities must be logged so as to facilitate investigating who did what when from where. If any piece of information is modified by a user, all previous data must be retained in the system. This includes all email messages sent and it must be possible to verify what messages were sent when and to whom.

It is the responsibility of the selected bidder to test the final system, to be delivered, fully and correct all bugs before delivering and the selected bidder is required to have sufficient QA staff and QA tools in order to deliver a defect-free system.

The system would be deployed in the in-house data centre of PUCSL where a virtual server (on ESXi) would be allocated for running the system.

Only the signed-in users can access the system.

The system is not required to be able to be used with mobile devices.

Testing the software and assuring the quality of it for going live and using it in a production environment is the responsibility of the selected developer. Selected bidder should have adequate QA staff and QA tools for automated testing, etc. to ensure quality and as PUCSL has neither QA staff nor QA tools, PUCSL should not be expected to do any QA. The delivered product should pass the software verification and software validation tests and the selected developer must be able to confirm that the delivered product can be used for the operations of PUCSL in a productive manner.

All manuals (such as installation manual, administration manual, user manuals for external applicants and internal PUCSL staff, etc.) must be separately provided.

Training must be provided to PUCSL staff. Updated user manuals must be also be provided for each user role. If the system is modified the user manuals (including the installation manual, if necessary) must also be updated and provided to PUCSL.

The delivered product must be of production grade. It should not be a proof of concept.

All source codes, including installation files, configuration files, etc. must be submitted to PUCSL.

The entire project must be fully completed within eight (8) months from the date of Purchase Order (PO). The selected bidder is advised to plan to finish the entire project before the end of the eight month period so that any project slippage due to unforeseen issues can be accommodated and still the entire project can be fully completed within eight (8) months from the date of PO. The selected bidder must ensure that adequate resources are available for the project at correct time and the issues that can result in delays are identified and addressed in advance. The tasks that can be executed in parallel must be carried out simultaneously to ensure that the selected bidder completes the project in the minimum possible time. The project managers of the selected bidder must ensure that the delivered product meets the necessary quality requirements, meets all deadlines and the entire project is fully completed within eight (8) months from the date of PO.

Warranty must be provided for a period of four (4) months from the date of going live. All errors, bugs, shortcomings, etc. within the scope of the project and affect the quality of the delivered product reported within the first four (4) months from the date of going live must be fixed by the vendor free of charge.

The selected bidder should agree to enter into a Service Level Agreement (SLA) for a period of three years renewable at the beginning of each year so that the bidder can provide necessary support for PUCSL staff and also carry out minor modifications to maintain the application. The price quoted for SLA must include 50 man hours and the cost of any additional work carried out would be calculated at the same rate. The period of SLA would begin after the end of the 4 month warranty period.

#### **Suitability of the software development company**

The selected bidder must fulfil the following criteria:

- The software development company must be in active business operations for a minimum period of 5 years in the field of implementing web based information systems (using LAMP stack) with an annual turnover not less than Rs. 25 Million.
- The software development company must be familiar with developing complex workflows in the most user friendly manner, using the best available technology.

- The software development company must have developed at least three web based information systems with a substantially large scope during the last two years for reputed clients whose annual turnover exceeds Rs. 50 million.
- The software systems must be successfully used by multiple users in a frequent manner and generating heavy traffic and creating a considerable workload on the application. As far as those three software systems are concerned, the user interfaces, dashboards, workflows, forms, etc. must have been implemented in the best possible manner (without any unnecessary mouse clicks, inefficiencies, users having to waste their time due to limitations in the product, etc.) and it must be possible for the client to obtain any necessary reports from the system.
- If necessary PUCSL will want to examine the software systems delivered to other clients as part of the proposal evaluation and the bidder must be prepared to allow PUCSL to check the systems that have been delivered to other clients. Clients must be using the delivered systems in production environment.
- The bidders must have employed qualified and experienced staff who can gather requirements of the client and deliver the correct system that can pass both verification and validation tests.