

Project Blue Light

Project Analysis Document

Singapore EMA Electrical Installation Licence
Application & Renewal Automation Platform

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1. Project Purpose & Background

1-1. Project Purpose

To build a one-stop digital platform (App/Web) that automates the **new application and renewal process for Electrical Installation Licences (EIL)** for commercial and industrial premises in Singapore.

1-2. Current Pain Points (As-Is)

- In Singapore, it is **legally mandatory** to hold an Electrical Installation Licence from the **Energy Market Authority (EMA)** to operate an electrical board exceeding **45kVA**
- The current process is **entirely manual** — upon receiving a renewal notice, licensees must find and engage a Licensed Electrical Worker (LEW) on their own
- Delays can result in **termination of electrical supply by SP Group (Singapore Power)**
- The **high turnover rate of Singapore's commercial spaces** (due to high rental costs) creates continuous demand for new applications and renewals

1-3. Key Value Proposition

- Tenants and building owners can **complete the entire process via self-service**: discover website → read guidelines → sign up → make payment
- LEWs receive **guaranteed job assignments in exchange for an annual subscription fee** (first year free), with access to the inspection system
- Post-inspection **rectification quotations** create additional revenue streams

2. User Types

User	Role
Applicant	Tenants, building owners, contractors — apply for / renew licences, make payments
LEW (Licensed Electrical Worker)	Licensed electrician — conducts on-site inspections, prepares documents, submits to EMA
SLD / Layout Drafter	Single Line Diagram designer (in-house or freelance)
Service Providers & Administrators	Platform administrators — manage users, professionals, and applications

3. Core Business Processes

3-1. New Licence Application

1 Open SP Group Utilities Account

Applicant applies directly via the Gov Link provided by the platform → obtains SP Account Number + Provisional Account

System captures the kVA capacity for the address (e.g., 45kVA → 45kVA; 45.01kVA → rounded up to 46kVA)

2 Complete Acknowledgement Form

SP Group form — enter applicant details (company name, UEN, address) + LEW details (name, licence number, contact)

3 Submit Letter of Appointment for Electrical Installation

LEW appointment letter — includes LEW name, licence number, installation address, company name (UEN), contact details, licence period (3 months \$50 / 12 months \$100)

4 Submit Latest SLD (Single Line Diagram)

Prepared by a Drafter or upload existing drawing. Must comply with EMA regulations

5 Pay \$100 to EMA

Payment via ELISE system (elise.ema.gov.sg) using eNETS CreditCard

6 EMA Review & Licence Issuance

Result notification within approximately 10 days → upon approval: Licence Letter + Electrical Installation Licence issued

Licence valid for 1 year (e.g., 22/01/2026 to 21/01/2027). Must be displayed at the Main Switch Board (MSB)

3-2. Licence Renewal

1 Receive EMA Renewal Notification Email

User details auto-populated; Renewal Reference Number assigned

2 Submit Letter of Appointment for Renewal

Includes LEW name, existing licence number, expiry date, renewal period (12 months \$100 / 3 months \$50)

3 Submit Latest SLD

4 Pay \$100 to EMA

5 EMA Approval & Renewed Licence Issuance

3-3. Temporary Supply Installation

1 Submit Letter of Appointment for Supply Installation

Under the Electricity Act (Cap. 89A). Choose 3 months (\$50) or 12 months (\$150)

3-4. Inspection & Rectification

1 Conduct On-Site Inspection

After electricity supply turn-on, LEW performs on-site inspection using mobile checklist + photo capture

2 Auto-Generate PDF Report

Documents Issue / Risk / Action items per category, with on-site photos. Compliant with SS 638:2018 standards

3 Deliver Report to Client

Via email or platform download

4 Link to Rectification Services

If client opts in, a rectification quotation is provided → generates additional revenue

4. Detailed Feature Specification

A. Applicant Portal (PC / Mobile Web)

#	Feature	Description
A-1	Sign Up / Login	Email/password-based registration, email verification, password recovery
A-2	New Licence Application	Enter SP Account info → Acknowledgement Form → Letter of Appointment → Upload SLD → Payment
A-3	Licence Renewal	Based on EMA renewal notification → Letter of Appointment (Renewal) → SLD → Payment
A-4	Service Type Selection	Drop-down menu for different service types; AI guides selection of Apparent Power (kVA)
A-5	kVA-Based Auto Pricing	Fixed pricing auto-calculated based on kVA captured during SP Account application (45kVA → 45kVA; 45.01kVA → rounded up to 46kVA)
A-6	SLD Service Request	Commission a Drafter for SLD preparation (EMA-compliant, 3–5 day turnaround, unlimited revisions, digital + printed copies)
A-7	Find & Engage LEW	Search LEW via Find LEW → review ratings → select → enter details → fixed pricing by DB size → payment
A-8	Find SLD/Layout Drafter	Search and engage a drafter via Find SLD/Layout Drafter
A-9	SLD Verification	Compliance verification service for SLD and layout drawings
A-10	My Profile	Manage business profile (company name, UEN, contact details), change password
A-11	My Licenses	Manually register and manage existing licences; track status (Active / Expired / Pending)
A-12	My Application	Track the status of in-progress applications
A-13	My Engagement	Manage list of engaged LEWs and Drafters
A-14	Dashboard	Overview of all applications and engagements at a glance
A-15	Chat	Communicate with engaged LEW/Drafter via Chat List feature
A-16	Document Delivery	Receive endorsed licences/drawings via email; download from platform
A-17	Payment	QR Code, PayNow (UEN), Credit Card (Mastercard / Visa), NETS

A-18	Payment History	Track payment records via dashboard
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B. LEW / Drafter Service Provider Portal

#	Feature	Description
B-1	Profile Management	Set up business profile; upload credentials and licences for verification
B-2	Job Dashboard	Manage incoming jobs, ongoing jobs, and upload reports
B-3	Mobile Inspection Form	Complete checklists on-site + attach photos via smartphone camera + electronic signature
B-4	Auto PDF Report Generation	Generate standardised inspection report PDF from form data (per SS 638:2018 standards)
B-5	Drawing (SLD) Management	Upload client drawings and link to relevant projects
B-6	Client Chat	Communicate directly with engaged applicants
B-7	Payment Tracking	View and track payment records
B-8	Subscription-Based Access	Annual subscription fee (first year free) for system access and guaranteed job assignments

C. Admin Dashboard

#	Feature	Description
C-1	User Management	View and manage all registered users
C-2	Professional Verification	Review and approve LEW/Drafter credentials before granting access
C-3	Application Monitoring	Track the status of all applications across the platform
C-4	Support Handling	Respond to customer enquiries and support tickets

D. System & Notifications

#	Feature	Description
D-1	AI Chatbot	Automated FAQ responses; LEW concurrently serves as chatbot operator while building AI training data
D-2	Email Helpdesk	Email channel for additional enquiries
D-3	Payment / Completion Alerts	Automated email notifications upon payment completion and job completion
D-4	Renewal Reminder	Automated alerts when licence expiry is approaching
D-5	New User Promotion	Conditional promotional offers for new users

5. LEW Participation Models (3 Versions)

The storyboard (Drawing1) defines three operational versions for LEW participation:

Version	Model	Description
VER 1	Without LEW Participant	Document processing only, without LEW involvement
VER 2	Allow LEW to come in & bid job	External LEWs can join the platform and bid for jobs
VER 3	Allow LEW to rectify site defect	LEW performs on-site rectification of identified defects

Note: As the model progresses from VER 1 to VER 3, LEW involvement in the platform deepens, expanding both service scope and revenue opportunities.

6. Domain Glossary

6-1. Key Terms

Term	Definition
EMA	Energy Market Authority — Singapore's energy regulatory body
ELISE	EMA's online licence application system (elise.ema.gov.sg)
EIL	Electrical Installation Licence — required for installations exceeding 45kVA
LEW	Licensed Electrical Worker — licensed electrician authorised to perform electrical work
SLD	Single Line Diagram — a simplified electrical circuit diagram
SP Group	Singapore Power Group — electricity and gas utilities provider
kVA	Kilovolt-ampere (apparent power) — pricing is determined by DB size (distribution board capacity)
DB	Distribution Board — an electrical panel that distributes power to circuits
MSB	Main Switch Board — the primary electrical panel; licence must be displayed here
UEN	Unique Entity Number — Singapore's standard business identification number
SS 638:2018	Singapore Standard “Code of Practice for Electrical Installations” (incorporating A1:2022)

6-2. LEW Licence Grade System

Grade	Title	Scope of Authority
Grade 7	Licenced Electricians	$\leq 1,000V$ / Approved load $\leq 45\text{kVA}$
Grade 8	Licenced Electrical Technicians	$\leq 1,000V$ / Approved load $\leq 500\text{kVA}$ Drawing design & submission: $\leq 150\text{kVA}$
Grade 9	Licenced Electrical Engineers (PE)	Operational voltage: 1kV to 400kV May be restricted to particular types of installation

7. Letter of Appointment (3 Types)

Type	Purpose	Licence Fee	Remarks
for Electrical Installation	New licence application	3 months: \$50 12 months: \$100	Under Electricity Act (Cap. 89A)
for Renewal	Existing licence renewal	3 months: \$50 12 months: \$100	EMA sends renewal notification email; Renewal Ref number assigned
for Supply Installation	Temporary supply installation	3 months: \$50 12 months: \$150	For temporary electrical supply

Common Required Fields: LEW full name, LEW licence number, installation address, company name, UEN, contact details (phone / email / SMS), authorised person's signature, date

8. Key Deliverables (Documents Generated / Managed by the Platform)

Document	Description
EMA Licence Letter	Licence approval notification (signed by EMA Authorised Officer, includes licence number)
Electrical Installation Licence	Official licence certificate (Serial No., validity period, Licence Fee \$100, must be displayed at MSB)
Inspection Report (PDF)	On-site electrical safety inspection report (Issue / Risk / Action items per category, with on-site photos, compliant with SS 638:2018)
SLD (Single Line Diagram)	Electrical single line diagram (EMA-compliant, prepared by Drafter)
Acknowledgement	ELISE system application receipt confirmation (includes Application Reference Number, outcome within 10 days)
Credit Transaction Receipt	EMA \$100 payment receipt (eNETS CreditCard, includes Transaction ID / Ref)

