



ENERGY  
EFFICIENCY  
**TOOLKIT**  
FOR BUILDINGS



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# EEB Toolkit Presentation & Illustration

Delphine Garin, WBCSD  
Eddy van Eenoo, SGS



# ENERGY EFFICIENCY **TOOLKIT** FOR BUILDINGS

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CASE STUDIES

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**YOUR GUIDE TO MAKING THE BUSINESS CASE FOR SAVING ENERGY IN YOUR BUILDING PORTFOLIO**

**Read more about why  
energy efficiency in buildings matters**

## **What is in the toolkit?**

- 5 main steps to plan and implement programs (using the integrated tools and resources provided)
- Case Studies from business to illustrate the steps

## **Why the EEB toolkit?**

- To help organizations save energy in a financially viable manner
- To support your decision making process

## **Who is the toolkit for?**

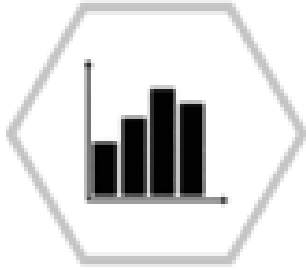
- For corporate decision makers (sustainability; finance; property)
- For all types of building portfolios

# Using the EEB Toolkit



- Describes a simple **five-stage process** to implementing an organizational energy efficiency program
- Effective when used in conjunction with implementing an **Energy Management System.**
- Provides **high-level guidance** on the steps required to complete each stage, as well as a range of more detailed **tools and resources**

# Case Studies & Resources Available



**Tools and Resources** contained in this toolkit include tables, figures, data and specific recommendations to assist you in your journey to energy efficiency.

**Case Studies** can be analyzed to find out how forward thinking organizations have planned and implemented energy efficiency programs for their building portfolios:



# EEB Toolkit | Structure



## STEP 1 | VISION

Obtain Executive Commitment

Formulate Energy Vision

Develop an Energy Policy



## STEP 2 | PLANNING

Collect Data and conduct Preliminary Analysis

Establish Benchmarks

Establish a Baseline

Establish an Energy Team

Conduct Audits

Develop an Energy Strategy

Develop a Comm. Strategy

Define Energy Goals



## STEP 3 | IMPLEMENTATION

Evaluate EEMs

Make the Business Case

Consider Procurement Approach

Implement the Project



## STEP 4 | EVALUATING AND MEASURING

Evaluate and measure



## STEP 5 | RESULTS AND FEEDBACK

Results and Feedback

# Step 1 | Vision

Obtain  
Executive  
Commitment

Formulate  
Energy Vision

**Develop  
Energy Policy**

## **Develop Energy Policy**

### **What:**

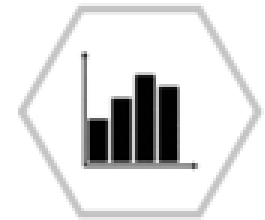
- Formal Statement
- Mandate and focus for dev. & implementation of energy strategy

### **Why:**

- Clear Statement of intent
- Framework for performance assessment
- Acceptance of energy reduction targets throughout organisation
- Commit resources to an Energy mgmt. program

### **How:**

- Different for scale and type of org
- Framework for setting & reviewing targets
- Supports purchase of EE products



[ENERGY POLICY  
TEMPLATE](#)





World's leading inspection, verification, testing and certification company.

With more than 85,000 employees, we operate a network of more than 1,800 offices and laboratories around the world.

Total revenue of 5.7 billion CHF (2015)

Targeting energy consumption at our offices and laboratories is the most **direct and effective** way we can contribute to tackling climate change.

The electricity used by our buildings accounts for almost **55%** of our global carbon emissions.



# Step 1 | Vision

**Executive commitment:** In 2015 SGS CEO Frankie Ng announced internally the requirement for each SGS region to implement three landmark energy saving projects.

## Energy Vision

By aligning social and environmental outcomes with our business goals, we believe we can move closer to achieving our sustainability vision. At SGS we operate by our “10 guiding principles for sustainable business”, these govern the day to day actions of all of our employees and our long term corporate strategy. Principle 8 and 9 relate specifically to energy and climate change.

### Principle 8: Doing More With Less

We are committed to achieving sustainable growth whilst managing the impacts of our business. We use natural resources efficiently and minimise waste.

### Principle 9: Investing In A Carbon-Free Future

Our readiness to adapt to climate change will ensure the sustainability of our business. We are seeking to minimise our energy consumption, reduce our carbon intensity, and invest in new technologies and offsetting schemes.

## Energy Policy



Figure 1 SGS Building and Environment Policies

# Step 2 | Planning

## Collect data

Establish  
Benchmarks

Establish a  
Baseline

Establish an  
Energy Team

Conduct  
Audits

Develop  
Energy  
Strategy

Develop  
Comm<sup>n</sup>  
Strategy

Define Energy  
Goals

## Collect Data

### What:

- Understand building char. and energy to identify focus areas

### Why:

- Starting point of baselining, benchmarking and energy audits.
- Useful for comparison with similar buildings and organisation

### How:

- Building characteristics, Equipment performance, basic energy use
- Energy Star's Portfolio Manager Tool- online tool- used to measure & track- energy consumption, water consumption and GHG



[BASIC BUILDING CHARACTERISTICS TEMPLATE](#)

[ENERGY DATA TEMPLATE](#)

[STAKEHOLDERS IN ENERGY EFFICIENCY PROJECT DATA COLLECTION](#)

Target to reduce CO2 emissions intensity by 20% by 2020 (baseline: 2014)

# CONDUCTING ENERGY AUDITS OF SGS BUILDINGS

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Facilities are prioritized as potential “hot spots” requiring an energy efficiency audit if they have floor space greater than 2,000m<sup>2</sup> (SGS occupied), and are owned rather than rented buildings.

During 2015, we conducted 14 energy audits in China, India, Bangladesh and Belgium. Capital expenditure and Return on Investment (ROI) has been calculated for more than 50 actions.

Typical energy efficiency measures for 2015 include lighting, HVAC, cooling, building envelope (window thermal coating), renewable energy, free (evaporative) cooling, and improved pump efficiency.



# Step 3 | Implementation

Evaluate  
EEMs

**Make the  
Business  
Case**

Consider  
Procurement  
Approach

Implement the  
project

## Make the Business Case

### What:

- Ensure your EE project is understood & clearly articulated.

### Why:

- EE projects were historically often viewed as 'discretionary' by executive management teams

### How:

- Address key factors relating to benefits, risks and finance for every EEM, in the business case:
  - Align with business priorities
  - Involve key stakeholders
  - Financial evaluation
  - Funding options
  - Potential risks
  - Demonstrate benefits to the whole business



ALIGNING WITH  
EXISTING BUSINESS  
PRIORITIES

INVOLVING KEY  
STAKEHOLDERS

FINANCIAL EVALUATION

EVALUATING PROJECT  
RISKS & DEVELOPING  
MITIGATION  
STRATEGIES

DEMONSTRATING  
BENEFITS TO THE  
WHOLE BUSINESS

# Step 3 | Implementation



## EEMS – value, cost, complexity

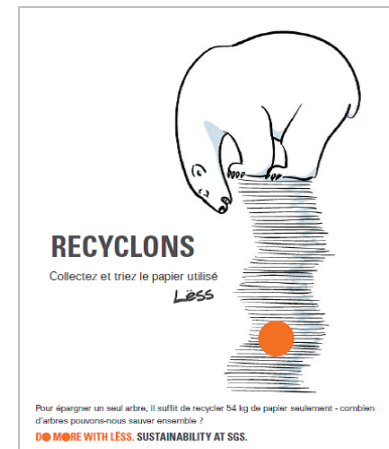
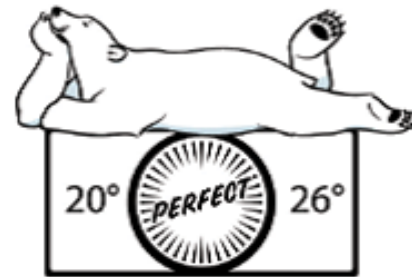
Green Book translates our sustainability performance into financial values  
RoI: chosen measure of evaluation for energy projects (3-4 year payback)

## Example of projects

- Antwerp dock-water cooling [project](#)  
The cooling system at our facilities in Polderdijkweg, Antwerp site was 16 years old and was due for replacement. Energy Performance Contract
- Re-use of warm air from IT cooling for space heating in Geneva offices

## Behavior change

Spot orange dot campaign



# Step 4| Evaluating & Measuring

## What:

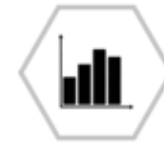
- Track energy performance

## Why:

- Seeing and understanding the positive changes

## How:

- Calculate at a project or aggregated level
- Energy savings cannot always be directly measured
- Visual presentation of energy use can be the most effective way of communicating progress and achievements
- Use tools to aid you



[BEHAVIOUR CHANGE](#)

[CALCULATING & COMMUNICATING ENERGY SAVINGS](#)

# Step 4 | Evaluating & Measuring



## Monitoring and tracking progress via an online tool

Centralized energy monitoring is valuable in alerting to spikes in energy use & in measuring the performance benefit of EE projects

### Meter Report

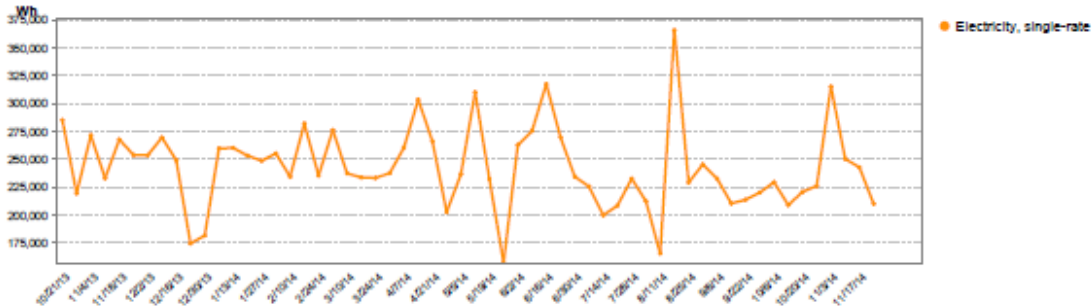
Overview



Organisation: SGS SA  
 Node: Elektrioltets verbruik  
 Path: SGS SA > Central and North-Western Europe > Belgium > Antwerpen Polderdijkweg > Elektrioltets verbruik > A02.S5.A0 Bord  
 Start date: 10/21/13 12:00 AM  
 End date: 11/30/14 12:00 AM  
 Resolution: weekly



Electricity, single-rate



Date Electricity, single-rate  
Wh

Date	Electricity, single-rate Wh
1 10/21/13	264,092.00
2 10/28/13	219,380.00
3 11/4/13	271,444.00
4 11/11/13	232,978.00
5 11/18/13	267,630.00
6 11/25/13	253,778.00
7 12/2/13	253,580.00
8 12/9/13	269,304.00
9 12/16/13	248,968.00
10 12/23/13	174,564.00
11 12/30/13	181,648.00
12 1/6/14	259,620.00
13 1/13/14	260,098.00
14 1/20/14	253,218.00
15 1/27/14	248,552.00
16 2/3/14	255,064.00





# Step 5 | Results & Feedback

## What:

- Presentation of results & outcomes to executive management

## Why:

- Ideal opportunity to demonstrate the effectiveness of implemented EE projects
- Use a track record of success to secure commitment & resources for further EE improvements

## How:

- Revisions
- Budget allocation
- Approvals

## Step 5 | Results & Feedback



Emission data is collected from all affiliates twice a year

Good monitoring of EE projects is essential to provide feedback on the results of our intensive efforts and to secure management commitment for future projects

“SGS has demonstrated through the application of our EEB programme that implementing sustainable business practices not only reduces our CO2e emissions; it also decreases operational costs, upskills our staff, reduces strategic risk, and helps to ensure compliance with environmental legislation. We are proud of the successes of our environmental programme, and it is a pleasure to share these results with our valued stakeholders.”



*Daniel Rufenacht,  
VP Corporate Responsibility,  
SGS*