ISO 55’001
Maturity analysis in a Swiss grid electricity company

Alain Ruffieux
Summary

- Groupe E at a glance
- Composition of the electricity price
- Evolution of the electricity market
- Asset Management by Groupe E
- Maturity analysis
- Actual situation
Groupe E at a glance

- Energy Management
- Energy Distribution Management
- Sales & Marketing Management

- 400,000 residents
- 3.1 TWh
- ISO 9001 & 14001
- 700 employees
- Born of a merger of 2 companies in 2005
Groupe E at a glance

Energy Distribution Management
- 51 high voltage substations
- 3’691 medium voltage substations
- 12’246 kilometres of electricity grid
- 45 million Swiss franc invested in the grid each year

- Natural monopoly
- Subject to an independent regulatory authority

Return on capital (WACC) of 3.83% for 2017
Composition of the electricity price

Taxes to support green energy generation
Taxes and usage fees

Energy price
- Power generation
- Purchase on the market

Use of grid
«From the power generation system to the customer»
- Transportation
- Distribution
Composition of the electricity price

- 3% Taxes to support green energy generation
- 7% Taxes and usage fees
- 45% Energy price
  - Power generation
  - Purchase on the market
- 33% Cost of exploitation and maintenance
- 33% Cost of capital (amortization and interest)
- 33% Metering, Administration costs, ...

Depend on Asset Management strategies
Evolution of the electricity market

New legislative environment since 2007

- More pressure to operate the grid on an “efficient” way
Asset Management by Groupe E

- 2008: Each region managed its grid
- 2009: Creation of an Asset Management unit
- Implementation of IT software (CMMS, Portfolio projects management,...)
- 2016: Start of condition based maintenance and project prioritization based on risks
- 2017: ISO 55’001 maturity analysis & Road map
- 2018: Implementing the recommendations and getting ready for the certification
Asset Management by Groupe E

Asset Owner → Director Energy Distribution Management

Smart solutions → Business development

Asset Management → Asset Manager
Grid Operation → Asset Operation Manager
Grid Construction → Asset Service Provider
Metering → Asset Service Provider
Engineering

www.railway-asset-management.org
Asset Management by Groupe E

- Financial objectives
- Required level of quality
- Legislative constraints
- Required level of risks

Asset Management unit

- Investments
  - Grid Master Plan
  - Budget
  - ...

- Maintenance
  - Equipment list to maintain
  - ...

- Instructions, directives

Grid Operation unit

- Work orders

Grid Construction unit

Asset Service Provider
Asset Management by Groupe E

- Load analysis
- Reliability analysis

New connection
Grid reinforcement

- Classification of each equipment in a “Condition-Importance” graph

Maintenance or Renewal

Investment Plan

Maintenance Plan
Asset Management by Groupe E

- After nearly 10 years of developing Asset Management, many questions have arisen:
  - Is the implemented System (structure HR, software, processes, ...) in line with the best practices?
  - What are the best practices?
  - What are the improvement potentials?
  - Is the Asset Management in Groupe E efficient?

Proving the robustness of the approach and promoting Asset Management as key for the Business performance within Groupe E.
Maturity Analysis

- Comparing current Asset Management practices with best practices aligning with ISO 55’001.
- Identifying existing strength, weaknesses and gaps and building a roadmap for an enhancement program.

Strengthening current practices of Groupe E and ensuring the sustainability of asset performance.
# Maturity Analysis

## Analysis based on the 7 chapters of the standard

- **Context**
- **Leadership**
- **Planning**
- **Support**
- **Operation**
- **Performance evaluation**
- **Improvement**

## 4 levels of maturity

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
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<tbody>
<tr>
<td>3</td>
<td>In line with the standards</td>
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<tr>
<td>2</td>
<td>Under implementation</td>
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<tr>
<td>1</td>
<td>Under consideration but nothing concrete</td>
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<td>0</td>
<td>No consistency with the standard</td>
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## Interviews

With people involved in Asset Management

## Documents analysis

- Processes
- Instructions
  ...

## Budget

0.5 FTE (Groupe E/Oxand) during 12 months
Maturity Analysis

- Context of the organization
- Leadership
- Planning
- Support
- Operation
- Performance evaluation
- Improvement
Maturity Analysis

- Assert Management practices are considered to be progressing and close to compliance. Compared with other grid managers and other industries, maturity is estimated at a high level.

  The average maturity level was evaluated at 2.3/3.

- The major related gaps were essentially to formalize and complete several documents (policy, strategic Asset Management plan, ...).
- On this basis, an action plan was prepared. The roadmap has identified 2 main areas of improvement:
  - Consolidate the basis
  - Refine current approach and enhance practices
Maturity Analysis

- **Step 1: Consolidate**
  - Formalize the Asset Management policy
  - Formalize the Asset Management plan
  - Adapt and structure the processes

- **Step 2: Refine the approach and Enhance**
  - Adapt the board meeting
  - Organize dedicated audits
  - Formalize the data management policy
  - Train the concerned co-workers
  - Formalize the risks management policy
Actual situation
Actual situation

- By the end of 2017, Groupe E will be compliant to ISO 55’001 and will be ready for certification.

- Currently, discussions are underway to analyze the added value of a formalized certification and eventually to schedule the start of it.

This maturity analysis was essential to improve Asset Management by Groupe E!
Thank you for your attention!

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