

## Wider issues of using cleaner technologies

*Cost implications to the consumer and manufacturer:*

- Clean technologies often have some financial benefit to the consumer in the long term
- The initial cost implications can be severe
- Cleaner technologies will usually need some form of investment in designing and manufacturing
- More efficient and less polluting machinery is needed

Sustainability:

*Designing without jeopardising the potential for people in the future to meet their needs:*

- Easy to dismantle for repair or reuse and so extending product life
- Easy to separate different materials for recycling
- Easy to remove components that must be treated separately for repair
- Use as few different materials as possible
- Mark the materials/polymers in order to sort them correctly
- Avoid surface treatments in order to keep the materials 'clean'

## Exam related questions

Evaluate the use of biofuels as a source of energy

### Advantages

- Renewable source of energy (1)
- Reduces the need to consume other finite resources (1)
- Environmentally friendly (1)
- Carbon neutral (1)
- 2<sup>nd</sup> 3<sup>rd</sup> and 4<sup>th</sup> generation bio-crops are more efficient for fuel production (1)
- Biofuel gives increased power over comparable vehicle fuel (1)

- Combined usage (1)

#### Disadvantages

- Ecological damage (1)
- Expensive to convert into fuels (1)
- Relatively low yield (1)
- Energy used in processing bio-fuels (1)
- Reduced land available for growing crops (1)
- Fewer MPG than normal fuels (1)
- Limited availability when refuelling (1)
- Unsustainable burden on available supplies (1)
- Systems modifications needed to use fuel (1)
- Biofuels still not reached maximum potential yet (1)