



# Guidance Document for ESS Self-assessment tool

---

## Elaborated by the SESEC consortium

EURATEX - European Textile and Apparel Confederation (Coordinator)

BAAPTE - Bulgarian Association of Apparel and Textile Producers & Exporters (BG)

BMS - Belgian Monitoring Systems bvba (BE)

CITEVE - Technology Center for the Portuguese Textile and Garment Industry (PT)

INCDTP - The National Research & Development Institute for Textiles and Leather (RO)

DTIF - Deutsche Institute für Textil- und Faserforschung (DE)

ENEA - Agenzia Nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile (IT)

Gherzi van Delden GmbH (DE)

Pirin-TEX EOOD (BG)

*3/12/2014*

---

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Communities. The European Commission is not responsible for any use that may be made of the information contained therein.



## **Objectives and Concepts**

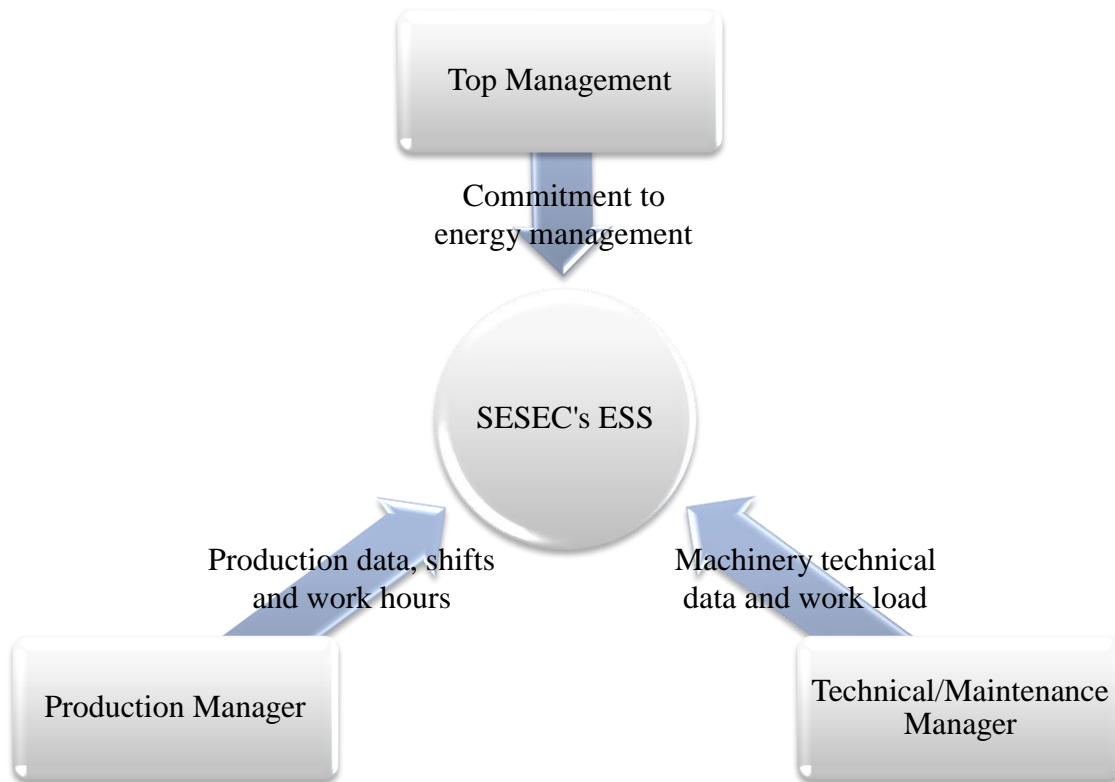
SESEC's Energy Saving Scheme (ESS) implements a methodology that can be easily applied by the internal work force within the clothing industry. The addressed clothing industry segments include:

- T-shirts and related - knitted;
- Shirts and blouses - woven;
- Trousers and skirts (casual and denim) - woven;
- Suits & overall jackets - coats;
- Pullovers flat knitted;
- Underwear and bras; and
- Technical products.

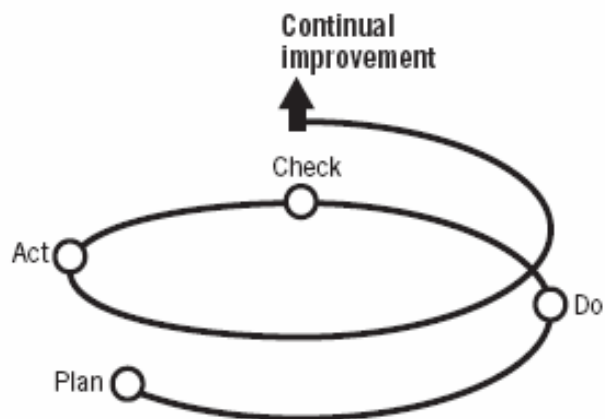
For each of these segments, the tool allows an analysis by process. The processes are:

- Weaving;
- Knitting;
- Spreading&Cutting;
- Embroidery;
- Printing;
- Sewing; and
- Finishing.

The tool is result oriented, simple to understand and based on the intrinsic technical and production knowledge of the company's work force. The methodology requires commitment to energy management by top management and an "energy team", which is composed by employees that embody the plant knowledge on production flows and the technical and operational data for production machines and its auxiliaries.



The methodology follows the widely used Plan-Do-Check-Act (PDCA) cycle and although standard based, this tool specifically focuses on technical analysis for energy consumption and on measure proposal for immediate implementation and savings. With a hands-on approach the tool avoids the often encountered feeling of over-analysis or over-study. In fact this methodology skips several steps of the standard approaches. Its







use assumes that within the company, especially in the top management, the notion exists that energy has to be managed like any other resource and that there is an untapped energy potential to explore.

The SESEC's ESS is supported by three Excel based tools, which are:

- Energy Distribution Support Tool – EDST;
- Energy Management and Benchmark Tool – EMBT; and
- Self Assessment Tool – SAT.

This document will present the Plan-Do-Check-Act cycle in this order but implementation does not require the user to follow it strictly.

As stated above the SESEC's ESS is divided into 4 stages:

- PLAN stage includes an energy self assessment and the decomposition of the total energy use. This stage answers the following questions:
  - How does my company stand regarding energy management and where are the areas I can improve both in best practices and energy saving technology?
  - What cost effective energy saving measures should I implement?
  - What measures have priority?
  - How and where is energy being consumed?
- DO stage includes the specific implementation of the energy saving measures suggested in the PLAN stage.
- CHECK stage is to be used both as starting point and for continuous verification. In order for a company to know its state in terms of energy, indicator calculation and benchmarking are the first steps. For continuous verification, monitoring & targeting is to be added. This stage answers the following questions:



- What is the energy content of my product?
  - What is the carbon footprint of my product?
  - What is the specific energy cost of my product?
  - How do I evaluate my consumption on a regular basis?
  - How is the company doing, energy wise, when compared with its counterparts?
- 
- ACT stage represents the evaluation of implemented measures, application of corrective measures, continuous search for more measures to implement and new areas to find waste. This stage is an internal evaluation which compares actual achievements with the estimate in the PLAN stage. This stage answers the following questions:
    - Did I achieve my goals?
    - What more can I do?



### **Specific Outputs**

After implantation SESEC's ESS tools will provide the following outputs:

- List of energy saving measures with qualitative cost & payback data and implementation priority;
- Energy distribution by segment, both thermal and electrical;
- Energy distribution throughout the various production processes depending on segment, both thermal and electrical;
- Energy bookkeeping which collects and documents all energy relevant data systematically;
- Company's global and/or segment energy indicators on a monthly and annual basis. Indicators include the Specific Energy Consumption (SEC), the Specific Cost (SC) and the Carbon intensity (CI) where:
  - $SEC = \text{Energy} / \text{Production}$ ;
  - $SC = \text{Energy Cost} / \text{Production}$ ; and
  - $CI = \text{Greenhouse Gases (CO}_2) / \text{Energy}$
- Company's global and/or segment graphical analysis of "Energy vs. Production" on a monthly and annual basis;
- Company's global and/or segment graphical analysis of "Energy Cost vs. Production" on a monthly and annual basis;
- Company's global and/or segment analytical calculation of energy consumption when production is 0, the calculation of energy required to produce one additional unit and calculation of the energy proportion that doesn't contribute to production;

Benchmark position based on calculated indicators globally and by process in each segment.