

D6 Environmental management – Solutions

1

While it may be true that environmental protection incurs costs in the short term, ignoring environmental protection is also costly in the medium term – often even more so! This is because, in ignoring environmental protection measures, any number of opportunities could remain unexploited: energy and materials savings as well as the opportunity to gain a better positioning in the market through a good corporate / product image.

2

- a Individual solution.
- b Individual solution.
- c Individual solution.

3

Product/ Service	a) Life phase	b) Measure
Bicycle	Resource extraction	<ul style="list-style-type: none"> - Periodic maintenance prolongs the bicycle's life - Use environmentally friendly materials - Buy used bicycles
Mineral water	Transport/storage	<ul style="list-style-type: none"> - Tap water or water from the region - Use environmentally friendly transport (rail)
Asparagus from California	Transport/storage	<ul style="list-style-type: none"> - Prefer local seasonal products - Perhaps use environmentally friendly means of transport (train, boat)
Chlorine	Disposal	<ul style="list-style-type: none"> - Find alternative solution
Elevator	Usage	<ul style="list-style-type: none"> - Automatic lights - Promote using the stairs (fitness)
Heating system	Usage	<ul style="list-style-type: none"> - Better building insulation - Triple-glazed windows - Shorter airing-out in winter - Use environmentally friendly energy (heat pumps)

4

- a An aluminum chair is a resource-intensive product. Possible measures include:
 - Material choice: use alternative materials
 - Material savings: use less material through improved design
 - Increase the usable life of the chair by improving maintainability and reparability

b A car is a usage-intensive product. Possible measures include:

- Improve the functionality of the product (e.g., convertible with a firmly mounted roof, so that no second car is needed for the winter)
- Make maintenance and servicing easy and attractive
- Reduce consumption during usage (e.g., with an economical engine)
- Prevent waste during usage (e.g., use of individual pieces so that, in the case of an accident, large subassemblies don't need to be replaced)
- Safety measures to prevent accidents and thus of repair and material expenses (e.g., automatic lights, beep when temperatures fall below freezing, park distance control)

5

The energy savings might mean the students could be tempted to leave the lights on for longer, the teachers could request brighter light (100 instead of the current 80 watts) and the custodian could install more lights around the outside of the schoolhouse.

In addition, the teachers could ask for higher room temperatures, the students might leave the windows open for longer during breaks, and the custodian might no longer bother to keep lowering the room temperature over the holiday break.

6

Although the relative environmental impact has fallen by 20% through the use of advanced propulsion technologies, a greater absolute environmental impact appears to be quite possible due to the rebound effect. Thus, although increased by the lower fuel consumption, the eco-efficiency (relative improvement), it is quite possible that, for example, an individual who would previously have used a bicycle for transport might switch to a car, a motorist might end up driving more kilometers than before, or use the gain from the fuel savings to book a holiday in Australia. Thus, the ecological benefit has been more than offset.

7

Individual solution.

8

Individual solution. Suggestion:

a

1. Activity	2. Reduction measure
Getting to school	Ride a bicycle instead of a moped
Taking notes	Write on both sides of the paper

b

1. Activity	2. Reduction measure
Use of aids in the classroom	Prefer the use of the video projector over the overhead projector and slides
Movement within the school building	Take the stairs instead of the elevator
Use of documents	Make fewer copies and, when copies are needed, print on both sides of the paper