



LAL A.I.

Reimagining Energy Production

LAL A.I. – Decision Support

Text mining, n-grams, vector search and enterprise context injection for decision support

Turns real enterprise data into decisions

LAL A.I. ingests ERP/DB/REST data, builds n-gram and embedding representations, injects live context into prompts via RAG, and produces clear, auditable decision texts.

User feedback is fed back into the system; versioned templates provide measurable, iterative improvements.

Performance

- Up to 40% faster decision cycles
- +15% decision accuracy (with feedback loop)
- +25% user adoption (simplified UX)

LAL PERCEPTION

- Text Processing
- Text Cleaning

LAL AI ENGINE

- LLM Integration

LAL CORE

- Memory Management



INTEGRATION LAYER

ORACLE

- ERP CRM System Integration



LAL A.I Capabilities

N-gram Analysis

Key terms/patterns from free text; TF-IDF / PMI signal scoring.

Prompt Templates & Versioning

Versioned templates with A/B comparisons.

Data Governance

Field masking, audit logs, role-based access.

Vector Search

Sentence/record embeddings; similarity via cosine/dot.

Workflow & Orchestration

Preprocess → inference → validation → publish.

Live Connectors

SAP (OData/BAPI), Wolfram ERP, REST, SQL; scheduled/event-driven.

RAG & Context Injection

Auto-inject ERP/DB context into prompts.

Feedback Loop

User rating/explanation → quality metric → continuous tuning.

Model Support

Cloud (OpenAI etc.) + local models; hot key switching.

RAG

Generation with live context

A/B

Template benchmarking

RBAC

Role-based access

LAL A.I Features

Dashboard

Personnel Management

- Employees
- Roles

Accounts Management

- Suppliers
- Customers
- Cost Centers

Maintenance Management

- Maintenance Plan
- Machine Tracking Card
- Fault Notification
- Hydroelectric Plant Site Observation Form
- Diesel Generator Control Form
- Transformer Control Form
- Power Transmission Line Control Form
- TSKB Monthly Report

Product Management

- Products
- Services
- Equipment
- Price Information
- Data
- Categories

Planning

- Maintenance Plans
- Resource Planning
- Calendars

Vehicle Task Card

Service / Maintenance

Document Management

- Documents
- Text Headers
- Templates
- Design

Tender Management

- Tenders
- Tender 360

Energy Production Management

- Production Entry
- Biomass Energy Plant (BES) Management
- Green Energy Operations (YEO) Tracking
- Solar Power Plant (SPP) Management
- Wind Power Plant (WPP) Management
- Waste-to-Energy (WtE) Management

Construction Management

- Site Preparation
- Permits and Pre-Construction
- Infrastructure and Construction Start
- Construction Activities
- Facilities
- Occupational Safety & Operational Monitoring
- Testing and Commissioning

Finance Management

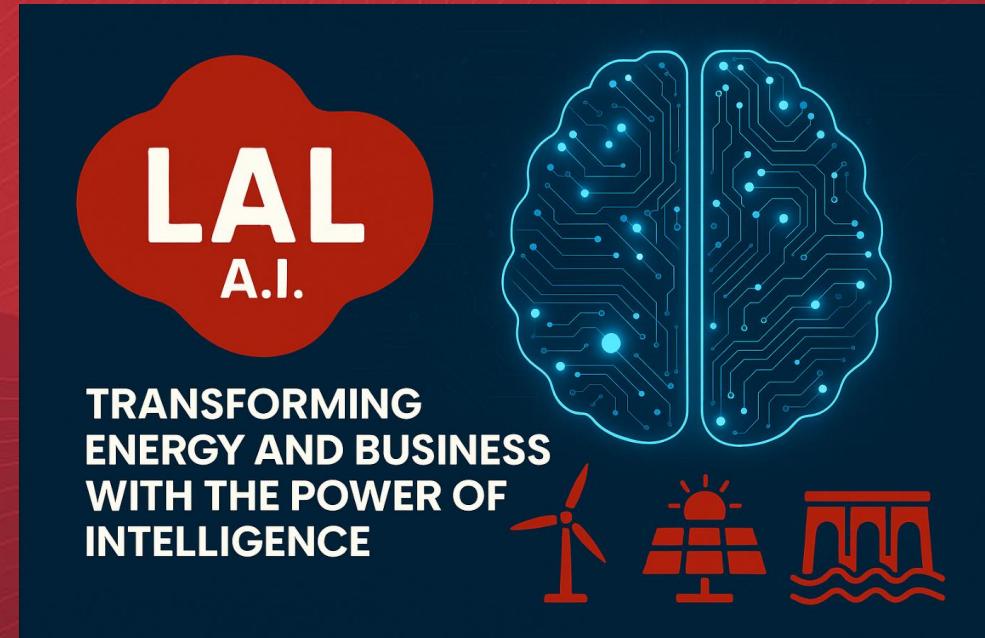
- Purchase Requests
- Sales
- CAPEX Management
- OPEX Management
- Incentives and Credits

LALA.I
Energy

QBS

Problem & Need

- **Content (bullet points):**
- Enterprises operate with **fragmented data** from multiple sources (ERP, CRM, tender platforms, IoT, market prices).
- **Keyword search** and classical AI often fail due to **semantic drift**, leading to inaccurate results.
- Decision-making processes are **slow, lack foresight**, and are not explainable.
- There is a growing demand for **real-time, context-aware decision support** in tendering, energy, and financial operations.



LAL A.I Engineie

LAL A.I. General Dashboard enables organizations to analyze all tender, finance, HR, and project data from a single center.

Tender Management: Total tenders, status distribution (draft, published, completed), country-based amount analysis, and AI summaries (win rate, risk assessment).

Financial Projects: NPV, IRR, margins, and profitability analysis, supported with monthly trend graphs.

Human Resources: Key metrics such as personnel count, absenteeism, leave requests, training completion, and shift compliance.

Document Management: Number of documents, pending approvals, expired documents, labeled and version-controlled files.

Corporate Health: On-time completion rate, policy violations, delays, data alerts, and audit findings.

AI Status: AI health, coverage, response quality, drift risk, and latency metrics.

Planning: Calendar compliance, resource utilization, upcoming tasks, and overdue jobs.

Project Management: Number of projects, active projects, average progress, and budget utilization.

This holistic approach allows management to make **fast, reliable, and data-driven decisions** at both **operational and strategic levels**.

The screenshot displays the QBS LAL A.I. General Dashboard interface. The left sidebar contains a navigation menu with the following items:

- Dashboard
- Personel Yönetimi
- Çalışanlar
- Roller
- Hesaplar Yönetimi
- Tedarikçiler
- Müşteriler
- Maliyet Merkezleri
- Bakım-Onarım Yönetimi
- Bakım Planı
- Makine Takip Kartı
- Anza Bildirimi
- Hes Saha Gözlem Kontrol...
- Hes Dizel Jenarator Kontrol...
- Hes Trafo Kontrol Formu
- Hes Enerji Nakil Hattı Kontrol...
- TSKB Aylık Rapor
- Ürün Yönetimi
- Ürünler
- Hizmetler
- Ekipmanlar
- Fiyat Bilgileri
- Veriler
- Kategoriler
- Planlama
- Bakım Planları
- Kaynak Planlama
- Takvimler

The main content area is divided into several sections:

- İhaleler**: A table showing tender details. One entry is: Kod: 2025/1100062, Ad: TOPLAM 100 kW'e GÜCÜNDE ŞEBEKE BAĞLANTILI ÇATI GÜNES ENERJİ SANTRALİ KURULUMU, Ülke: Türkiye, İl: Isparta, Tür: Yapım, Usul: Kısıtlı, İlan / Açılış: 27.08.2025 | 28.08.2025 16:44:00, Tutar: Taslak. Actions: Print, Edit, Delete.
- GENEL GÖSTERGE PANELİ**: A summary panel with the following data:

| İhale Toplam | Yayında | Sonuçlandı | Yurt Dışı | Toplam Tutar |
|--------------|---------|------------|-----------|--------------|
| 4 | 1 | 0 | 3 | 2112 USD |
- İhale Durum Dağılımı**: A donut chart showing the distribution of tenders by status: Taslak (blue) and Yayında (red).
- İhaleler – Ülke / Tutar**: A chart showing the distribution of tenders by country and amount. The chart shows a single bar for Türkiye at 50.000.000.
- İhale – Yapay Zekâ Özeti**: A summary panel with the following data:

| Kazanma Oranı (%) | Ülke Riski | Tutar |
|-------------------|------------|-------|
| 0 | 0 | 0 |
- Analiz edilen 4 ihale içinde %25'sinde iş güvenliği (PPE) kalemleri görülmektedir. İhalelerin %75'si yurt dışı. AB uygunluk kontrolü; EN standartı referanslarına göre ağırlıklarılmıştır.**
- E.R.P Uygulama: SAP One**

LAL A.I Enginee

Maintenance Management

Maintenance Plan

Periodic maintenance plans by plant, department, and equipment. Time-based or meter-based maintenance intervals can be defined.

Machine Tracking Card

Unique card for each machine: code, name, criticality, commissioning date, and operating hours. Service history is tracked.

Fault Notification

Records of faults, assignment of responsible staff, and monitoring of resolution process.

Hydroelectric Plant Field Observation Form

Observations and technical inspections conducted on-site in hydroelectric plants.

Hydroelectric Plant Diesel Generator Check

Monitoring performance, fuel, and maintenance of diesel generators.

Hydroelectric Plant Transformer Inspection Form

Condition, maintenance, and safety inspections of transformers.

Hydroelectric Plant Power Transmission Line Check

Field inspections of transmission lines, risk assessments, and maintenance logs.

TSKB Monthly Report

Monthly summary report of tenders, services, and maintenance costs.

YEO (Green Energy Operations) Maintenance Module

Solar Power Plant (SPP) Maintenance Plans

Periodic maintenance of solar panels and inverters.

Wind Power Plant (WPP) Maintenance Plans

Maintenance plans for turbines, rotor blades, and wind measurement devices.

Biomass Energy Plant (BES) Maintenance Plans

Maintenance of biomass plant fuel feeding systems and boilers.

Waste-to-Energy (WtE) Maintenance Plans

Maintenance of incineration systems, filters, and emission control equipment in waste-to-energy facilities.

Bioenergy Maintenance Plans

Maintenance of organic waste processing facilities, biogas units, fermentation tanks, and energy conversion systems.

The screenshot displays the QBS LAL A.I (Powered By A.I) software interface, version v.0.01, running on a Windows system. The interface is in Turkish and includes the following components:

- Left Sidebar:** A navigation menu with links to various modules: Dashboard, Personel Yönetimi, Hesaplar Yönetimi, Tedarikçiler, Müşteriler, Maliyet Merkezleri, Bakım-Onarım Yönetimi, Bakım Planı, Makine Takip Kartı, Anza Bildirimleri, Hes Saha Gözlem Kontrol Formu, Hes Dizel Jenarator Kont.Tak., Hes Trafo Kontrol Formu, Hes Enerji Nakil Hattı Kontrol..., TSKB Aylık Rapor, Ürün Yönetimi, Planlama, Doküman-Beğ, İhale Yönetimi, Enerji Üretim, Finans Yönetimi.
- Top Header:** QBS LAL A.I (Powered By A.I) .ai Motor:v.0.01, DB: lal_v1 | Sunucu: 192.168.1.100
- Top Right:** Plan Kartı (Plan Card) for Plan Kodu HFB-0001, Plan Adı Haftalık Bakım Planı, Santral: ZOE Elektrik Santrali.
- Middle Left:** Makine Kartı (Machine Card) for Kod PMP-BFP-04, Makine Kodu: PMP-BFP-04, Makine Adı: Kazan Besleme Suyu Pompa - A, Santral: ZOE Elektrik Santrali, Bölüm: A Bölümü, Ekipman (ops.): Ekipman Seç, Durum: Aktif.
- Middle Right:** TSKB Aylık Rapor (TSKB Monthly Report) showing data for Toplam İhale: 4, Servis Sayısı: 1, Servis Maliyeti: 1200 TRY. A pie chart shows Durum Dağılımı (Status Distribution) with 3 Taksik and 1 Yayında. A bar chart shows Ülkeye Göre Tahmini Tutar (Estimated Value by Country) for Türkiye (TRY), Türkiye (USD), and Türkiye (EUR).
- Bottom:** A table showing Durum (Status) and Adet (Count) for Taksik (3) and Yayında (1). Another table shows Ülke (Country), Para (Currency), and Tutar (Value) for Türkiye (TRY), Türkiye (USD), and Türkiye (EUR). Buttons for Kaydet (Save) and İptal (Cancel) are at the bottom right.

LAL A.I Enginie-Documents

Document Analysis → Tender Decision Support → Construction Workflow

1. Document Analysis

•N-gram Analysis:

Automatically detects recurring patterns in specifications, contracts, and tender documents (e.g., warranty periods, payment terms, penalty clauses).

•Context Search:

Clauses are compared with past projects. For example, "health & safety" requirements are matched with historical risks and costs.

•Neural Interpretation:

AI focuses not only on keywords but also on the contextual meaning of sentences, providing concise summaries for decision-makers.

2. Tender Decision Support Mechanism

•**Financial Simulation:** FX rates, CAPEX/OPEX tables, and incentives are integrated with document analysis.

•**Risk Analysis:** Ambiguous or risky clauses (e.g., delay penalties) are automatically flagged.

•**Decision Impact:** Management instantly sees which tenders are more profitable and sustainable through document-driven insights.

3. Transition to Construction Processes

Insights from document analysis trigger the **EPC (Engineering, Procurement, Construction)** workflow once the tender is awarded:

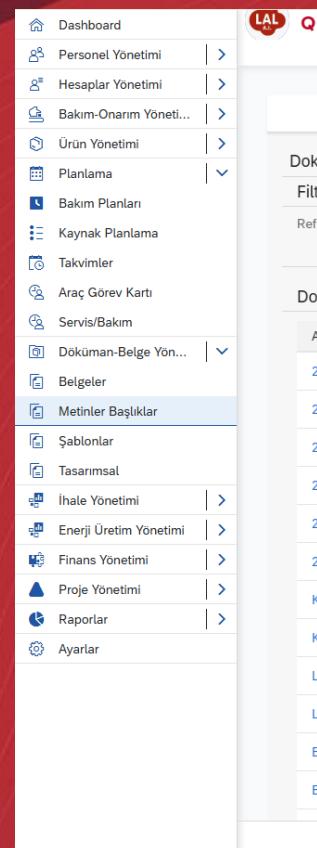
- Site establishment and permits,
- Construction works (excavation, foundation, concrete),
- Mechanical and electrical installation,
- Quality control & HSE,
- Testing, commissioning, and operational readiness.

4. Added Value

•**Time Savings:** Tender evaluation cycle shortened by up to 50% through automated document insights.

•**Accuracy:** Decision support prevents mispricing and overlooked risks.

•**Integrated Management:** Document analysis → tender decisions → construction progress reports are all monitored in a single dashboard.



LAL QBS LÂL A.I (Powered By A.I) .ai Motor:v.0.01

DB: lal_v1 | Sunucu: 192.168.1.100



Murat KAR
Yönetici

Doküman İçgörüleri

Filtreler

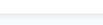
Ref tipi Ref ID

örm. 123

İçerikte ara...



Doküman Durumu

| Ad | Tip | Ref | İndeks | AI | İşlem |
|-----------------------------------|------|-----|--------|----|---|
| 2025-1232596_sozlesme_tasarisi... | word | | | |    |
| 2025-1232596_sozlesme_tasarisi... | word | | | |    |
| 2025-1232596_idari_sartname.doc | word | | | |    |
| 2025-1232596_idari_sartname.doc | word | | | |    |

LAL QBS LÂL A.I (Powered By A.I) .ai Motor:v.0.01

DB: lal_v1 | Sunucu: 192.168.1.100



Murat KAR
Yönetici

Doküman Yönetimi

Filtreler

Ref Tipi Ref ID

Ref ID

Proje Seç  

Belge Tipi Ara (ad/apklärma/uzantı)



Uygula

Dokümanlar

| # | Ad | Tip | Ref | Boyun | Oluşturan | Tarih | İşlem |
|--|------|-----|-----|-------|-----------|-------------------------------|---|
| 2025-1232596_sozlesme_tasarisi... | word | | | 0 | | 2025-09-12 11:53:38.738373+00 |    |
| 2025-1232596_sozlesme_tasarisi... | word | | | 0 | | 2025-09-12 11:53:38.738373+00 |    |
| 2025-1232596_idari_sartname... | word | | | 0 | | 2025-09-12 11:53:38.738373+00 |    |
| 2025-1232596_idari_sartname... | word | | | 0 | | 2025-09-12 11:53:38.738373+00 |    |
| 2025-1232596_Birim_Fiyat_Teklif_Cetveli.docx | word | | | 0 | | 2025-09-12 11:53:38.738373+00 |    |
| KB_VAPAY_ZEKA_DESTEKL_SUNUCU_ARTNAMES_Pdf | pdf | | | 0 | | 2025-09-12 11:52:14.896465+00 |    |

LAL A.I Enginie-Tender Management

Tender Management

1. Tender Dashboard

- Status of all tenders (total, draft, published, completed, canceled).
- Country-based amount distribution, CAPEX / EBITDA forecasts.
- AI analysis highlights PPE (safety equipment) compliance scores.
- Risks and missing items are automatically flagged, with recommendations provided.

2. Risk Analysis

- Identifies missing PPE (Personal Protective Equipment) or compliance gaps in tender documents.
- Risk scores are visualized on a 0–100 scale.
- Recommendation module suggests corrective actions.

3. Tender Comparison (Bid / No-Bid)

- Multiple tenders are scored and ranked simultaneously.
- Decision support mechanism answers “Should we bid or not?” using insights from past tenders.
- Average scores, risks, and profitability parameters are presented in a comparative view.

4. Tender 360

- Provides a holistic view of a single tender:
 - **General Info:** Code, name, opening date, type/procedure, financial parameters.
 - **KPIs:** Items, tasks, notes, documents, activities.
 - **Finance:** Estimated amount, advance rate, payment and delivery terms.
 - **Tasks & Calendar:** Related steps and responsibilities.

5. Added Value

- **Time Savings:** Tender evaluation cycles reduced by up to 50%.
- **Risk Mitigation:** Critical deficiencies are detected early.
- **Strategic Decisions:** AI-driven analysis determines which tenders to pursue.
- **Transparency:** End-to-end tender workflows managed in a single dashboard.

The screenshot displays the QBS LAL A.I. (Powered By A.I.) .ai Motor:v.0.01 software interface, showing four main windows:

- Ihale Dashboard:** Shows a summary of tenders: Toplam (4), Yayınlı (1), Taslak (3). A chart titled "Durum Dağılımı" shows the distribution of tenders by status (Taslak, Yayınlı). A bar chart titled "Ülke Göre Tutar" shows the amount by country (Turkey).
- Ihaleler:** A list of tenders with details like Kod (Code), Ad (Name), Ülke (Country), İl (Province), Tür (Type), Usul (Procedure), İlan / Açılış (Bidding / Opening Date), Tutar (Amount), Durum (Status), and İşlem (Action).
- Tender 360:** A detailed view of a single tender (Kod: 2025/1100062). It includes sections for Genel Bilgiler (General Information) and Finans (Finance). Details include Ad (TOPLAM 100 kW_e GÜCÜNDE ŞEBEKİ BAĞLANTILI ÇATI GÜNEŞ ENERJİ SANTRALİ KURULUMU), Konum: (Isparta), Durum: (Taslak), and Açılış: (2025-08-28 16:44:00).
- AI - İhale Karşılaştırma (Bid / No-Bid):** A section titled "Skor Sıralaması (Top 10)" showing a bar chart of scores for tenders 2025/1100062, 2025/1145070, 2025/1285661, and 2025/1241685. It also includes an "Özet" (Summary) section and a table of tender details.

LAL A.I Enginie-Finance Management

Financial Decision Support

Financial Decision Support

1. Sales & Procurement

- Procurement Requests:** Collecting project-based purchasing needs.
- Sales Management:** Tracking offers, orders, and collections.
- Sales Analysis Decision:** AI-powered Bid/No-Bid analysis to decide which opportunities to pursue.

2. Payments & Cash Flow

- Payments Module:** Planning supplier and customer payments.
- Cash Flow Table:** Monitoring balance of income and expenses.
- Scenario-Based Cash Flow:** Financial projections under optimistic, base, and pessimistic scenarios.

3. Financial Projects & Analysis

- NPV (Net Present Value):** Calculation of projects' net value today.
- IRR (Internal Rate of Return):** Annual return rate of investments.
- ROI (Return on Investment):** Profitability ratio of projects.
- Sensitivity Analysis:** Simulations of project outcomes under changing parameters such as FX rates, material costs, and interest rates.
- Volatility Analysis:** Evaluating risk vs. benefit under financial market fluctuations.

4. Profitability Analysis

- Project & Tender Profitability:** Revenue, net profit, margin, and risk analysis.
- AI Analysis:** Margin optimization and profitability forecasting using insights from similar projects.
- Automated Profitability:** Continuously updated profitability reports for all bids and tenders.

5. Decision Support Impact

- Time Savings:** Automated financial analysis speeds up decision cycles.
- Risk Management:** FX volatility, cost deviations, and financial uncertainties are predicted.
- Strategic Decisions:** Management chooses projects to invest in with data-driven insights.
- Investor Confidence:** Financial indicators become transparent and predictable.

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Murat KARAHAN Yönetici

QBS LÂL A.I (Powered By A.I) .ai Motor:v.0.01

Bid / No-Bid — AI Analiz

İhale: TOPLAM 100 kW'e GÜCÜNDE ŞEBEKE BAĞLAMA

Analiz Et (AI)

Özet

Öneri: GİRMEYELİM 52.25 /100 Eşik: 65

Yaklaşan Aşılık (gün): -18 Ulke Riski: 50 Win-Rate (%): 50.0 Tutar: 10.000.000 TRY

| Kriter | Aşılık (%) | Skor (0-10) | Katkı (0-100) | Açıklama |
|------------------|------------|-------------|---------------|---|
| Uygunluk/Doküman | 20 | 6 | 12 | OKAS/CPV tanımı |
| Ulke Riski | 15 | 5 | 7.5 | Risk: 50/100 |
| Zaman Planı | 15 | 3.5 | 5.25 | Aşılık -18 gün — zaman baskısı: yüksek |
| Uluslararası | 10 | 7.5 | 7.5 | Yurt içi — süreç uyumu: yüksek |
| Tutar Olçeği | 15 | 5 | 7.5 | Tahmini: 10.000.000 TRY |
| Geçmiş Başarı | 15 | 5 | 7.5 | 18 ay win-rate: 50.0% (toplam:0, kazanım:0) |
| Düzen Faktörler | 10 | 5 | 5 | Varsayılan not: (AI genişlemesi için alan) |

Karar: GİRMEYELİM — Toplam Skor: 52.25 / Eşik: 65

DB: lal_v1 | Sunucu: 192.168.1.100

Murat KARAHAN Yönetici

QBS LÂL A.I (Powered By A.I) .ai Motor:v.0.01

Proje

Finans Projeleri

Genel Nakit Akımı Senaryo / Sonuç

Sonuçlar (Beklenen NPV: 27.055,15 EUR)

| Senaryo | Ölçüm | NPV | IRR (yıllık) | ROI | Geri Ödeme (dönen) |
|----------|--------|---------------|--------------|----------|--------------------|
| Kötümser | 25.0 % | 24.349,64 EUR | - | -50.98 % | 1 |
| Baz | 50.0 % | 27.055,15 EUR | - | -41.18 % | 1 |
| İyimser | 25.0 % | 29.760,67 EUR | - | -31.16 % | 1 |

Senaryo / Sonuç Hesapla

Kümülatif Nakit

Karar: GİRMEYELİM — Toplam Skor: 52.25 / Eşik: 65

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QBS LÂL A.I (Powered By A.I) .ai Motor:v.0.01

Yatırım Duyuruları Analizi (NPV / IRR / ROI / Payback)

Proje: ***

Senaryo: NPV: IRR:

NPV Karşılaştırma

Kümülatif Nakit (Senaryolar)

DB: lal_v1 | Sunucu: 192.168.1.100

QBS LÂL A.I (Powered By A.I) .ai Motor:v.0.01

AI — İhale Karşılaştırma (Bid / No-Bid)

Skor Sıralaması (Top 10)

| # | Kod | Ad | Ulke | Aşılık | Tutar | Skor | Karar |
|---|-------------|---|---------|-----------|------------|------|-------|
| 1 | 2025/110062 | TOPLAM 100 kW'e GÜCÜNDE ŞEBEKE BAĞLAMA İLİ CATI GUNES ENERJİ SANTRALİ | Türkiye | 50.5 /100 | GİRMEYELİM | | |

LAL A.I Enginie-Finance Management

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QBS LÂL A.I (Powered By A.I) .ai Motor:v.0.01

DB: lal_v1 | Sunucu: 192.168.1.100

Murat KARAHAN Yönetici

Bid / No-Bid — AI Analiz

İhale: ÇATI ÜSTÜ GÜNEŞ ENERJİ SANTRALİ MAL

Özet

Öneri: GİRMEYELİM 51.75 /100 Eşik: 65

Yaklaşan Açılsız (gün): -21 Ülke Riski: 50 Win-Rate (%): 50.0 Tutar: 120.000 USD

| Kriter | Ağırlık (%) | Skor (0-10) | Katkı (0-100) | Açıklama |
|------------------|-------------|-------------|---------------|---|
| Uygunluk/Doküman | 20 | 5 | 10 | Doküman tamlığı zayıf |
| Ülke Riski | 15 | 5 | 7.5 | Risk: 50/100 |
| Zaman Planı | 15 | 3.5 | 5.25 | Açılsız -21 gün — zaman baskısı yüksek |
| Uluslararası | 10 | 4.5 | 4.5 | Yurt dışı — dil/lojistik/regülasyon riski |
| Tutar Ölçeği | 15 | 8 | 12 | Tahmini: 120.000 USD |
| Geçmiş Başarı | 15 | 5 | 7.5 | 18 ay win-rate: 50.0% (toplam:0, kazanım:0) |
| Diğer Faktörler | 10 | 5 | 5 | Varsayılan not: (AI genilemesi için alan) |

Karar: GİRMEYELİM — Toplam Skor: 51.75 / Eşik: 65

QBS LÂL A.I (Powered By A.I) .ai Motor:v.0.01

DB: lal_v1 | Sunucu: 192.168.1.100

Murat KARAHAN Yönetici

Ödemeler

| Tarih | Tip | Kurum/Sirket | Santral | Proje | Belge No | Tutar | Durum | İşlem |
|------------|----------|---------------------------|-------------------------|---------------------------------------|----------|-------------------|-------|---|
| 02.09.2025 | Tahsilat | Anadolu Metal Sanayi A.Ş. | ZEO-1 Elektrik Santrali | Yeşil Enerji Üretim ve Yönetim Hizmet | 3423 | 60.000,056,00 TRY | Açık | <input type="button" value="Düzenle"/> <input type="button" value="Sil"/> |
| 02.09.2025 | Tahsilat | Anadolu Metal Sanayi A.Ş. | ZEO-2 Elektrik Santrali | Yeşil Enerji Üretim ve Yönetim Hizmet | 3332 | 50.000,00 TRY | Açık | <input type="button" value="Düzenle"/> <input type="button" value="Sil"/> |
| 02.09.2025 | Ödeme | Anadolu Metal Sanayi A.Ş. | ZEO-2 Elektrik Santrali | Yeşil Enerji Üretim ve Yönetim Hizmet | 123 | 100.000,00 TRY | Açık | <input type="button" value="Düzenle"/> <input type="button" value="Sil"/> |

LAL A.I Enginie-Finance Management

Financial Decision Support

Financial Decision Support

1. Sales & Procurement

- **Procurement Requests:** Collecting project-based purchasing needs.
- **Sales Management:** Tracking offers, orders, and collections.
- **Sales Analysis Decision:** AI-powered Bid/No-Bid analysis to decide which opportunities to pursue.

2. Payments & Cash Flow

- **Payments Module:** Planning supplier and customer payments.
- **Cash Flow Table:** Monitoring balance of income and expenses.
- **Scenario-Based Cash Flow:** Financial projections under optimistic, base, and pessimistic scenarios.

3. Financial Projects & Analysis

- **NPV (Net Present Value):** Calculation of projects' net value today.
- **IRR (Internal Rate of Return):** Annual return rate of investments.
- **ROI (Return on Investment):** Profitability ratio of projects.
- **Sensitivity Analysis:** Simulations of project outcomes under changing parameters such as FX rates, material costs, and interest rates.
- **Volatility Analysis:** Evaluating risk vs. benefit under financial market fluctuations.

4. Profitability Analysis

- **Project & Tender Profitability:** Revenue, net profit, margin, and risk analysis.
- **AI Analysis:** Margin optimization and profitability forecasting using insights from similar projects.
- **Automated Profitability:** Continuously updated profitability reports for all bids and tenders.

5. Decision Support Impact

- **Time Savings:** Automated financial analysis speeds up decision cycles.
- **Risk Management:** FX volatility, cost deviations, and financial uncertainties are predicted.
- **Strategic Decisions:** Management chooses projects to invest in with data-driven insights.
- **Investor Confidence:** Financial indicators become transparent and predictable.

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Murat KARAHAN Yönetici

Bid / No-Bid — AI Analiz

İhale: ÇATI ÜSTÜ GÜNEŞ ENERJİ SANTRALİ MAL

Özet

Öneri: GİRMEYELİM 51.75 /100 Eşik: 65

Yaklaşan Açılsız (gün): -21 Ülke Riski: 50 Win-Rate (%): 50.0 Tutar: 120.000 USD

| Kriter | Ağırlık (%) | Skor (0-10) | Katkı (0-100) | Açıklama |
|------------------|-------------|-------------|---------------|---|
| Uygunluk/Doküman | 20 | 5 | 10 | Doküman tamlığı zayıf |
| Ülke Riski | 15 | 5 | 7.5 | Risk: 50/100 |
| Zaman Planı | 15 | 3.5 | 5.25 | Açılsız -21 gün — zaman baskısı yüksek |
| Uluslararası | 10 | 4.5 | 4.5 | Yurt dışı — dil/lojistik/regülasyon riski |
| Tutar Ölçeği | 15 | 8 | 12 | Tahmini: 120.000 USD |
| Geçmiş Başarı | 15 | 5 | 7.5 | 18 ay win-rate: 50.0% (toplam:0, kazanım:0) |
| Diğer Faktörler | 10 | 5 | 5 | Varsayılan not: (AI genilemesi için alan) |

Karar: GİRMEYELİM — Toplam Skor: 51.75 / Eşik: 65

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Murat KARAHAN Yönetici

Ödemeler

| Tarih | Tip | Kurum/Sirket | Santral | Proje | Belge No | Tutar | Durum | İşlem |
|------------|----------|---------------------------|-------------------------|---------------------------------------|----------|-------------------|-------|---|
| 02.09.2025 | Tahsilat | Anadolu Metal Sanayi A.Ş. | ZEO-1 Elektrik Santrali | Yeşil Enerji Üretim ve Yönetim Hizmet | 3423 | 60.000,056,00 TRY | Açık | <input type="button" value="Düzenle"/> <input type="button" value="Sil"/> |
| 02.09.2025 | Tahsilat | Anadolu Metal Sanayi A.Ş. | ZEO-2 Elektrik Santrali | Yeşil Enerji Üretim ve Yönetim Hizmet | 3332 | 50.000,00 TRY | Açık | <input type="button" value="Düzenle"/> <input type="button" value="Sil"/> |
| 02.09.2025 | Ödeme | Anadolu Metal Sanayi A.Ş. | ZEO-2 Elektrik Santrali | Yeşil Enerji Üretim ve Yönetim Hizmet | 123 | 100.000,00 TRY | Açık | <input type="button" value="Düzenle"/> <input type="button" value="Sil"/> |

LAL A.I Enginee- Process Integration (Project Cycle)

1. Process Integration (Project Cycle)

Tender Award → Kick-off
 • **ERP integration:** Finance, Procurement, HR.

• **Investment model:** Equity, loans, government incentives, carbon credits.

Project Financing & Leverage

• Equity contribution: 20–30% (cash flow buffer).

• Government incentives: Investment incentive certificate, VAT exemption, interest discounts, green energy grants.

Other levers:

- ECA (Export Credit Agency) loans,
- ESG funds,
- Municipality/Industrial Zone-backed credit lines.

Construction & EPC Management

• Integrated with modules:

- **Planning:** Critical path, Gantt, CPM.
- **Procurement:** BOM → ERP connection.
- **Site Management:** Workforce, subcontractors.
- **Quality & Safety:** HSE, worker safety, PPE.

Plant-Type Specific Adjustments

• **Biomass/WtE:** Fuel logistics, emission/FGT integration.

• **Solar:** PV panel sourcing, inverters, BOS logistics.

• **BES/GES shared:** Civil works, transformers/switchyards, SCADA.

Operational Readiness

• Testing & commissioning,
 • OPEX simulation,
 • Staff training.

2. Module-Based Architecture (Interconnected)

Finance Module

- Equity ratio
- Incentive/progress payment tracking
- FX/hedging plan

Project Management Module

- Tasks/Gantt, critical path
- ERP connection

Procurement & Logistics Module

- Vendor list, bid collection
- Logistics coefficient (FX + transport)

Construction & Site Module

- Workforce, subcontractors, progress payments
- Safety (PPE, certifications)

Technical Module

- Biomass/WtE: fuel analysis & FGT
- Solar: yield/layout

Reporting & Decision Support

- CAPEX/OPEX monitoring
- Scenario analysis (FX, fuel, delays)
- Management dashboard

3. Roadmap

Short term (0–3 months):

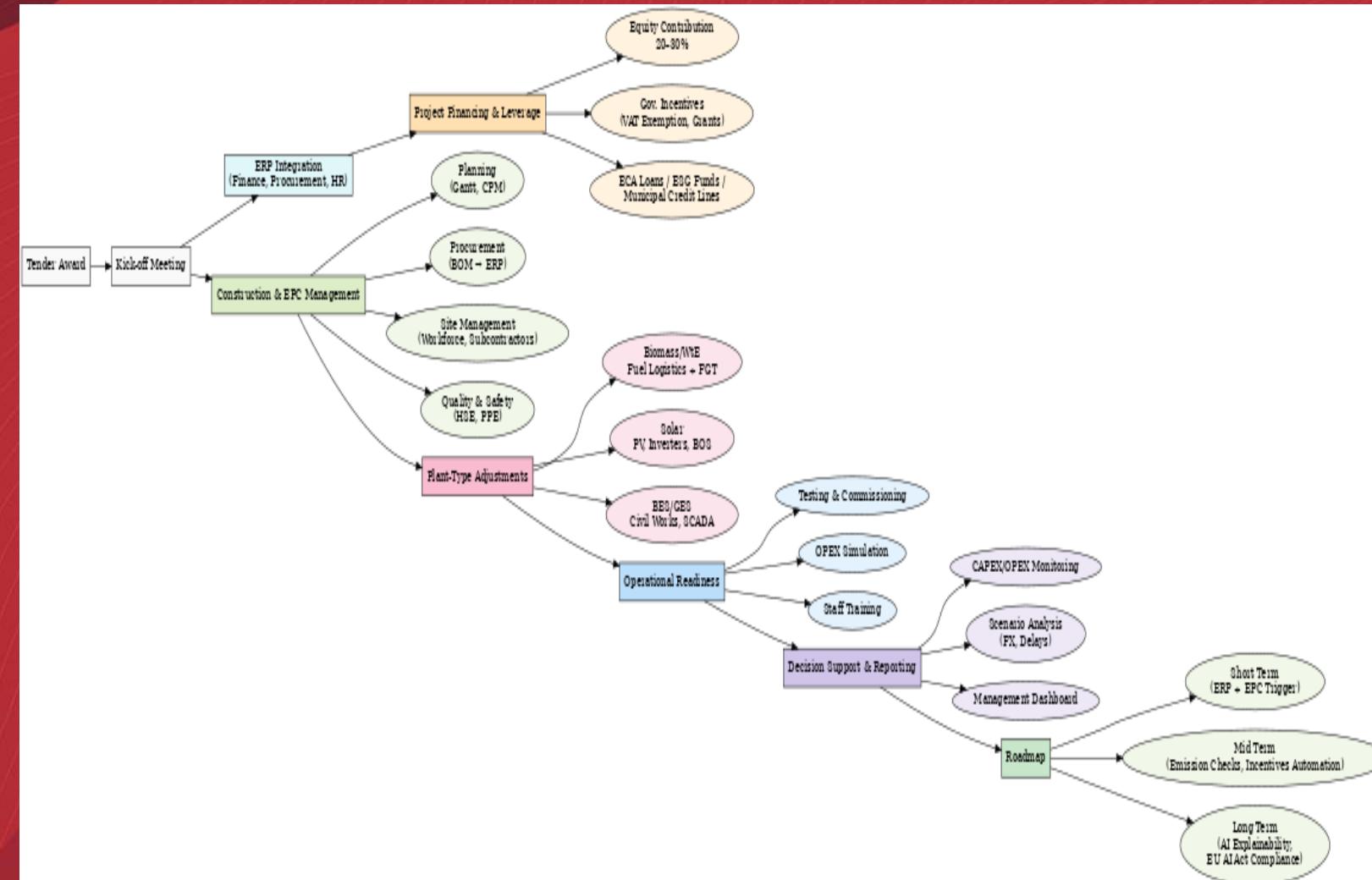
- ERP integration (equity + incentive module connection)
- Construction & EPC module triggered post-award

Mid term (3–6 months):

- Biomass/WtE FGT/Emission checks embedded
- Incentive/progress payment processes automated (Investment Incentive Certificate integration)

Long term (6–12 months):

- Decision engine aggregates all modules → “real-time NPV, IRR, Cash Flow” updates
- AI explainability (traceability of decisions)
- EU AI Act compliant reporting



LAL A.I Enginee- Site Setup & Construction Process – Operational Flow

Site Setup & Construction Process – Operational Flow 1. Site Preparation

- Land handover & boundary setting
- Geotechnical soil study, topographic survey
- Temporary site office, warehouse, security barriers
- Temporary infrastructure (electricity, water, internet)
- Safety zones (PPE distribution, assembly points, first aid cabin)

2. Permits & Pre-Construction

- Environmental permits (EIA)
- Construction permits, municipality/industrial zone approvals
- Site registration for insurance & HSE
- Heavy equipment rental (cranes, forklifts) & logistics planning

3. Infrastructure & Construction Start

- Excavation & foundation works:
 - **Biomass plants (BES):** boiler building, bunker foundation
 - **Solar plants (GES):** panel area leveling, fencing
- Roads & access: site roads, drainage, stormwater channels
- Temporary power line: generator / grid connection

Critical Points in Operations

Resource Management

- Workforce planning (labor, subcontractors, engineers)

- Daily manpower reports

- Equipment/machinery utilization plan

Progress Payments & Financial Flow

- Subcontractor progress payments (monthly % completion)
- Cash-out tables integrated with Finance Module

- Management of incentives & progress certificates

Quality Control

- Incoming material quality checks (cement, steel, panels, cables)
- Welding/concrete testing
- Certificates (EN/ISO, CE compliance)

Reporting

- Daily Progress Reports
- Weekly site meetings (employer/EPC/subcontractors)
- Monthly progress reports (finance, schedule, risks)

Summary

- Site setup = logistics, permits, infrastructure, HSE zones.

- Construction flow = excavation → foundation → civil works → mechanical/electrical installation → testing.

- Operational management = workforce, payments, quality, HSE, reporting.

- Biomass-specific: bunker + fuel handling + FGT system.

- Solar-specific: panel layout + tracker system + DC/AC cabling.

4. Main Construction Activities

- Concrete and steel structures (boiler house, transformer building, inverter room)
- Equipment foundations (turbines, boilers, ESP/FGT, transformers, panels)
- Heavy lifting operations (turbines, panels, switchyard)
- Mechanical installation: piping, ducts, fuel-feeding conveyors
- Electrical installation: cabling, inverter-transformer, SCADA infrastructure

5. Support & Auxiliary Facilities

- Administrative building, canteen, locker rooms
- Fire safety systems, hydrant lines
- Rainwater & waste management facilities
- HSE equipment (PPE, fire drills, safety kits)

6. Health, Safety & Operational Monitoring

- Daily toolbox meetings (task allocation + safety reminders)
- HSE rules: PPE checks, harness/tower climbing permits, hot work permits
- Separation of vehicle & pedestrian routes on-site
- Subcontractor audits (contract compliance + HSE compliance)
- Environmental management (dust, noise, waste segregation)

7. Testing & Commissioning

- Mechanical completion → punch list
- Electrical testing (transformers, cable insulation, SCADA signals)
- Cold test → hot test
- Performance tests → acceptance certificates

