Case Study

Environmental Controlling

The Company Hans Meier Textil GmbH

Company description:

The company Hans Meier produces high quality decoration textiles, has 80 employees and an annual turnover of 500 Mio. Rs. Their main markets are Austria and Germany, appr. 20 % of the production is exported to the other EU states. 10 % is sold worldwide.


The environmental policy of the company:

„We will:

- consider environmental protection equally as the economical and social interests of the company,

- responsibly support the protection of our environment,

- save resources,

- re-use waste products in material cycles if possible,

- support the sense of responsibility of all our employees in all fields and

- aim at reaching an open dialogue with our customers, the authorities and the public.

Management of the Hans Meier GmbH"

The organisation of the company:
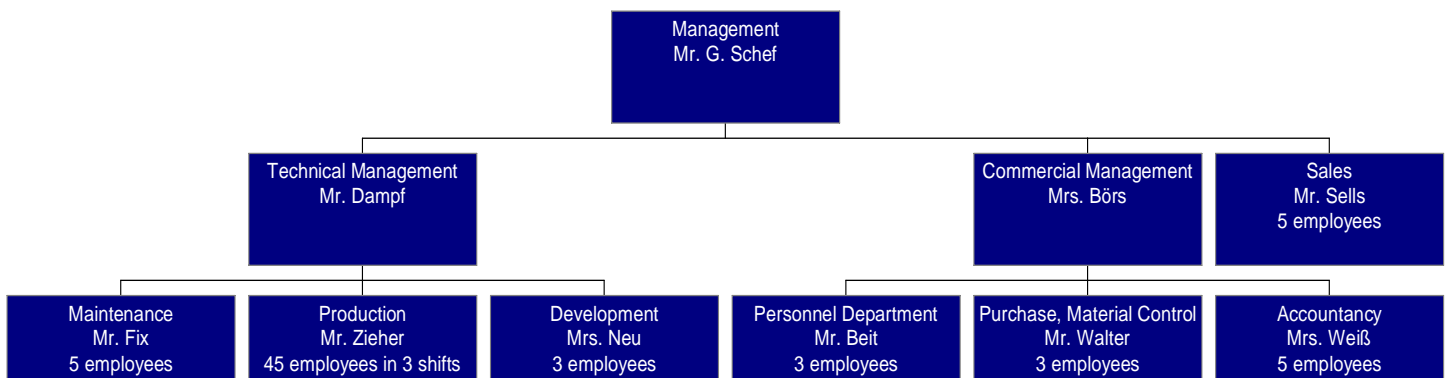
The production process:

The purchased yarn is already coloured. After impregnating it with spinning oil it is weaved on fast running looms in air-conditioned rooms. The spinning oil is washed out after weaving because it would affect the subsequent treatment.

After being dried the material is coated with a special flame retardant solvent by cylinders. In a next step it is dried again. After that a quality control is carried out followed by the cutting, the winding up on spools and the packaging for the dispatch.

Flow chart:

```
                              yarns
                                │
  spinning oil ───────────────►│
                                ▼                          waste
                        ┌───────────────┐
                        │  weaving mill │──────────────────────────►
                        └───────────────┘
                                │
                                ▼                          waste water
  water ───────────────────────►┌───────────────┐
                        │  washing      │──────────────────────────►
                        └───────────────┘
                                │
                                ▼                          exhaust air
  natural gas, air ────────────►┌───────────────┐
                        │  drying       │──────────────────────────►
                        └───────────────┘
                                │
                                ▼                          waste water of cleaning
  flame retardant ─────────────►┌───────────────┐         the cylinders
                        │  coating      │··························►
                        └───────────────┘
                                │
                                ▼                          exhaust air
  natural gas, air ────────────►┌───────────────┐
                        │  drying       │──────────────────────────►
                        └───────────────┘
                                │
                                ▼                          waste
  ─────────────────────────────►┌───────────────┐
                        │ quality control│─────────────────────────►
                        └───────────────┘
                                │
                                ▼                          waste
  ─────────────────────────────►┌───────────────┐
                        │  cutting      │──────────────────────────►
                        └───────────────┘
                                │
                                ▼
                          material product
```
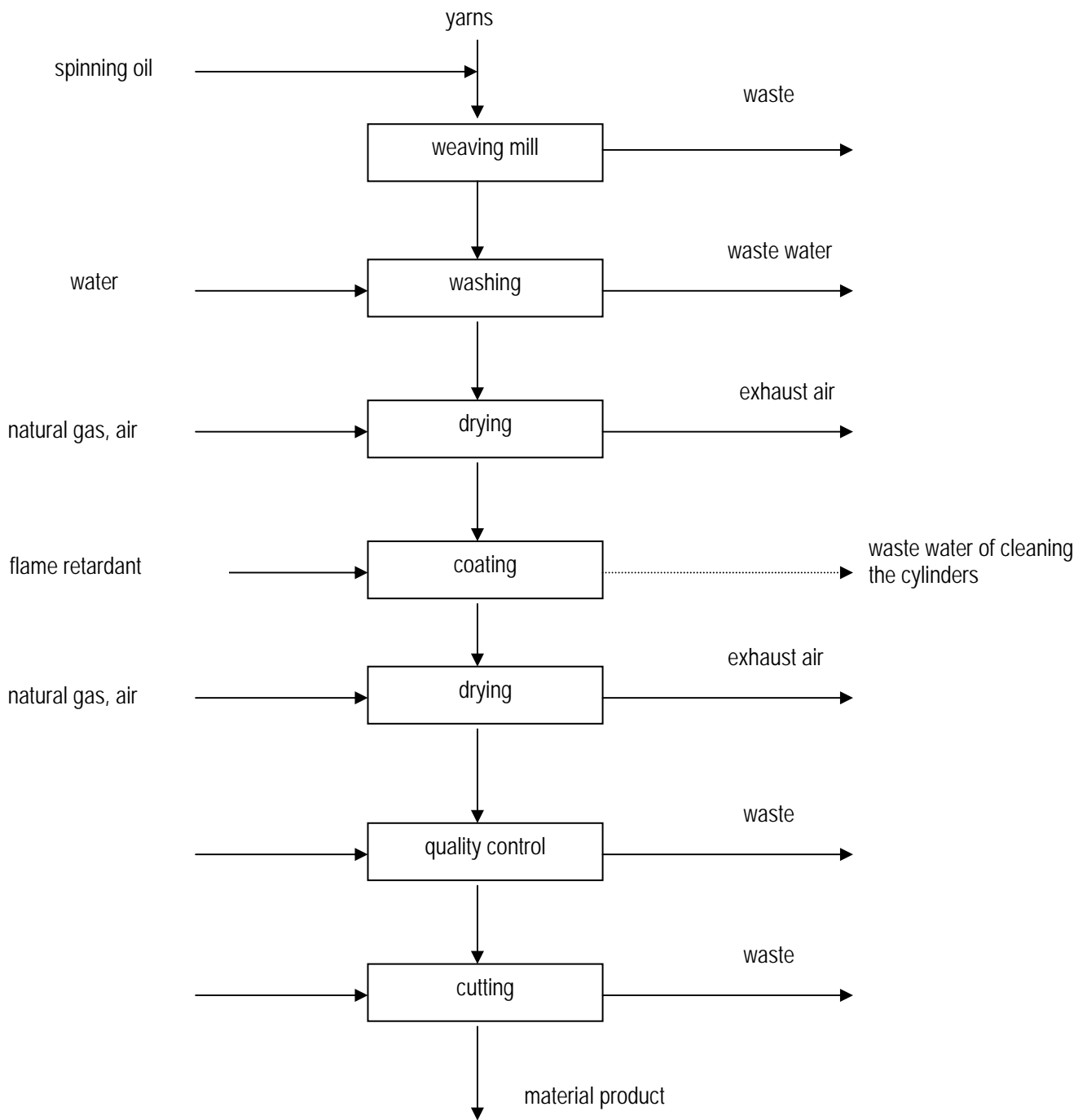
Input and Output 2005 and 2006

see attachment

Your task:

You were appointed the environmental representative of the company Hans Meier GmbH.

Group 1

Build up an environmental controlling system for the company Hans Meier GmbH. Concentrate on water supply and waste water.

The following problems have arisen:
You are allowed to emit a maximum of 300 mg/l spinning oil in the water!
According to the regulations, in the cleaning step no flame retardant must get into the sewer because it contains heavy metal. Furthermore you have to re-use the cooling water in the process.

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- analyse the environmental policy/set concrete targets for your area
- analyse the present data
- find indicators for your area
- define plan values for indicators taking use of your environmental targets
- make a deviation analysis
- propose measures to reach your planned values
- draft reports for the management and for the employees of your company

Group 2

Build up an environmental controlling system for the company Hans Meier GmbH. Concentrate on waste and logistics.

You have following problems: Your customer, who has recycled the textile waste of your weaving mill so far, does not accept it anymore, because of the high pollution with spinning oils. Consider also your quality problem! How does your material use look like?

- analyse the environmental policy/set concrete targets for your area
- analyse the present data
- find indicators for your area
- define plan values for indicators taking use of your environmental targets
- make a deviation analysis
- propose measures to reach your planned values
- draft reports for the management and for the employees of your company

<u>Group 3</u>

Build up an environmental controlling system for the company Hans Meier GmbH. Concentrate on energy supply and exhaust heat.

<u>There are following problems:</u> Your gas and energy consumption has increased because of the production of shorter lengths of products! How big is the shave of renewable energy supply in your company?

- analyse the environmental policy/set concrete targets for your area
- analyse the present data
- find indicators for your area
- define plan values for indicators taking use of your environmental targets
- make a deviation analysis
- propose measures to reach your planned values
- draft reports for the management and for the employees of your company

Good success!

Input/Output-Analysis

Input

	2005 amount Kg	costs PHP	2006 amount Kg	costs PHP
raw, auxiliary and operating material				
yarns	2 000 000	290 841 335	2 300 000	297 958 620
spinning oil	20 000	3 633 641.5	30 000	3 997 006
flame retardant	30 000	5 450 462.5	31 000	5 632 144.5
water				
cooling water	30 000 000		30 000 000	
process water	40 000 000		40 000 000	
energy				
current [kWh]	4 000 000	15 988 023.5	5 200 000	20 784 430.5
natural gas [Nm³]	1 000 000	7 267 283.5	1 500 000	10 900 925

Output

	2005 amount Kg	costs PHP	2006 amount Kg	costs PHP
products				
product	1 500 000		1 650 000	
textile recycling	300 000	profit 726 728.5	0	0
trade waste				
solid waste	200 000	2 180 185	650 000	4 360 370
of it:				
weaving mill			300 000	
quality control	100 000		250 000	
cutting	100 000		100 000	
waste water				
waste water	70 000 000	1 017 419.5	70 000 000	3 723 107
in it:				
spinning oil	20 000		30 000	
flame retardant	?	?		