

**Functional Requirements Documentation for the development of a web  
portal for the implementation of the Consumer Grievance Redressal  
Forum (CGRF) Regulations 2023  
in Kerala State Electricity Board Limited (KSEBL).**

**Kerala State Electricity Board Limited**

**Office of the Chief Engineer (IT,CR & CAPs)**  
**Vydyuthi Bhavanam, Pattom, Thiruvananthapuram**

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## **Overview:**

Kerala State Electricity Board Limited (KSEBL) is the primary entity responsible for generating, transmitting, and distributing electricity in the state of Kerala, India. Established in 1957 under the Electricity (Supply) Act, 1948, KSEBL has played a vital role in electrifying the state and supporting its economic growth. In 2013, it was restructured into a public sector company under the Companies Act, 1956.

Key Divisions:

### **1. Generation:**

KSEBL operates a range of power generation facilities, including hydro-power plants, thermal power plants, and renewable energy sources like solar and wind power.

### **2. Transmission:**

The transmission network of KSEBL spans the entire state, ensuring the delivery of electricity from generation plants to distribution substations. The transmission system operates at various voltage levels and plays a crucial role in maintaining grid stability and efficiency.

### **3. Distribution:**

KSEBL's distribution wing serves millions of domestic, commercial, industrial, and agricultural consumers across Kerala. It ensures the reliable delivery of electricity to end-users through an extensive network of substations, transformers, and distribution lines.

E-Governance and Technological Initiatives:

KSEBL has undertaken several e-governance projects to enhance operational efficiency and customer services.

## **Objective:**

The objective of this Functional Requirement Specification document is to define the functional and technical requirements for the development of a web portal to facilitate the effective implementation of the Consumer Grievance Redressal Forum (CGRF) Regulations 2023 in Kerala State Electricity Board Limited (KSEBL). The portal aims to provide a user-friendly, secure, and efficient platform for consumers to register, track, and resolve

grievances in compliance with the regulatory framework. Additionally, the system will enhance transparency, ensure timely redressal of complaints, and streamline communication between consumers, the CGRF, and KSEBL.

### **Web portal Requirements:**

1. Consumers/complainants/aggrieved public shall be provided with an online web portal through which they can register all complaints/grievances etc
2. Login facility shall be given with minimum requirements. The login options shall be the following
  - a. Consumer number + password
  - b. Consumer number + phone otp
  - c. Phone number + phone otp
  - d. Email id + password
  - e. Email id + email otp
  - f. Email id + phone otp
3. Facility for sms/email messages for successful registration of complaints. Complaint details include the following
  - a. Name of the complainant
  - b. address
4. Complaint/grievance number generation
5. Tracking facility for the Complaint/grievance
6. Quick tracking with Complaint/grievance numbers
7. View of status from consumer login in addition to registration of Complaint/grievance
8. Facility for sms/email messages for all intimations.

## **Software requirements**

1. Login facility for all levels of IGRC, Section AE & SS.
2. Complaint/grievance registering facility at section offices, central call centre and at all IGRC level offices.
3. Viewing facility of all complaints pertaining to that office.
4. Complaint profile with full history.
5. List of all complaints with status.
6. Dashboard facility.
7. Auto escalation of complaints after SOP period to IGRC
8. Auto Conversion facility of all complaints to grievance
9. Generate Complaint/grievance numbers
10. Facility for Uploading documents in pdf, word, excel etc
11. Facility for sms/email messages for all intimations to the Consumers/complainants/aggrieved public.
12. Customised detailed/summary Reports generations facility at all IGRC level offices.

## **Additional information**

1. Who can register complaints
  - a. Consumers includes anyone who uses electricity in a premises
  - b. Applicants
  - c. Consumer groups
  - d. State/central government
  - e. Legal heirs
2. Complaint shall contain the
  - a. name,
  - b. address,
  - c. consumer number
  - d. a brief description of the complaint.
  - e. Phone number
  - f. Type of complaint- dropdown menu
  - g. Email address
3. Tracing facility for the complaints

- a. Consumer related complaint ----- Consumer Number
  - b. Consumer group ----- Phone number
  - c. Street light or other complaints ----- Phone number
4. Information to be provided after complaint registration
    - a. Provide complaint number
    - b. Intimate through Sms/email
  5. Intimation to consumers
    - a. If phone number or email is available
    - b. Intimate through SMS or email  
Else
    - c. Complainant need to login and know the status
  6. Facility for Printing out of the complaint registered
  7. Addition information to be shown for the KSEB officers
    - a. SOP time limit intimation at the time of registration
    - b. Remaining time – to be shown on report or complaint status details
    - c. List view – download-PDF/Doc/Excel
    - d. Print Facility
  8. Complaint tracing facility by
    - a. Complaint Number/Consumer number  
Or
    - b. Date and time--- from - to  
Or
    - c. Complaint type  
Or
    - d. Phone number
  9. Report for various levels
    - a. Complaint profile
    - b. List of all complaints
    - c. Monthly reports to be send to Division

**If complaints are not rectified within the time limit then the complaints shall be converted to grievances and need to be escalated to the next appropriate IGRC level.**

### **IGRC – Grievances Handling**

1. Auto escalation/forwarding
  - a. If the complaint is not rectified within SOP period then the complaint shall be converted to grievances and it shall be auto escalated to IGRC

- b. Alternatively if a complaint cannot be solved at section then if there shall be facility for manual forwarding by the AE.
  - c. All LT related complaints need to be forwarded to Subdivision level IGRC
  - d. All HT related complaints need to be forwarded to Circle level IGRC
2. While forwarding a Complaint, it need to be converted to grievance and grievance number need to be assigned. Further the matter should be intimated to complainant.
  3. Alternatively Consumer can Register Grievance at IGRC
    - a. Web portal registration facility
    - b. Complaint number – to be entered. All details shall then be fetched from Db and to be shown.
    - c. Facility for entering Detailed description of the grievance if need- Text box- not mandatory
    - d. Document uploading facility
    - e. Contact details editing facility.
    - f. Grievance number generation facility.
    - g. Intimation facility to complainant.
  4. **Hearing facility and order**
    - a. Provision for entering hearing details
    - b. Proceedings including order
    - c. With time frame
    - d. Intimation to consumer and other offices
  5. **Progress Report of IGRC**
    - a. Detailed Progress report and Summary Reports
    - b. of section and subdivision level IGRC
    - c. To be made available at Division level
    - d. Facility for print out
    - e. Report/Document download in pdf/word/excel
  6. **Progress Report of IGRC**
    - a. Progress report and Summary report of Circle level IGRC
    - b. Need to be send/ made available to the Chief Engineer Office

## **IGRC Corporate Level- Requirements**

1. Detailed and summary report to made available at corporate level
2. Provision for generating consolidated reports –monthly and quarterly
3. Suo moto proceedings to be initiated-
4. Hearing details
5. Orders

### **Other facilities**

#### **1. Division office Report**

- a. Need reports for division conference
- b. After that consolidated report need to be prepared and send to circle office

#### **2. Chief Engineer Office**

- a. Reports from Circle offices need to be discussed
- b. Summary reports of all circle offices under that CE office need to be prepared
- c. To be send/made available to Corporate IGRC

**The aforementioned requirements are based on the initial stages and may be subject to further expansion as necessary**

## **Non Functional Requirements & Conditions**

### **Assumptions and Constraints:**

The factors that could affect the requirements stated in the requirement specifications document. These factors are not design constraints on the software, but are rather, any changes to them may affect the overall requirements. Following are the major assumptions and dependencies;

- It is assumed that the system architecture with respect to hardware, software, connectivity and other infrastructure would be available as envisaged for the proper functioning of the application.
- Interfaces to KSEBL applications will be provided as web services based on the formats devised by KSEBL IT Team.
- The external interfaces would be dependent on services provided by other government agencies or service providers.
- All the legal/regulatory/administrative approvals/changes, if any, would be undertaken by the KSEBL to enable the functionality covered in this document.

The section identifies non-functional requirements to be supported by the portal. It also includes the non-functional requirements for the support & management service, Design, development and testing of the service.

**1. Application Requirement description Technology Platform should be**

Portal should be platform independent of Operating System, browser etc

The Application shall be developed in PHP/JAVA and DB in Opensource platform. The application shall be mobile responsive

**2. Scalability Requirement description**

The application must be scalable in design and implementation. The application can efficiently handle increased demand and adapt to changing requirements over time.

**3. Change requirement Management**

During the support period, any enhancements or customizations that fall within the 7 person-days limit are to be provided without incurring any additional charges to KSEBL.

**4. User Manual**

The firm should prepare detailed video-based user manuals covering “step-by-step” and “how to use” concepts for the portal.

**5. Training**

**End-User Training:**

Needs training to the Trainers of KSEBL for arranging training sessions for individuals or groups who will be using the software. This includes guidance on how to navigate the interface, perform specific tasks, and make the most of the software's features.

**6. Application knowledge Transfer:**

This training (Knowledge Transfer) shall be provided to the KSEBL's Core IT Team members (minimum 10 employees) at Thiruvananthapuram, Kerala. It includes Software Architecture, Design Pattern, Documentation, Deployment Process, Configuration Management, Data Model and Database Schema, API & Integration's, Security Considerations, De-Bugging and error handling etc.



**7. Training Materials**

The firm shall be responsible for preparation of the training materials, handouts covering “step-by-step” and “how to use” concepts for the portal.

**8. Project Inception**

The firm should prepare a detailed Project Plan detailing all tasks including the person in charge, allocated resources, timelines for each activity, milestones, and deliverables

**9. Requirement study**

The firm should review and finalize proposed SRS in discussion with KSEBL and submit a detailed SRS to KSEBL.

**10. System Design**

Based on the SRS the firm should perform detailed system design. As part of this phase the firm should submit design documents. The portal shall be integrated with KSEBL internal applications,, SSO, SMS gateway, Payment Gateway etc and capable to send communications through email & other modes.

**11. User Acceptance Tests (UAT)**

The firm should conduct User Acceptance Tests (UATs) to ascertain whether the application and its sub-system is capable of meeting the functional requirement as per the requirement. Conducting such tests will be responsibility of the vendor. KSEBL will provide full co-operation to the vendor in conduct of the tests.

**12. Source code & Documentation**

The source code of the application along with full documentation is to be handed over to IT wing of Kerala State Electricity Board (KSEB). The development firm shall Provide comprehensive technical documentation that covers the architecture, design decisions, and the internal workings of the application. The intellectual property rights of the application with KSEBL only

**13. Product Support**

The entire source code should be transferred to KSEBL. A detailed documentation explaining the structure of code should be submitted along with source code

**14. Security**

Ensure the design of the web-portal shall follows the NCIIPC, CERT-In guidelines and security auditing of the portal is also included in the scope of the work. The vendor shall provide the necessary steps/support to obtain certification from a CERT-In empaneled agency

**14. Version Control System**

The application development shall follow version control system

**15. Time line**

The selected firm shall complete the development and commissioning of the application with in **3 months** from the date of issue of Letter of Award.

**16.** The firm shall have successfully completed two government/Public Sector projects for consideration in the pre-qualification process.

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