

**Data-Driven Transformation:
Building Enterprise BI Solutions at AEPCO**
(Apprenticeship Final Report)

Duration: July 2025 – January 2026

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Academic Mentor: Mr. Suleiman Al Husseini

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▪ General Introduction:

About the Company

Alternative Energy Projects Company (AEPCO) is a pioneering renewable energy company headquartered in Jordan, with the main company in Kuwait dedicated to accelerating the Middle East and North Africa's (MENA) transition to sustainable energy solutions. The company specializes in developing, financing, and managing utility-scale solar power projects across the region, contributing significantly to the \$386 billion global clean energy investment landscape.



AEPCO operates at the intersection of renewable energy development and cutting-edge technology, managing multiple solar power plants and driving innovation in energy analytics and performance monitoring.

Department and Role

During my apprenticeship, I was placed in the IT Department, specifically within the Data Analysis and Project Performance division. My primary responsibilities encompassed:

- **Business Intelligence Development:** Designing and implementing enterprise-wide Power BI dashboards for financial and operational analytics
- **Data Engineering:** Transforming unstructured legacy data (Excel pivot tables) into structured, analyzable formats
- **Digital Presence Management:** Managing the company's website, YouTube channel, and social media platforms
- **Process Automation:** Developing automated workflows using Microsoft Power Platform

Working under the direct mentorship of Mr. Suleiman Al Husseini and regular guidance from senior leadership including CDO Dr. Raed Bkayrat and Project Financial Manager Mr.

Karthick Loganathan, I was entrusted with building the company's first comprehensive BI infrastructure from the ground up.

▪ **Detailed Description of the program**

8-Month Journey Overview

My apprenticeship journey can be organized into four distinct stages, each building upon the previous to create a comprehensive skill development trajectory:

Stage 1: Foundation Building (July – August 2025)

Focus: Data Transformation & Dashboard Development

The initial phase concentrated on understanding AEPCO's data landscape and establishing the fundamental BI infrastructure. I tackled the challenge of transforming highly unstructured financial and operational data stored in complex Excel pivot tables into structured, analyzable formats suitable for Power BI visualization.

Key Milestones:

- Completed ~2.5 weeks of intensive data cleaning and normalization
- Delivered the first 'General Info' Power BI dashboard
- Achieved dashboard approval as 'perfect' by senior leadership
- Initiated research on real-time monitoring solutions (Grafana, New Relic)

Stage 2: Executive Presentation & Advanced Reporting (September 2025)

Focus: Stakeholder Engagement & Report Development

This stage marked my transition from development to delivery, presenting dashboards to executive leadership and expanding into paginated reporting solutions.

Key Milestones:

- Presented dashboards to CEO Dr. Hassan Qasem and leadership team (September 16th)
- Conducted technical review with Project Financial Manager Mr. Karthick
- Initiated Python Streamlit project for real-time financial feedback
- Built comprehensive financial reports using Power BI Report Builder

Stage 3: Scalability & Unification (October – November 2025)

Focus: Multi-Project Integration & Digital Presence

The third stage focused on transforming single-project solutions into scalable, company-wide infrastructure while expanding responsibilities to include digital presence management.

Key Milestones:

- Unified all company/project data into single Power BI semantic model
- Implemented dynamic filtering for companies and projects
- Established company YouTube channel and optimized website
- Took ownership of LinkedIn and Instagram corporate pages
- Received two salary raises (80 JOD → 100 JOD → 150 JOD)

Stage 4: Process Automation & Advanced Development (December 2025 – January 2026)

Focus: Power Platform Automation & System Development

The final stage focused on advanced automation using Microsoft Power Platform and enterprise system development.

Key Milestones:

- Initiated Purchase Order (PO) system automation development
- Acquired Microsoft E3 license with company email
- Built systems using Power Apps, Power Automate, and SharePoint
- Completed ALL National Occupational Standards
- Enrolled in Modern AI Engineer Bootcamp (80-hour course)

National Occupational Standards (NOSs) Completed

All 5/5 National Occupational Standards were successfully completed during the apprenticeship:

NOS Code	Standard Title
TECDT81041	Conduct Business Intelligence Data Collection and Management
TECDT81042	Apply BI Tools and Technologies to Analyze and Interpret Data
TECDT81044	Develop and Implement BI Reporting Solutions
TECDT81045	Apply Scripting for Business Intelligence Development and Automation
INSBA014	Communicate in a Business Environment
FSP FA5	Draft Financial Statements / Provide Information and Insight

Training and Learning Courses

Course/Certification	Provider	Score/Status	Date
Preparing Data for Analysis with Microsoft Excel	Microsoft	95.77%	July 2025
Elements of AI - Part 1	University of Helsinki & Google	Completed	September 2025
Elements of AI - Part 2	University of Helsinki & Google	Completed	November 2025
Deloitte Mentorship Program	Deloitte	Completed	September 2025
AI UpSkilling Program	Corporate	Completed	September 2025
Modern AI Engineer Bootcamp	HTU	Enrolled (80 hours)	December 2025
IELTS Academic	British Council	Band 7-9	September 2025

▪ SECTION 1: Company work

Detailed Description of Tasks

Task 1: Data Transformation and Normalization

Objective: Convert legacy unstructured financial and operational data into analysis-ready formats.

Description: AEPCO's historical data was stored in complex Excel files featuring multiple pivot tables, inconsistent naming conventions, and scattered across various departments. My first major task was to systematically audit existing data sources, design transformation logic using Power Query scripts, and implement star-schema data models in Power BI with proper relationships and calculated measures.

NOS Alignment: TECDT81041 - Conduct Business Intelligence Data Collection and Management

Skills Applied: Power Query M Language, Data modeling principles, Excel advanced formulas, Attention to detail

Task 2: Power BI Dashboard Development

Objective: Design and implement executive-level dashboards for financial and operational monitoring.

Description: Working closely with stakeholders including the Country Manager, CDO, and CEO, I designed and iteratively refined a comprehensive dashboard suite including General Info Dashboard, Financial Analytics, Operational Performance, and Project Comparison views. The dashboard underwent multiple iterations, transitioning from detailed analytical views to board-friendly simplified presentations with a professional dark theme.

NOS Alignment: TECDT81042 - Apply BI Tools and Technologies to Analyze and Interpret Data

Skills Applied: DAX formula development, Visual design principles, User experience (UX) design, Stakeholder management

Task 3: Paginated Report Development

Objective: Create formal, print-ready financial reports for board presentations and audit documentation.

Description: Using Power BI Report Builder, I developed paginated reports exportable to PDF format for board meetings and regulatory requirements. This involved learning the VB-like expression language, designing layouts optimized for printing, implementing dynamic parameters, and creating summary tables with detailed breakdowns.

NOS Alignment: TECDT81044 - Develop and Implement BI Reporting Solutions

Task 4: Multi-Project Data Unification

Objective: Create a scalable data architecture supporting multiple projects within a single semantic model.

Description: As AEPCO expanded its portfolio, I designed and implemented a Unified Semantic Model accommodating all projects with ProjectName discriminator, Dynamic Power Query folder connectors for automated data ingestion, a Standardization Layer for data type unification, and Dynamic Filtering with context-aware slicers.

NOS Alignment: TECDT81045 - Apply Scripting for Business Intelligence Development and Automation

Task 5: Digital Presence Management

Objective: Manage and optimize AEPCO's digital footprint across multiple platforms.

Description: I took ownership of the company's digital presence including website management and mobile optimization, YouTube channel establishment with project video integration, and LinkedIn/Instagram corporate page management including the 'Masader Al Haq Project' publication.

NOS Alignment: INSBA014 - Communicate in a Business Environment

Task 6: Process Automation Development

Objective: Automate manual procurement processes using Microsoft Power Platform.

Description: The final major initiative involved developing an automated Purchase Order (PO) system using Power Apps for user interface, Power Automate for workflow automation and notifications, and SharePoint for document storage and version control.

NOS Alignment: FSP FA5 - Draft Financial Statements / ECI PC113 - Provide Information and Insight

Self-Reflection on Company Work

Working at AEPCO provided an exceptional environment for professional growth. Starting as the sole person responsible for building the company's BI infrastructure from scratch was both challenging and rewarding. The trust placed in me by leadership—culminating in direct presentations to the CEO and receiving praise for dashboard quality—validated the technical skills developed throughout my Data Science and AI studies.

The progression from data cleanup to executive presentations to process automation demonstrated a clear career trajectory, reinforced by two salary increases within the apprenticeship period. The experience taught me that technical excellence must be paired with effective communication and stakeholder management to deliver true business value.

Technical Skills Developed

Skill	Proficiency Level	Application
Power BI Desktop	Advanced	Dashboard development, data modeling
DAX	Advanced	Complex calculations, measures
Power Query M	Advanced	Data transformation, automation
Python (Streamlit)	Intermediate	Web app development
Power Apps	Intermediate	Low-code app development
Power Automate	Intermediate	Workflow automation
Excel	Advanced	Data analysis, formulas
WordPress	Intermediate	Website management
SQL	Intermediate	Data querying

Non-Technical Skills Developed

Skill	Development	Application
Executive Communication	Significant	CEO/Board presentations
Stakeholder Management	Significant	Requirements gathering, feedback loops
Self-Management	High	Solo operation, deadline management
Crisis Management	Moderate	Data error handling, rapid corrections
Professional Writing	Moderate	Reports, documentation
Adaptability	High	Multiple role expansion

Software Used

- Microsoft Power BI Desktop – Primary dashboard development
- Power BI Report Builder – Paginated reports

- Microsoft Excel – Data preparation, analysis
- Power Apps – Application development
- Power Automate – Workflow automation
- SharePoint – Document management
- Python (Streamlit, Pandas) – Web applications
- WordPress – Website management
- YouTube Studio – Channel management

LinkedIn/Instagram Business Suite – Social media management

▪ SECTION 2: Projects

Project A: Power BI Dashboard Suite

Project Description: A comprehensive business intelligence dashboard suite providing real-time visibility into AEPCO's financial and operational performance across all projects.

Key Features:

- Dynamic filtering by project, date range, and metrics
- Drill-through pages for detailed analysis
- Custom tooltips showing contextual information
- Professional dark theme optimized for presentations
- Mobile-responsive design

Results:

- 75% reduction in reporting time
- Dashboard praised as 'perfect' by CEO
- Adopted as standard reporting tool across organization

Project B: Paginated Financial Reports

Project Description: Formal, print-ready financial reports using Power BI Report Builder for board meetings, investor presentations, and audit documentation.

Technology: Power BI Report Builder with VB-like expressions

Use Cases: Board meeting packs, Investor presentations, Audit documentation

Project C: Python Streamlit Financial Application

Project Description: A web-based financial decision support tool built with Python Streamlit, providing real-time financial feedback and forecast scenarios.

Technology: Python, Streamlit, Pandas, REST APIs

Features: Real-time data updates, Interactive scenario modeling, Live cash-flow alerts, Forecast visualization

Project D: Unified Multi-Project Semantic Model

Project Description: A scalable data architecture consolidating all AEPCO projects into a single Power BI semantic model with dynamic filtering capabilities.

Innovation:

- Single semantic model for ALL company projects
- Dynamic Power Query folder connectors
- Automatic detection of new project data
- ProjectName discriminator for filtering

Project E: Purchase Order Automation System

Project Description: An automated procurement workflow system using Microsoft Power Platform to streamline purchase order creation, approval, and tracking.

Technology: Power Apps, Power Automate, SharePoint

Status: In development (December 2025 – ongoing)

PROBLEMS, CHALLENGES AND SOLUTIONS

Problem 1: Unstructured Data Chaos

Problem: AEPCO's historical data was stored in complex Excel files with multiple pivot tables, inconsistent formatting, and no documentation.

Solution: Conducted comprehensive data audit, developed Power Query transformation scripts with modular components, created documentation, and established validation checkpoints.

Outcome: Successfully transformed all legacy data within 2.5 weeks, exceeding stakeholder expectations.

Challenge 2: Solo Operation Without Precedent

Problem: As the only person building BI infrastructure at AEPCO, there were no internal experts, templates, or established best practices.

Solution: Leveraged online resources, scheduled regular check-ins with mentor, adopted iterative development with frequent stakeholder feedback, and created comprehensive documentation.

Outcome: Built confidence through successful deliveries, established self as internal BI expert.

Challenge 3: Financial Domain Knowledge Gap

Problem: Limited understanding of financial concepts, terminology, and reporting requirements.

Solution: Scheduled coaching sessions with experts, studied financial reporting standards, collaborated closely with Project Financial Manager, implemented validation process.

Outcome: Developed working knowledge of financial analytics, produced accurate reports praised by finance leadership.

Challenge 4: Live Presentation Data Error

Problem: During CEO presentation in November 2025, a data discrepancy was identified, causing embarrassment.

Solution: Acknowledged error professionally, conducted root cause analysis, implemented 'Double-Validation Protocol' requiring manager verification.

Outcome: Restored confidence through transparency, protocol adopted as standard practice.

Challenge 5: Power Platform Learning Curve

Problem: Power Apps and Power Automate presented unexpected complexity with UI limitations and frequent errors.

Solution: Dedicated focused learning time, researched error codes, adopted modular development, designed workarounds for limitations.

Outcome: Progressive mastery of Power Platform, continued system development.

▪ SECTION 3:

Overall Evaluation

My eight-month apprenticeship at AEPCO has been a transformative experience that exceeded all expectations. Starting with no internal BI infrastructure and a mandate to 'transform Excel data into Power BI dashboards,' I delivered a comprehensive suite of business intelligence solutions that earned executive praise and became integral to company operations.

Key Achievements:

- Complete NOS Fulfillment: Successfully completed all 5 National Occupational Standards
- Executive Recognition: Dashboard praised as 'perfect' by CEO and C-suite leadership
- Career Advancement: Two salary increases (80 → 100 → 150 JOD)
- Scope Expansion: Responsibilities grew from BI development to digital presence and automation
- Professional Certifications: Microsoft Excel (95.77%), Elements of AI, IELTS (Band 7-9)

Impact on Personal Level

The apprenticeship fundamentally changed my approach to professional challenges. The experience of building something from nothing taught me that technical skills are only part of the equation. Success requires initiative, communication, resilience, and continuous learning. The solo responsibility forced rapid maturation in self-management, time prioritization, and professional accountability.

Impact on Academic Level

The practical application of Data Science and AI concepts in a real business environment provided context that classroom learning cannot replicate. Deep expertise in Power BI, DAX, and data modeling now complements my academic curriculum, while Python Streamlit development bridged academic programming to production applications. The apprenticeship clarified my academic trajectory toward PL-300 certification and graduate studies at KAUST.

Career Trajectory

- Immediate: Continuing PO automation system and AI Engineer Bootcamp
- Short-term: PL-300 Power BI Data Analyst certification
- Medium-term: Graduate studies at KAUST University (MSc/PhD in AI or Data Science)
- Long-term: Leadership role in renewable energy analytics

Acknowledgments

I extend sincere gratitude to:

- Mr. Suleiman Al Husseini – Industry mentor providing daily guidance

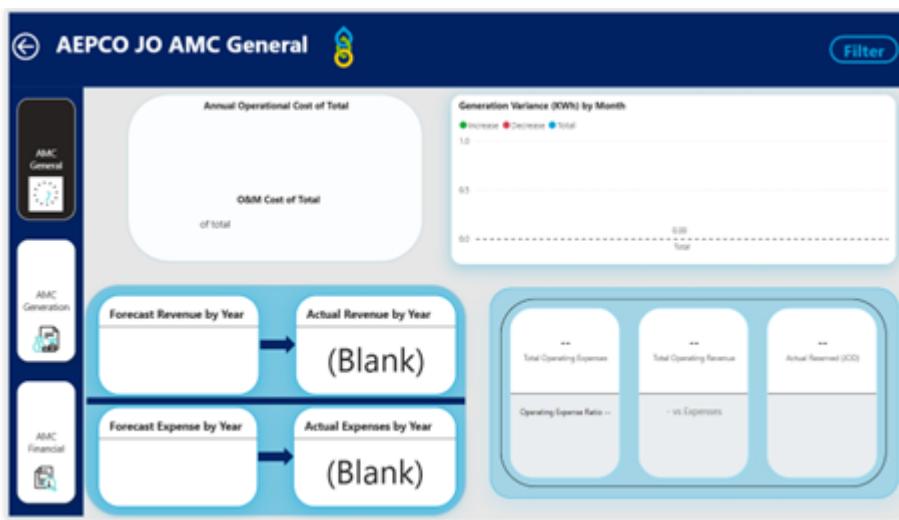
Final Report

- Eng. Lujain Ananbeh – Academic mentor ensuring educational objectives
- Eng. Hala Obeidat – Academic mentor ensuring educational objectives
- Dr. Raed Bkayrat – CDO providing strategic and career mentorship
- Mr. Karthick Loganathan – Project Financial Manager teaching financial concepts
- Dr. Hassan Qasem – CEO whose recognition validated the value delivered

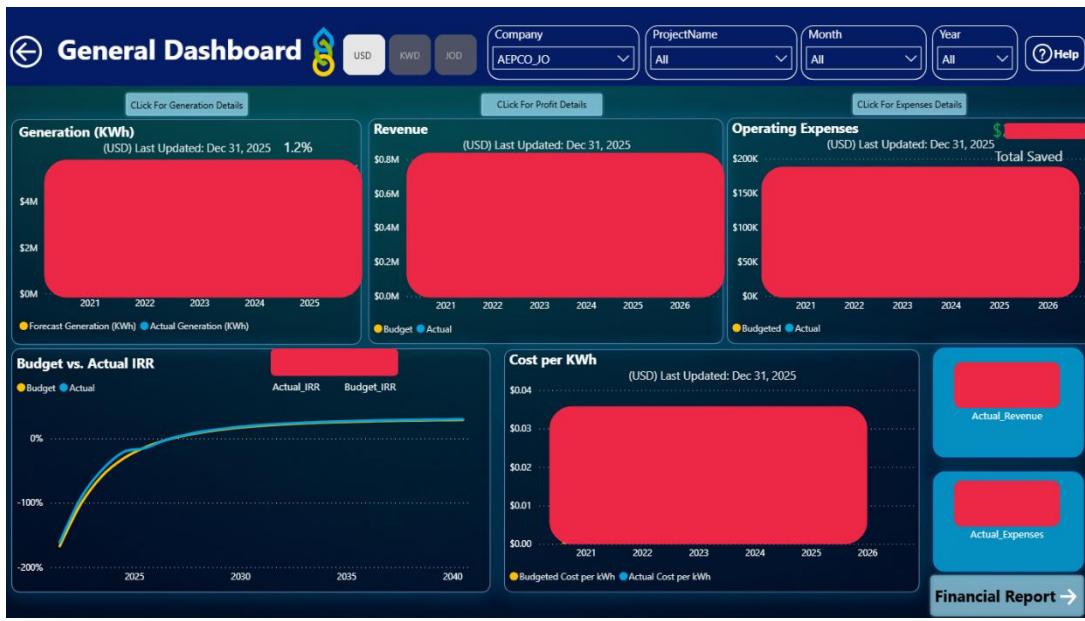
This apprenticeship has been the most significant professional development experience of my career thus far, providing skills, confidence, and direction that will guide my trajectory for years to come.

- Appendices

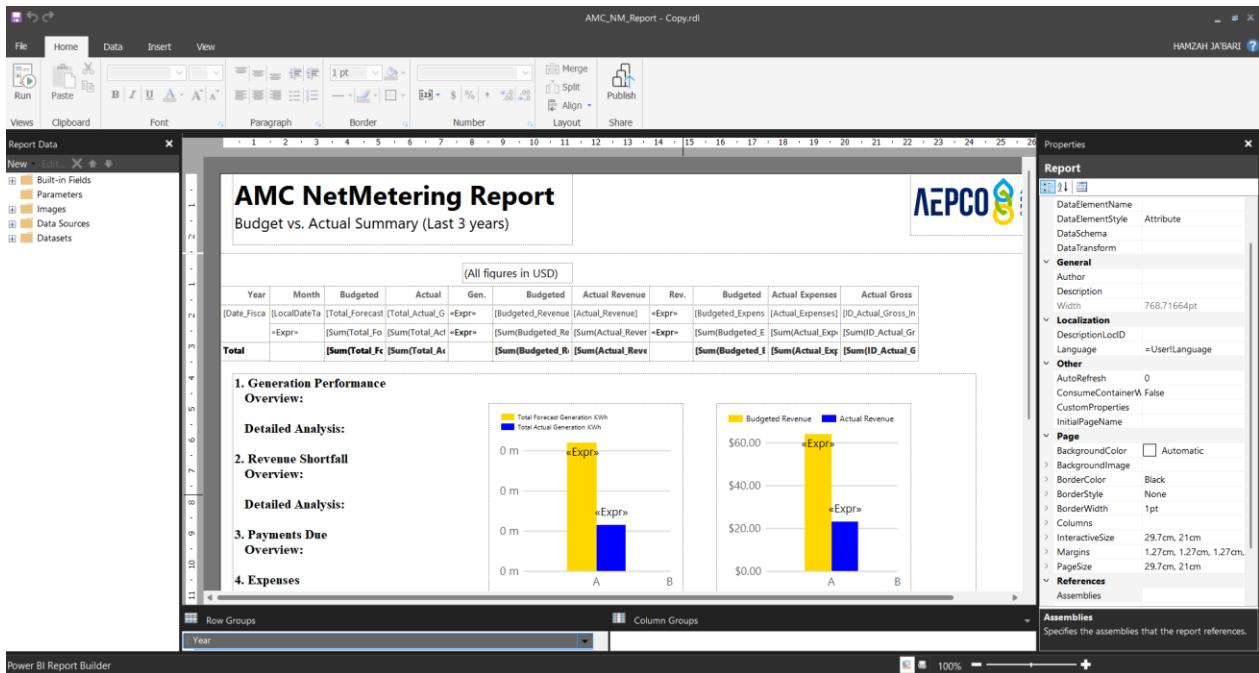
Appendix A: Power BI Dashboard Screenshots



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Appendix B: Paginated Report Samples



The screenshot shows the Power BI Report Builder interface. The main area displays the 'AMC NetMetering Report' with a title and subtitle 'Budget vs. Actual Summary (Last 3 years)'. The report includes a chart titled '(All figures in USD)' showing a comparison between Budgeted and Actual values across various categories. The report builder interface includes a ribbon with Home, Data, Insert, View tabs, a toolbar with various icons, a 'Report Data' pane on the left, and a 'Properties' pane on the right. The Properties pane is expanded to show the 'Report' settings, including General, Localization, Other, Page, and References sections. The report is titled 'AMC_NM_Report - Copy.rdl' and has a width of 768.71664pt.

Final Report

AMC NetMetering Report

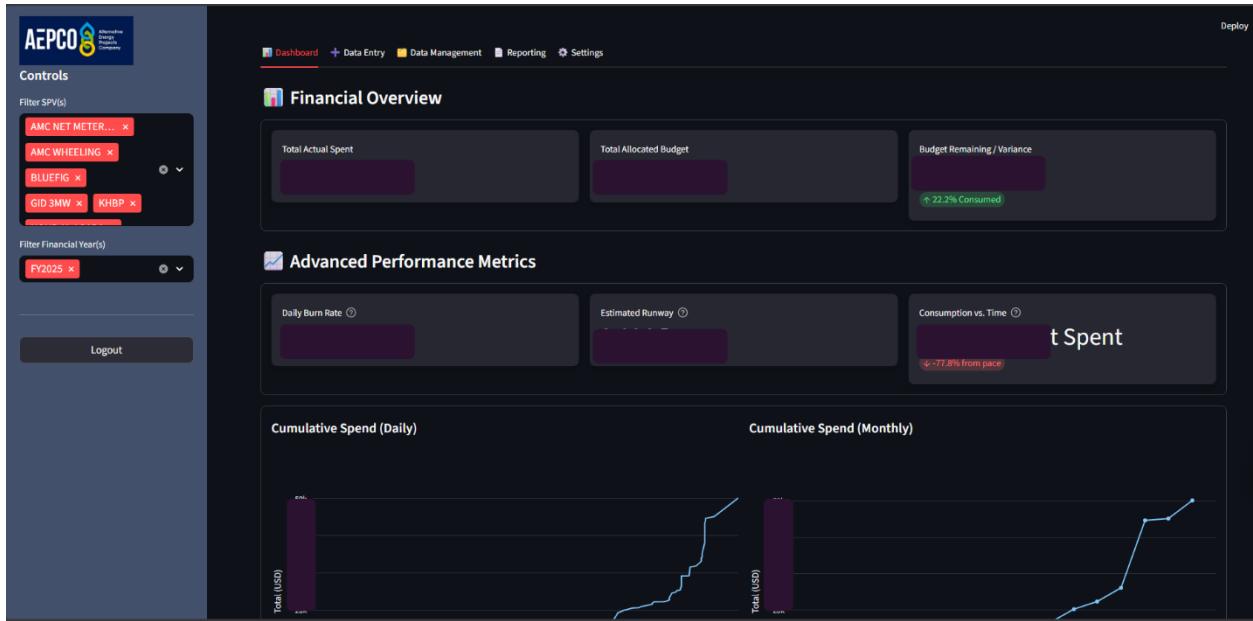
Budget vs. Actual Summary (Last 3 years)



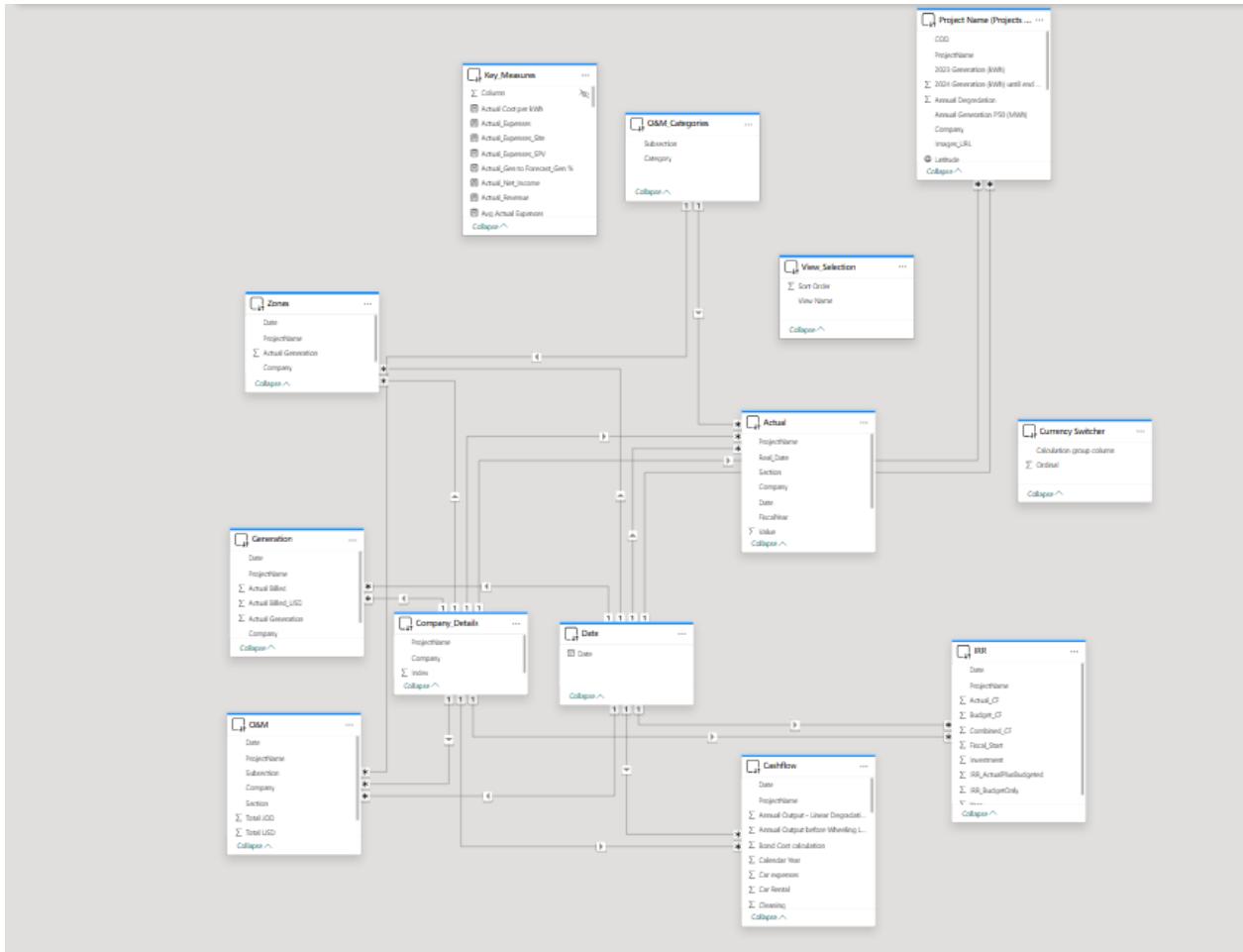
(All figures in USD)									
Year	Month	Budgeted Generation KWh	Actual Generation KWh	Gen. Variance	Budgeted Revenue	Actual Revenue	Rev. Variance	Budgeted Expenses	Actual Expenses
2023-2024	July								
	August								
	September								
	October								
	November								
	December								
	January								
	February								
	March								
	April								
	May								
	June								
2024-2025	July								
2025-2026	July								
Total									

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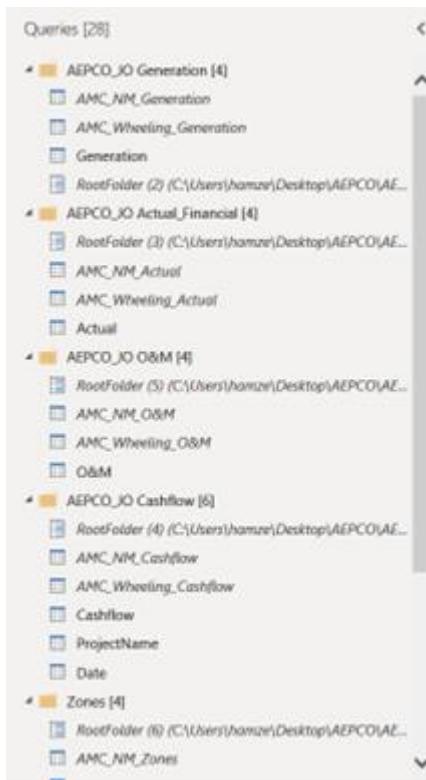
Appendix C: Streamlit Application Screenshots



Appendix D: Data Architecture Diagrams

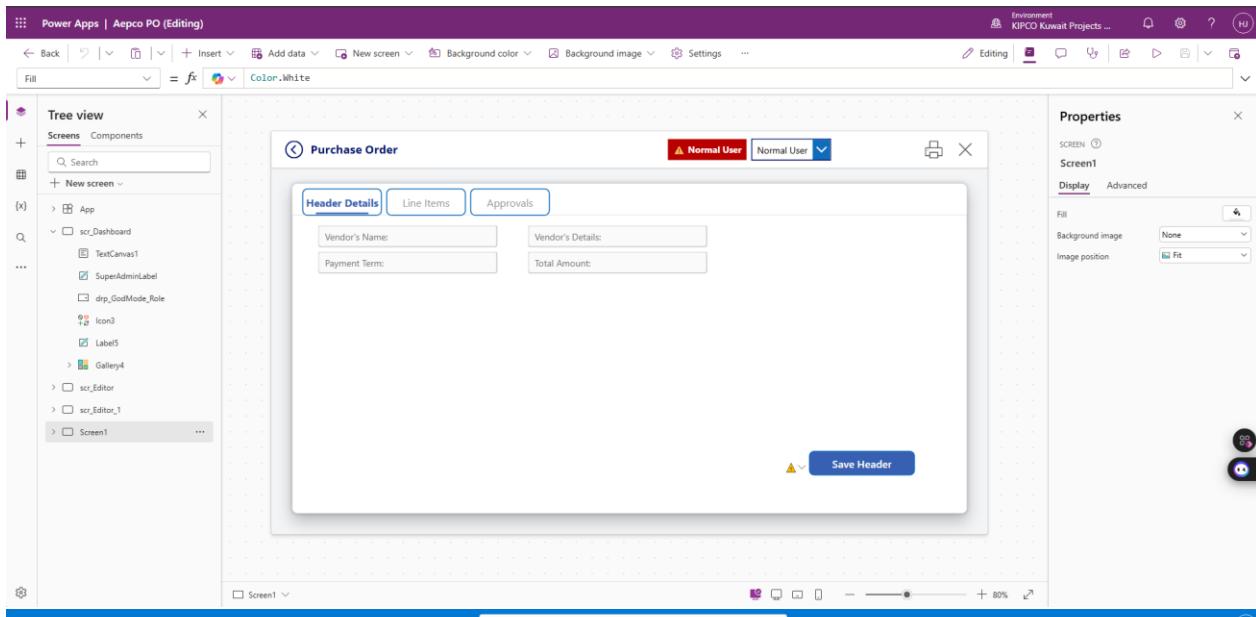


Final Report

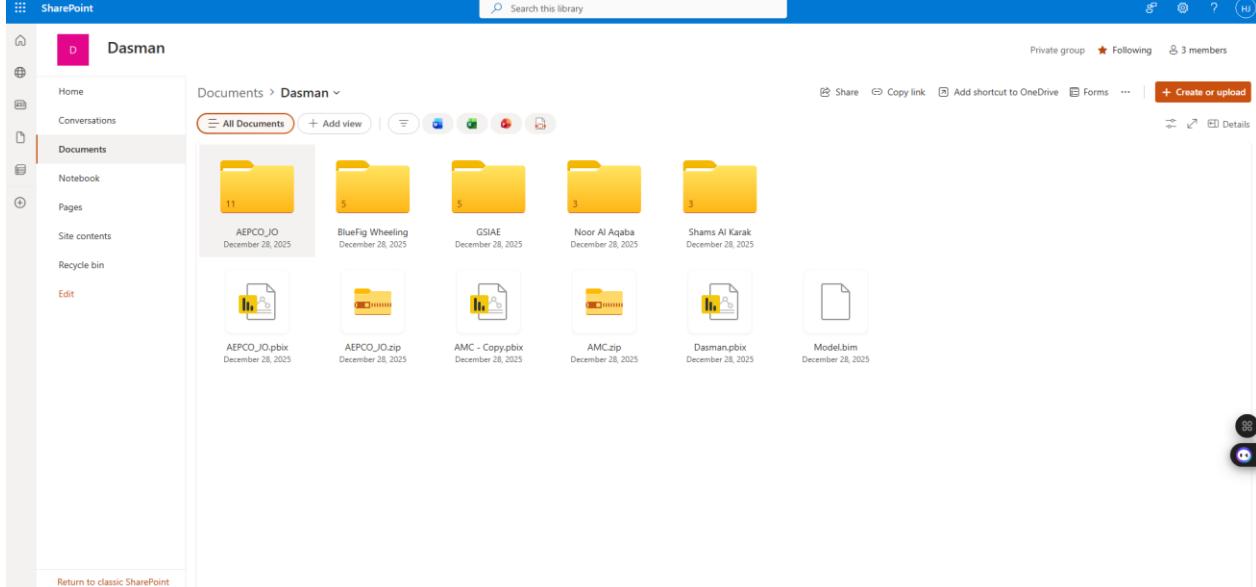


Final Report

Appendix E: Purchase Order System Development



The screenshot shows the Power Apps environment with the 'Purchase Order' screen open. The screen has three tabs: 'Header Details', 'Line Items', and 'Approvals'. The 'Header Details' tab contains fields for 'Vendor's Name', 'Vendor's Details', 'Payment Term', and 'Total Amount'. A 'Save Header' button is at the bottom right. The 'Properties' panel on the right shows settings for the screen, including 'Display' and 'Advanced' tabs, and a 'Fill' section set to 'Color.White'.



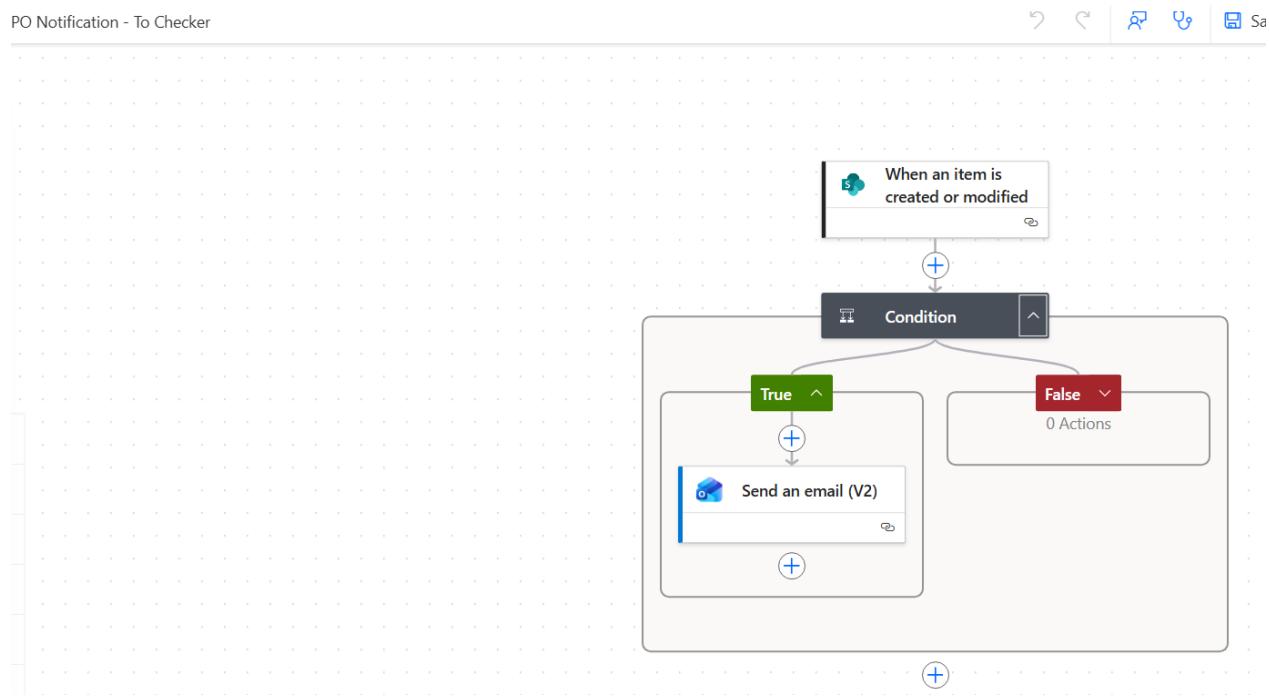
The screenshot shows a SharePoint library named 'Dasman'. The left navigation bar shows 'Documents' selected. The main area displays a grid of files and folders. The visible items are:

- AEPCO_JO (December 28, 2025)
- BlueFig Wheeling (December 28, 2025)
- GSAE (December 28, 2025)
- Noor Al Aqaba (December 28, 2025)
- Shams Al Karak (December 28, 2025)
- AEPCO_JO.pbix (December 28, 2025)
- AEPCO_JO.zip (December 28, 2025)
- AMC - Copy.pbix (December 28, 2025)
- AMC.zip (December 28, 2025)
- Dasman.pbix (December 28, 2025)
- Model.bim (December 28, 2025)

At the bottom left, there is a link 'Return to classic SharePoint'.

Final Report

PO Notification - To Checker



Appendix F: Certifications

Program Completion Certificate

THE FOLLOWING CERTIFICATE IS GIVEN TO

حمزة الجعبري

For successfully completing "Elements of AI Course" as part of the Tech Pathways MENA Program, delivered by Village Capital in collaboration with MinnaLearn, the University of Helsinki's Elements of AI for Business curriculum, and with support from Google.org

village capital

MinnaLearn



with support from
Google.org

Deloitte.

D-180



This is to certify that

Hamza Jabari

Has successfully participated in Deloitte Middle East **D-180 Digital Mentoring Program**

D-180 is a Deloitte Middle East six-month virtual mentoring program that equips youth with skills needed to find meaningful work in the new economy by matching them with Deloitte mentors. Deloitte mentors expose the mentees to the world of work, support them in setting and pursuing educational journeys or entering the job market, and act as supporting soundboards to mentees.

Rana Ghandour Salhab
Managing Partner | People & Purpose
Deloitte Middle East

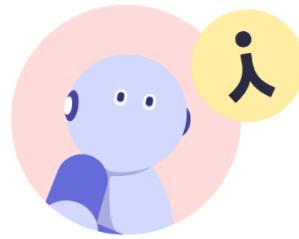
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MinnaLearn

Elements of AI
for Business



UNIVERSITY OF HELSINKI



Elements of AI for Business

Certificate of completion

awarded to

Hamza Jabari

This is to certify you have successfully completed
the 4-week program Elements of AI For Business.

October 13, 2025

A handwritten signature in black ink.

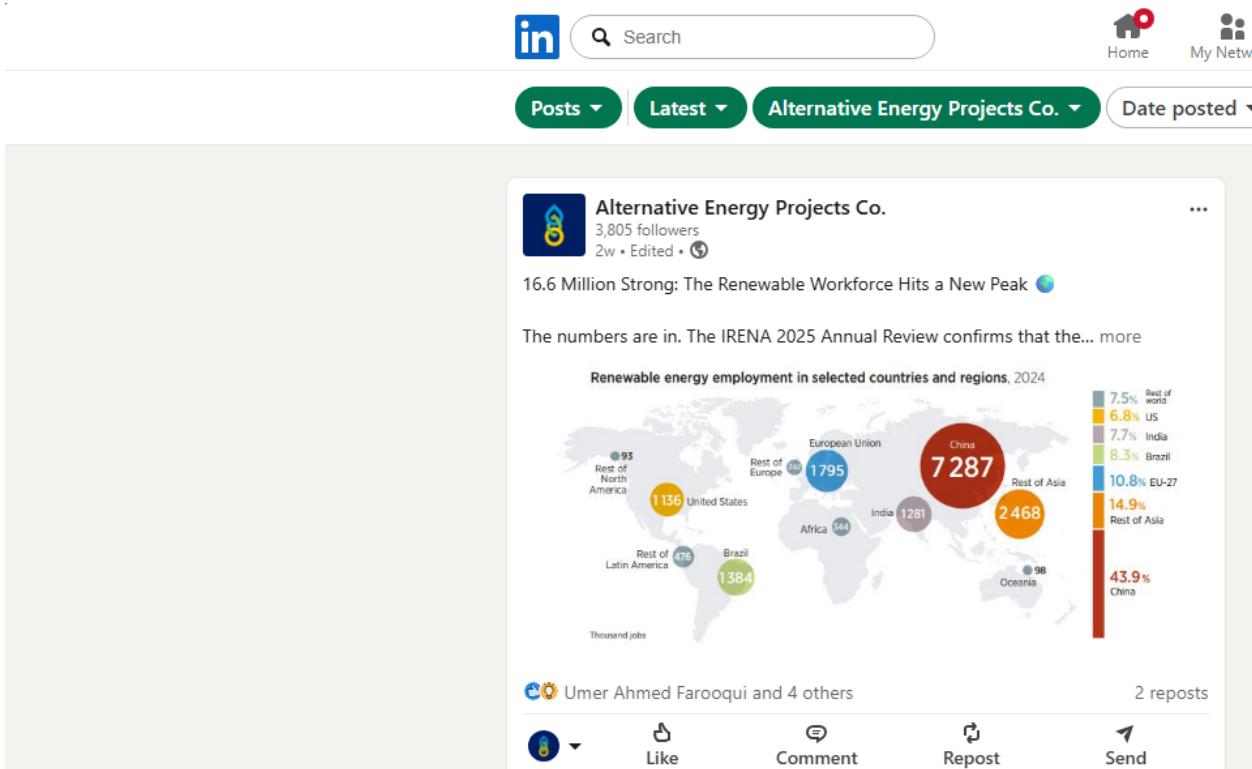
Sampo Leino
Head of Learning
MinnaLearn

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Ville Valtonen
CEO
MinnaLearn



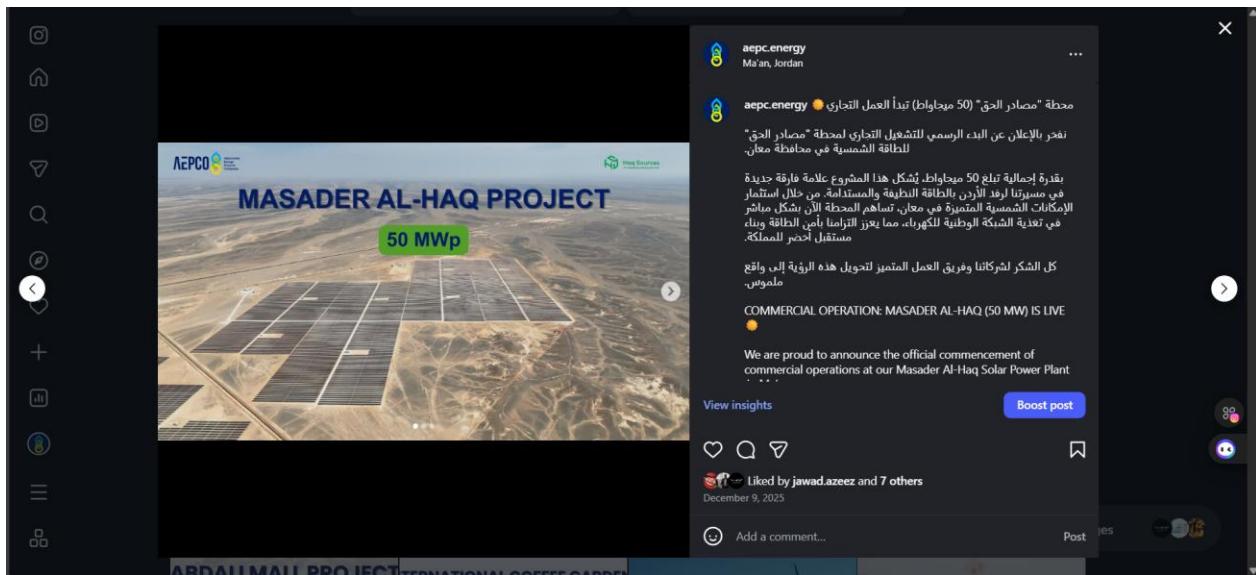
Appendix G: Website and Social Media Evidence

The LinkedIn post from "Alternative Energy Projects Co." (3,805 followers) features the headline "16.6 Million Strong: The Renewable Workforce Hits a New Peak 🌎". The post includes a map titled "Renewable energy employment in selected countries and regions, 2024" showing job counts in thousands for various countries. The data is summarized in the following table:

Region/Country	Employment (Thousands)	Percentage of World
Rest of world	93	7.5%
US	1,136	6.8%
India	1,795	7.7%
Brazil	1,384	8.3%
EU-27	1,281	10.8%
Rest of Asia	2,468	14.9%
China	7,287	43.9%

The post has received 6 likes, 4 comments, 2 reposts, and 2 sends. It was posted 2 weeks ago.



Report Completed: February 2026

Hamzah Hazem Khader Jabari

Alternative Energy Projects Company (AEPCO)