



Hitachi Energy – An Overview

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Electricity will
be the backbone
of the entire
energy system

**Advancing a
sustainable
energy future
for all**



Sustainable (Green)

Enabling a carbon-neutral energy system through renewable integration, highly efficient end-to-end electrification including industry and transport, and our eco-efficient portfolio.

We are advancing the world's energy system to be more sustainable, flexible and secure.

As the pioneering technology leader, we collaborate with customers and partners to enable a sustainable energy future – for today's generations and those to come.

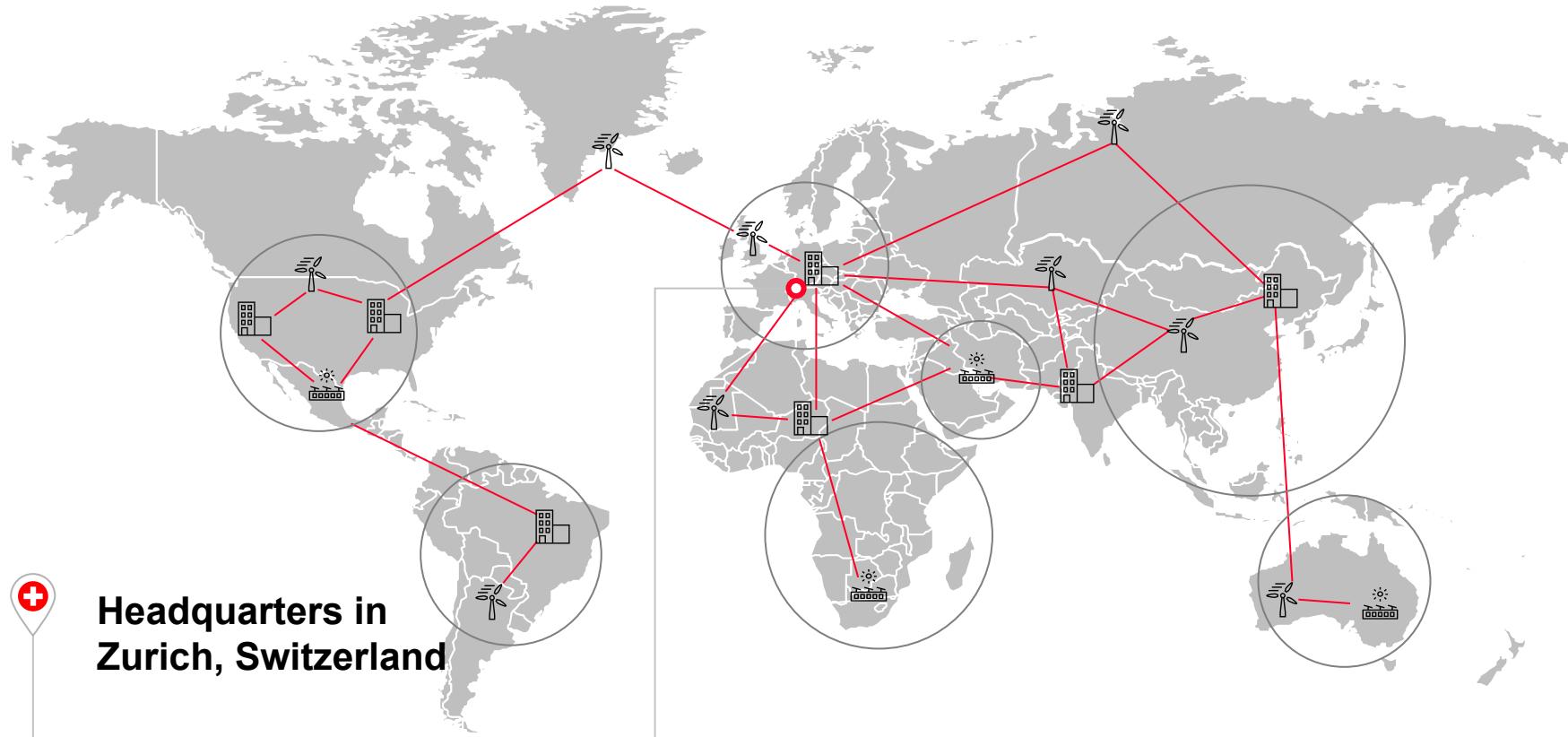
Flexible (Smart)

Enabling energy systems to actively minimize consequences of unexpected failures.

Secure (Strong)

Ensuring safe & secure mission-critical infrastructure with expert services and a flexible cyber and physical security offering.

Scalable. Reliable. Resilient. Digitized.



40,000 employees

90+
countries with
200 offices

~250
years' heritage
combined

5,500
sales employees
& field engineers

2,000
engineers &
scientists in R&D

Four Business Units

**Grid
Automation**

**High Voltage
Products**

Grid Integration

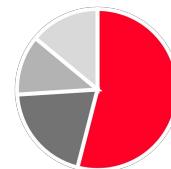
Transformers

Customers



- Transport & Infrastructure
- Industry
- Utilities

Offering



- Services
- Software & Automation
- Systems
- Products

Geographies



- Asia, Middle East & Africa
- Americas
- Europe

Grid Automation (GA)



Supporting 50% of the top 250 global electric utilities

Grid Edge projects span >250 references & 800 MW

\$4 trillion+ critical infrastructure assets managed

Grid Integration (GI)



#1 in HVDC globally:
200 GW installed systems

4,000+ projects delivered
the last 15 years

~15,000 systems
operating globally

High Voltage Products (HV)



Installed 1 in every 4 high-voltage switchgear in the world

>Half a million high-voltage circuit-breakers installed

>100 locations worldwide providing 24/7 service

Transformers (TR)



Complete range transformers, components & services

Voltage from medium voltage up to 1,200 kV AC & 1,100 kV DC

With ~30 service centers supporting world's largest installed base and portfolio

Driving innovation, pioneering digital technologies and leveraging the world's largest installed base for service opportunities

1 We bring energy!

Work with purpose



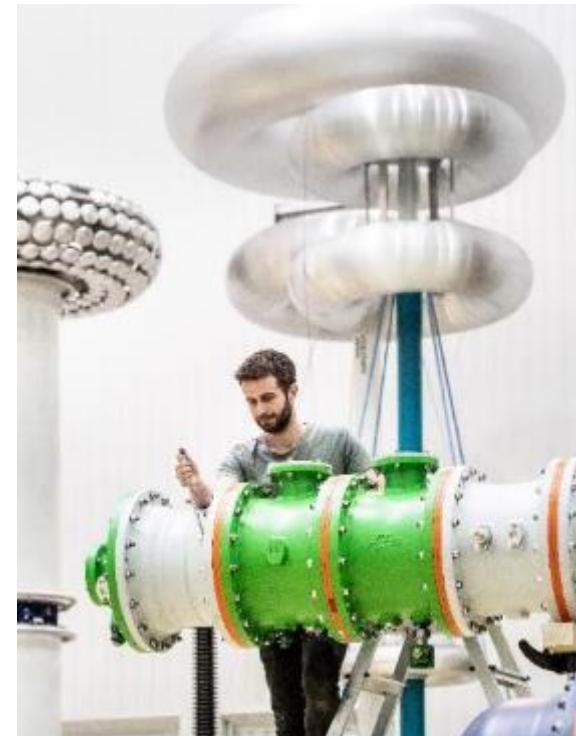
2 We achieve more together

Diversity + Collaboration
= Great Innovation



3 We inspire progress

Think big!



4 Our impact is real

Energize your career

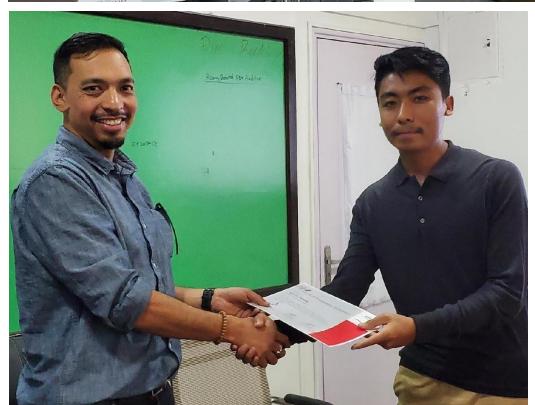


purpose meets passion

Chart your path. Discover your passion. Navigate your future.

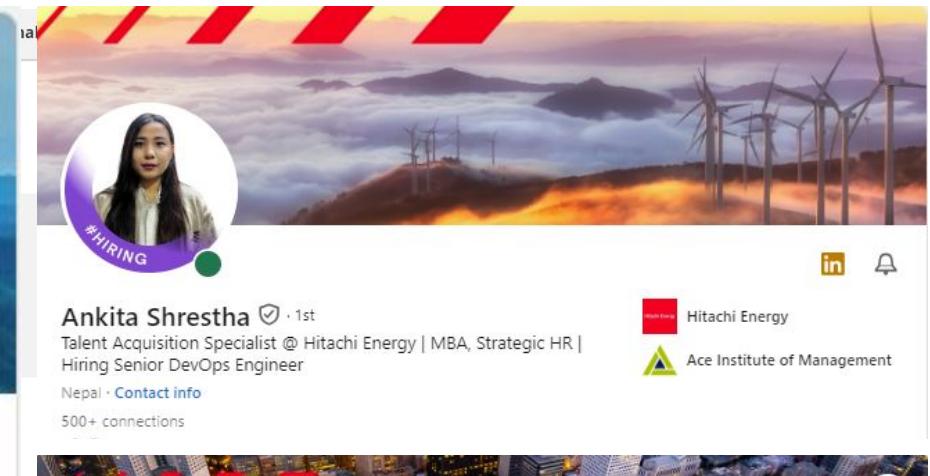
Traineeship Program

- ✓ 12-month accelerated career journey
- ✓ Full-time, paid role
- ✓ Impactful and meaningful challenges to solve through work assignments
- ✓ Opportunity to build a diverse network
- ✓ Serves as strategic, high-potential pipeline into the organization



Introduction to Placement Opportunities

You can directly reach out to our HR team through LinkedIn



STRICTLY CONFIDENTIAL



TECHENERGY

Hitachi Energy Technergy



Description of Problem:

In this data centric age, personal information should be always protected. Usage of credit card has significantly increased here in Nepal. If the details of credit card are accessible by all, it will be misused. The challenge here is to protect such sensitive data in database so that it cannot be read by any unauthorized personnel who may have obtained read access.

Functional Requirements:

1. Create a desktop/web form with fields Name, email address and Credit card number.
2. Add buttons **Insert** and **View**.
3. Insert button saves the above information in a table in a database (MS SQL server).
4. Credit card number should be saved in Encrypted form in the table.
5. Make email address unique so when we enter email address and click on View button, the name and credit card number (unencrypted form) is displayed in the form.

Non-Functional Requirements:

1. Choose an Encryption Algorithm
2. Choose a type of encryption method available for SQL Server (e.g., Always Encrypted, Transparent Data Encryption (TDE), column level, DB level).
3. Choose a type of cryptography method (e.g., Private/public key, certificates, credentials)
4. Choose a location to store above keys/certificates/credentials (local storage, DB server, App server, Azure key vault).
5. Solution should also consider how it can be implemented in larger scale based on dependencies like Cost, platform, architecture.
6. Follow proper coding standards.
7. Minimum gaps in the implementation.
8. Absence of code-smells.

One of our categories of **Technergy**, Software Testing, aims to connect with individuals who possess a keen interest in software testing within the context of a challenging Energy Portfolio Management System.

Problem Statement

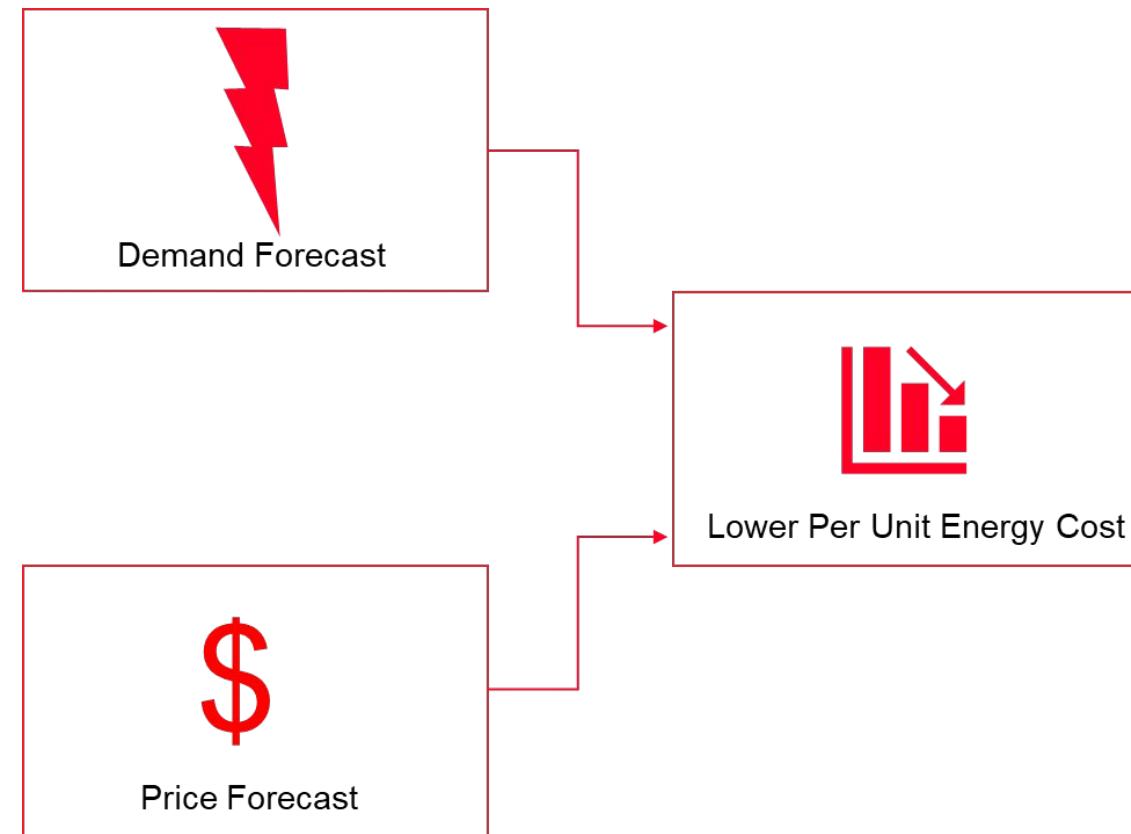
1. Analyze the requirements of the screens.
2. Document any inconsistencies, errors, or areas for improvement within the form.
3. Determine which test cases may technically be automated, then use any available framework/programming language to create automation scripts for those cases.

Plan

1. Provide hands out(word document and static html).
2. Analyze the requirements.
3. Convert requirements into test cases.
4. Automation script of the test cases.

Problem statement:

- Intermittent Energy Production and Consumer Pattern
- Volatility, and Uncertainty In the Production & Pattern
- Mathematical and Probabilistic Way to Model The Uncertainty
- Decision Driven Based on the Forecast
- Predictive Resource Generation, Demand Response
- Saving Billions of Dollars of Utility Business



Functional Requirements:

- Exploratory Data Analysis(Data Cleaning, Descriptive Statistics, Data Visualizations)
- Feature Engineering (Correlation Analysis, Feature Identification, etc.)
- Use of Forecasting Algorithms (Neural Networks, Random Forest, ARIMA, Support Vector Machine, etc.)
- Accurate Forecasted Results in CSV format

Non-Functional Requirements:

- Accuracy and Precision
- Robustness, Scalability and Performance
- Best/Clean code practices
- Presentation (Understanding of Algorithms, Explanation of graphs/charts, etc.)

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