



United Nations Environment Programme
Division of Technology, Industry and Economics

Profiting from Cleaner Production

**Strategies and Mechanisms
For Promoting
Cleaner Production
Investments
In Developing Countries**



Training Techniques Guide



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Preface

Training involves a range of activities not just teaching. To complete a successful training course requires also managerial, administrative, organisational, design, presentation and evaluation skills.

There are four key courses in our Cleaner Production (CP) training:

Group 1 - Introductory Courses

- CP1 “Introduction to Cleaner Production Concepts and Practice”.
- CP2 “Introduction to Capital Budgeting and Funding of Capital Projects”.

Group 2 - Core Skills Courses

- CP3 “Cleaner Production as Profitable Investments”.
- CP4 “Cleaner Production Investment Process”.

Each will be supported by Instructor Guidance. Group 1 courses are to be offered as events and as self-study courses. Group 2 will be event-based courses.

The participant profiles differ for each course and thus the shape, content and outputs of the training will differ. Group 1 courses are introductory and assume the participants are only just aware of the issues. Group 2 assumes that participants have completed the Group 1 course or already have knowledge or experience of CP.

Note: We have used the word “module” to refer to part of a programme or course dealing with a particular topic. “Workshop” is used to describe a course that consists mainly of discussions, cases or a panel of experts on an identified area for study.

Introduction

1 The Learning Process

Learning

Learning is permanent change of behaviour, as a result of influences on an individual. Through training, this change involves enhancing awareness, knowledge, skills or attitudes.

If learning has really taken place, it has to be demonstrated by the learner. That is why throughout our CP courses we call the learner a “participant”. Participants learn by doing and taking part.

In all our training courses the objectives of any learning sessions are given in terms of change in something. At the end of a training session the participant may be:

- more aware (a greater awareness);
- more able (more skilful); or
- have greater understanding (clearer attitudes).

Who are the Learners?

In all CP training courses our participants will:

- Be adults, not students.
- Be already working and have experiences to tell.
- Be taking time away from the factory, laboratory or office to study.
- Have previously attended other training sessions, thus have experienced training before.

For trainers (designers or instructors) for this active audience the dangers are that:

- The overall stated objectives are missing or unclear and participants’ do not know if they should take time away from work to attend.
- The matters to be covered are not relevant to their work or they know them already.
- The situations used or illustrated are unrealistic to Zimbabwe, Vietnam or wherever.
- The participants get bored, because the level of the training is too slow or too low.
- The participants get impatient because the material is too complex, too theoretical or is delivered in a confusing way.
- The instructor lacks knowledge, interest or enthusiasm in the CP issues and problems.
- The training is for accountants or bankers, but the trainers have no practical or ongoing experience of either discipline.

Training designers and presenters must manage all these risks and others within the design and during the training events themselves. Most, however, can be anticipated and dealt with in the design.

Profile for Training

Thus in designing our CP training courses, the material and events must try to be:

- *Distinctive*: Learning approaches are designed to be original and relevant to CP Issues.
- *Targeted*: Nothing is included which does not fulfil an agreed learning objective.
- *Participative*: Attendees learning by doing and sharing their own experiences.
- *Varied*: The training is not just a series of presentations.
- *Imaginative*: Points are illustrated, not just stated.
- *Intimate*: Class sizes are small, rarely more than twenty or intimacy created within a large group.

2 Techniques Recommended for CP Training

Introduction

All the participants to the CP training courses will be adult working people. All will have attended training courses before and will have expectations and preferences of how training should be done.

Whichever training methods are selected, the trainer (designer or presenter) has to address the following:

- How do I activate the learners' interest and motivation to learn?
- How do I deal with the different speeds and styles at which people learn?
- How do I get the individual learners involved in the learning and keep them involved, *i.e.* to participate?
- How do I know whether they have understood?
- How do I promote the use of what is learned back at work?

Rule number one is to give them a bit of what they expect. In our participating countries, lectures and presentations are accepted as an important part of training. We will thus be using these, but will introduce other methods to achieve different objectives.

The following are the main training approaches we will be proposing when designing event based training:

1. Illustrated Presentations
2. Discussions Questions
3. Long and Short Case Studies
4. Role-Plays
5. Panels of Experts
6. Self-Learning Courses

In addition we will be using self-learning techniques for the self-study courses or for individual preparation before training or post event follow-up study.

Here are some observations on the five teaching approaches. In appendix 2 you will see a training design which has made use of most of these in a one-day course.

1- Illustrated Presentations

The presentation is still the most commonly used teaching method in most countries. It is particularly suited:

- For large groups of learners.
- When time is limited.
- Where the learners have little knowledge of the topic, such as the introduction of a new concept, law or technique.

It allows the instructor to control the learning and is the approach with least risk of failure. However, using only the lecture has limitations:

- It relies on one sense only, listening.
- It offers little chance for the learner to participate.
- It is difficult to determine whether anything is being understood and learned.

To overcome these limitations the designer can introduce some form of active or passive participation e.g.:

- Provide key notes, with which the participants can follow the presentation.
- Include short questions for the participants to answer, before or during the presentations.
- Illustrate the presentation, using slides, videos or diagrams.
- Provide specially designed notepaper for taking notes.
- Monitor understanding by asking if participants have followed and understood.

An example of the structure of a presentation will be illustrated in Section B of the Guide.

2- Discussion Questions

Discussions help participants consider and think about a particular aspect of their work and tell of their experiences to others. This technique is particularly useful for CP courses, as many of the learners will have had work experience related to CP issues.

Discussion questions and topics can be used to:

- Increase understanding of the issues.
- Appreciate reasons for changes.
- Agree a plan or course of action.

However, discussion questions need to be carefully designed. We also need a clear objective as to why we are asking the questions and what we will do with all the answers we get. They also provide inputs for modules later in the course.

3- Long and Short Case Studies

A case study is a record of a real life situation, together with the related facts and perhaps opinions, presented to the participants for analysis, discussion and decision on the action that they might take.

The CP project has completed many demonstration cases and these will be available to international and national training designers.

A case study requires to:

- Be relevant to the work or situations experienced by the participants.
- Be based on events that did or could have happened.
- Contain events or matters on which opinions may differ.

Most of our demonstration cases will be too long and complex to use in one teaching situation. Designers will be required to select parts, based on the specific objectives of the learning.

4- Role-Plays

In role-plays, the learning is designed so that the participants are given a situation in which they are required to solve by acting the roles of the people in it. Role-plays in training help participants to:

- Acquire awareness and knowledge of human behaviour.
- Develop skills in face-to face situations.
- Develop acceptable attitudes.

CP role-plays could simulate for example:

- An enterprise management team, meeting to discuss CP investment benefits.
- A bank's credit committee, meeting to discuss three CP investment proposals.
- A meeting with government officials, to persuade them of the benefits of CP investments.

Role-plays are particularly suited to afternoon sessions where the attention span is shorter.

5- Panel of Experts

Holding a panel discussion or debate is particularly suitable for dealing with issues raised by individual participants. Knowledge and experiences within the participant group can be shared.

The "experts" can be selected from within the participant group, or outside people invited to join the panel session.

Questions for the panel are collected from the participants before the panel session, classified into topic groups and the panel session then designed. A Chairman for the panel can also be appointed from the participant group.

Panels are one of easiest sessions to hold, but one of the highest risks of failure or disruption to other sessions. Again they are particularly suited to afternoon timetables where the attention span is shorter.

6- Self-Learning Courses

Self-learning or flexible learning courses are courses where learners work at their own pace on a prescribed piece of work.

This form of course allows the participant to learn when they want (frequency, timing and duration) and where they want (home, office or training-centre). People can thus study CP1 when they have need to do so, rather than when a course is being held.

In our courses there are two such options in CP1 and CP2. These are introductory courses to CP3 and CP4.

The continuous advance in information technology also allows a greater flexibility in how they can learn. Interactive learning is now common, allowing someone studying physically on their own to communicate with others or a computer to enhance the learning.

Our two courses will not be interactive, but will be available on diskette and via Web sites which reduces the cost of paper, postage and as in some countries, toner for the printer.

Overall Training Design

Although the final design of the training has to be left to those directly involved in the topic and place, experience in presenting similar courses, a particular training approach has been found to be successful.

This involves the material having:

- A clear definition of the learning objectives.
- A modular structure dedicated to identify study areas.
- Keynotes for the participants.
- Reinforcement of learning by use of case studies and discussion questions.
- The opportunity for the learners to participate and contribute on most occasions.
- Continuous evaluation of objectives being met and acceptability of training by participants.
- Having follow-up self-study material for those who wish it.

For the event-based training, short instructor-led presentations are also required for each major learning area. Appendix 2 illustrates this approach.

The remainder of the Guide is based on using this format.

Designing the Training Programme.

The design of a training programme requires a team approach. For Cleaner Production Investment we need the guidance and advice of three groups of people.

1 Subject Experts

- Cleaner Production expert, who may also be one of the instructors.
- An expert in investment proposals and funding of projects.

2 Participant Representatives

- A representative of the organisation for whom the training is being developed to advise on the participant profile and needs.
- A future participant of the training, to give the view of needs from the employee viewpoint and learning preferences.

3 Training Experts

- A training programme designer, to shape the needs into learning experience.
- A training administrator to advise on timing, accommodation and facilities.

In our programmes certain of these roles may be combined.

This team must:

1. Establish the participants training needs.
2. Set the training objectives.
3. Design the appropriate programme, what we call the macro design.
4. Design and write individual modules or sessions within the programme, the micro designs.
5. Determine the performance criteria by which the success of the training will be measured.

We will look at each of these five stages. Reference will be made to the appendices in the Guide. These are examples and checklists to help members of the team in their different roles.

1 Establishing the Training Needs

This research phase establishes what the participant is being trained to achieve. We must establish what the participants already know or are able to do before the training. We need only revise what they already know. This is often referred to as “the entry conditions“.

This requires the Training Designer to:

- Question those responsible for requesting the training.
- Undertake some form of survey of future participant’s own perceived needs and current knowledge.
- Review the content and success of training held in past on CP or related subjects.

The research should not only identify the areas for training, but also, as time is always scarce, give some priority to them.

An example of this research is given in Appendix 1, using CP2 “Introduction to Capital Budgeting and Funding of Capital Projects”.

The training designer here identified the key subject areas. Our participating countries experts then prioritised these as to importance and the current level of awareness and knowledge of the future participants.

This was the basis for establishing the training objectives and the start of envisaging how these could best be achieved.

2 Set the Training Objectives

A training objective is a concise but clear statement of what the participants should be able to do at the end of the course or session.

Example: Training objective for an illustrated presentation might be:

“By review of the current Cleaner Production techniques available in Tanzania, give the participants an understanding of the range of options in use in the country.”

The training objective must always be written in terms of “ends” not “means.” It is not an objective to make a presentation or hold a case study. These are a means by which we achieve an end, in this case “understanding.” Objectives must define some change in behaviour or way of doing things.

Examples could be:

“At the end of this training programme on Capital Budgeting, the participants should:

- *Appreciate the need for.....* (Awareness and attitudes objective)
- *Be familiar with.....* (Awareness and attitudes objective)
- *More fully understand.....* (Awareness and attitudes objective)
- *Be more knowledgeable on.....* (Knowledge objective)
- *Be able to.....* (Skills objective)
- *Demonstrate ability to.....* (Skills objective)”

In a two-day programme there will be one overall learning objective, but more specific learning objectives for each section or day.

The objective for a two-day programme could be:

“By study of national and international practice, develop a sound understanding of and selected skills in Capital Budgeting.”

While the objective for a particular session might be:

“At the end of this module the participants should have a sound understanding of how the pay-back method can be used in assessing the financial viability of a CP project.”

To meet the objectives we must also incorporate some test or evaluation to determine whether the participants do “appreciate”, “understand”, “are more knowledgeable on” or “are able to”.

We will look at this later to determine the performance criteria by which the success of the training will be measured.

3 Design the Training Programme

Having established the course objectives the training designer must now shape the course. Let us assume that we are designing a two-day course programme.

There are six stages to what we call the “macro design”. These are:

- A - Identify the subject material to be covered in the two days.
- B - Sequence the material in the most appropriate order for logical learning.
- C - Choose the learning (training) methods.
- D - Decide on the time needed for each training activity.
- E - Prepare the macro design of the course.
- F - Establish the programme’s physical requirements - who and what we will need to complete the programme.

In Appendix 2 you will find a sample macro-design for the course on Cleaner Production concepts and practices. We will use this to identify the various stages of the design process.

However, before we begin the stages we must recognise that in all training there are limiting factors which will impact the shape of the event and how the content is dealt with. Here are some examples:

- If the participants can only attend four afternoons rather than two full days, then you have a different event even if the time available is the same.
- If one hundred participants wish to attend, then it’s a very different training event than if only twenty are present. Each can be very successful, but they have a different design.
- If the course has to be held in a venue that has no blackboards or screens, this will change the design of certain sessions in the course.

Stage A – Select the subject material to be covered

The objective of the course determines the subject material. In our courses the main subjects are Cleaner Production and Cleaner Production Investments.

In consultation with the subject experts the training designer must decide:

- What topics or areas are to be covered in this very large subject in two days?
- For what reason (the objective)? Do the participants need to be able to undertake analysis work or only be aware of how it is done?
- What do the participants know already about this?
- How long do we wish to spend on one other area?
- Will there be follow-up learning? We may include some parts for self-study.

Stage B – Sequence the material in the most appropriate order for logical learning

Most topics can be sequenced in some logical order. This may be:

- From easy to complex, as related to the topic.
- For ease of learning - simple to start with, then more difficult.
- According to the order in which a task is done.
- Skills development sequence to highlight progressive mastery of the skill.

For example in the course illustrated in Appendix 2 the sequence is:

- A short introduction to the issues. Listening, but not for long.
- Discussion questions – break the ice and finding out what people know about Cleaner Production. Time is allowed to hear from the participants.
- Illustrated Case Studies – a chance to experience the use of concepts in a practical situation.

This is the structure from “easy to complex,” based on understanding that the participants know the general area of the subject.

Stage C – Choose the main instruction and learning methods

Earlier in the Guide we described the main methods of instruction which we are planning to use in the CPI training. These are:

- Illustrated Presentations,
- Discussion Questions,
- Case Studies,
- Role-play,
- Panel of Experts, and
- Self-Learning.

Which is chosen and where, depends on a range of issues. These include:

- The nature of the topic.
- The current knowledge of the participants.
- The skills of the instructor. Not all are comfortable to run a role-play.
- The expectations of the participants, what they are comfortable with.
- The time of the day. Avoid presentations after lunch.

In selecting the methods of training to be used, variety during the week or day is also important.

Stage D - Decide on the time needed for each training activity

Estimating how long it will take can be difficult. This is particularly true of discussions and case studies. Because the instructor controls the presentations, time is easier to measure.

We will look at this later in the design and time issue of one session but remember:

- Training always takes longer than planned. The most successful learning sessions over-run. This is particularly true with adults, who ask more questions and are better participators.

- Avoid giving the participants a detailed timetable. The instructor has one, but can change it without appearing unplanned. Put in the day start and close times and perhaps the lunch break, but leave the session times open on the participant programme.

When you write the Instructor's notes (see next section) you may have to change the timing. Changes to the time plan are common at this planning stage. In Appendix 2, an example of timing for one day of training is given.

Stage E - Write the Macro Design of the Course

The most important work of the Training Designer is the developing and writing of the macro design for the course.

This documents:

- Why the course is being held
- For whom it is being held
- The training philosophy
- The entry requirements
- What is to be covered
- How it is to be taught
- How long it will take
- How and when it will be evaluated

In Appendix 2 there is an illustration of the macro design for a course "Introduction to Cleaner Production Concepts and Practices".

The macro design highlights the overall structure of the programme. Each section has its own detailed plan. This is called the micro design and determines what will happen in each individual session. We will look at this in part 4.

Stage F - Prepare the Course Requirement Lists

When we have completed all the previous five stages, we now know what the training aims to achieve and how we wish to accomplish it. Now we need to make it happen.

This final stage can be divided into two areas:

- 1 Training Material (See the next section for Guidance)
 - Preparation of the detailed instructor guidance and file.
 - Production of the teaching material and participants notes.
- 2 Training Event
 - The accommodation and equipment requirements. In appendix 3 we have included two checklists for guidance.

4 Design and Write Individual Modules or Sessions (Micro Designs)

In designing the individual modules for the training programme, various delivery approaches and techniques have been proposed. These have been selected to suit adult learners and the overall goals of the training programme. The designing and writing the micro design requires the trainer to:

- Identify relevant and suitable training material.
- Identify different ways of using this material in training sessions.
- Shape these into an appropriate training approach.
- Build in monitoring or feedback techniques to ensure understanding.
- Finally write and edit the training material.

The three most common techniques we will be using will be:

- 1 Illustrated Presentations
- 2 Discussion Questions
- 3 Case Studies

These are illustrated below and an example of each is given. However if you believe that another approach is preferable you could develop this. We selected these three as they are familiar to most trainers and require a minimum of technical support.

1 Illustrated Presentations

The illustrated presentation will be the main method by which new knowledge or understanding will be communicated to participants. There is at least one presentation in each day of the course.

For the training the content will tend to be:

- Introduction to new laws or regulations.
- Introduction to or explanation of new or changing skills requirements.
- Demonstration of new approaches.
- Illustration of new working methods.

Most presentations are timed to last a maximum of about 45/60 minutes. This means 30 minutes of presentation and 15 minutes for stops, questions and participant thinking.

To develop a presentation you will need to think about:

The Objective

Write down clearly in less than thirty words the objective and output of the presentation. What will the participants know or be able to do at the end that they were not able to do before the presentation?

Example: *Objective from Module CP4*

“By review of the new Tanzania budget reform proposals, permit the participants to identify the additional financial benefits for CP Investments.”

The Material

- Collect together the body of knowledge you wish to pass on to the participants.
- Decide whether it can all be presented or should be given to read as self-study.
- Select at least three examples or stories to tell within the presentation.
- Decide what you wish the participants to get by way of notes or handouts.
- Decide what you want to show visually – slides, diagrams etc.

If we analyse the presentation it has been divided into six phases:

- An Introduction and Objective Phase.
- A First Facts and Illustration Phase.
- A First Observations or Questions by Participants Phase.
- More Facts and Illustration Phase.
- A Second Observations or Questions by Participants Phase.
- A Closing and Final Questions Phase.

Even in a presentation the participants can be involved, in this case on three occasions.

Giving Presentations

All instructors will need some notes, whether they use cards or paper. The notes not only help the instructor keep to the objective; they also can act as the key points to be handed out before or after the session to the participants.

Some points on good practice follow:

Instructor Notes

- Make sure you can read them.
- Break them into headings and subheadings.
- Use double spacing.
- Use colour for headings to highlight key points.
- Number each page or card.
- Make notes on the margin to remind you of timings and slides.

If you have the time practice the presentations before to familiarise yourself with the presentation and to build up your confidence.

Question Time(s)

If your presentation is interesting participants will ask questions. Instructors must decide when they will fit in question time. There are three options:

- Random, where any participants can stop the presentation and ask a question
- Periodic, at the end of each phase
- At the end.

Random is suitable for small groups studying complex issues. This approach is not recommended for groups of more than ten participants.

Periodic is useful where the presentation has various parts (as in our example above).

Questions *at the end* allow the instructor to control the questions and the presentations to run smoothly. However, if the participants do not understand the issues at the beginning waiting to the end will be too late.

Dealing with Questions

Questions from participants are important signals of their interest and that you are not meeting your objective in the presentation. No matter what the nature of the question:

- Listen carefully to it
- Thank the questioner
- After thought, answer concisely.

If you do not know the answer, better say so. It may be that the regulation has not been written, or that you have not had experience of the issue in the question. However,

always indicate that you will find out the current position and respond to the questioner afterwards.

Ensure that all participants who wish to ask questions have the opportunity. Avoid having one or two persons asking all the questions and dominating the group.

Make yourself available at lunch and refreshment breaks to answer additional questions.

2 Discussion Questions

The objective of short discussion questions is to:

- Introduce, in an active way, the main topics or skills of any module.
- Allow the participants to discover for themselves what the module or topic is about.
- Provide the participants with a chance to show what they know and give their view on things.
- Give the Instructor the opportunity to find out the level of participants' understanding of the issues.
- Allow participants to learn from the other participants.

Structure of the Short Discussion Questions

Short case studies consist of two parts:

A - the issue part: the story or situation.

B - the question part: what we want the participants to do with the story.

Example

A The Situation or Issue

The directors of XY tanners wish to improve their reputation as a Clean Production organisation. In the past neighbours have complained that they are very dirty indeed.

B The Question

How should XY go about improving their reputation and image?

Guide to designing short discussion questions

- The situation should be short (no more than fifty words).
- It should describe a real life problem related to a subject of the session.
- Limit the time taken. Examples - ask for say four suggestion from each group.
- The questions should be open - ask what, or who or why or how, or where, or by whom.
- Avoid a question which start with "do" or "does". The answer will always be "yes" or "no" which is not a discussion.

Each answer gives the instructor the opportunity to confirm the participants' insight and grasp of the issues. .

3 Case Studies

A case study is a description, of an incident, or event, of an individual or organisations, describing what happened in a particular situation. Unlike discussion questions the answers need to be developed through some form of analysis.

In a training context, the purpose of a case study could be to:

- Make individuals familiar with the reality of decision-making in organisations.
- Sensitise them to certain problems and issues encountered in policymaking.
- Help to analyse complex problems.
- Test application of certain solutions.
- Encourage or discourage certain types of behaviour or practices.
- Test relevance, application of certain theories and approaches to practical problems.

Our case studies will tend to follow the main presentations and will build on the concepts and information given them.

A case has generally the following structure:

A- the title: in our case perhaps the name of the CP Investment approach.

B- description: this is the main issue of the case. It is here that the story in the case is narrated.

C- a series of questions: Two or three questions will be asked to make the participants think about certain problems and issues in the case, try to analyse the problems with the help of theoretical knowledge and analytical techniques provided earlier in the training programme.

Hence the specifics of the questions are very important. Contents of these questions depend on the use to which the trainees will put the cases. They are generally structured to bring out different reactions of participants, their judgement on the behaviour of important actors or their actions, draw some lessons from the case for future decision-making.

Sometimes model answers to the questions will be given but this depends upon the nature of the situation discussed in the case and the type of questions.

5 Determine the Performance Criteria for Measuring the Success of the Event Based Training

Measuring success of training is done for three purposes – to prove the event happened, to learn from the event and to improve future events.

Measuring can be undertaken in four ways:

1. Measuring the results in terms of some numbers - quantitative
2. Measuring in terms of acceptability - qualitative.
3. Measuring in terms of benefits - qualitative.
4. Measuring in terms of impacts - qualitative.

1 Measuring the results in terms of numbers

This quantitative form of evaluation is based on inputs or values spent, either in time, money or other resources spent.

Results or numbers include:

- Number of participants attending.
- Number of absentees.
- Number of training courses provided.
- Number of training documents issued.
- Number of hours spent developing training.
- Number of hours in actual training given.
- Amount of money invested in the course.

The information is collected and analysed by the givers of the course. The data comes from the management information system of the course organisers.

It proves the facts of the course events. Various ratios can be calculated and comparisons made with past or similar training programmes. Alone it does not tell us if the participants valued or benefited from the course.

2 Measuring Acceptability

In the qualitative evaluation we are measuring whether participants liked the programme and whether it met their immediate expectations.

Two issues are involved in any evaluation:

- Criteria of measuring the courses or modules, and
- How to give the criteria a measure or value.

The evaluation criteria would cover the:

- Course Programme
- Instructor knowledge of the subject
- Delivery of the course
- Administration of the course.

Examples of Acceptability Criteria and Measurement:

Criteria	Measurement
- Course	- Successful or Unsuccessful
- Usefulness of training sessions	- Agree or disagree
- Rank the instructor's knowledge	- Scale of 1 to 5
- Subject or Topic	- We would like - a lot more, more, less, or a lot less, of a topic
- Covering a subject	- Poor; satisfactory; good: or excellent
- Quality of Accommodation	- Low, Moderate, high, very high
- Usefulness of topic	- Low, Moderate, high, very high

By adding up the opinions, we get a measure of acceptability.

3 Measuring Benefits

Whether a participant benefits from training may take a month or a year to measure. Thus a questionnaire and/or an interview may need to be completed some time after the event. The criteria may be:

- Better job performance.
- More confidence in undertaking work.
- Better evaluation by superiors.
- More interest in the work and reform changes (job satisfaction).

- Change in work habits.
- Becoming more efficient.

4 Measuring Impacts

The most difficult to measure is the impact of the course. This may affect not only the participants, but also their organisation.

Thus impacts measure such wider criteria as:

- Nature and skills of present staff.
- Better recruitment policies.
- New and better ways of working.
- Way that CP is seen in the organisation.
- Wish to attend further training events.

Impacts can go beyond the stated objectives of the training courses.

Appendix 1 Needs and Current Knowledge - Project Course Analysis

CP2 “Introduction to Capital Budgeting and Funding of Capital Projects”

<u>Topics</u>	<u>Priority</u>	<u>Current Knowledge</u>	
	<u>A,B,C</u>	High. Medium, low	
1. Introduction to Capital Budgeting	A	M	
Current National Environment for Capital Budgeting	A	M	
Time Value of Money	A	M	
2. Role and Needs of Banks in Funding Capital Equipment.	A	L	
3 Preparing a Capital Budget – Basic	A	L	
Preparing a Capital Budget for a Cleaner Production Investment	A	L	
4 Costing Issues in Cleaner Production Capital Budgets	A	L	
5 Methods of assessing Capital Investment Proposals			
- Pay Back Method	A	M	
- Net Present Value Method	B	L	
- Internal Rate of Return	B	L	
6 Deciding on Alternative Sources of Capital	A	M	

Appendix 2

Example of a Course Macro Design

1 Course Title

CP1 "Introduction to Cleaner Production Concepts and Practices"

2 Course Objective

At the completion of this study programme the participants will have sound understanding of :

- Evolution of environmental strategies, concept of sustainable development;
- Basic concepts of preventive environmental approaches;
- Methodology of Cleaner production (CP) implementation in industrial enterprises;
- How to develop and implement Cleaner production project.

3 Participant Profile

This training is to be offered to:

- Managers, engineers and finance people in industry and commerce, in particular those responsible for business strategy, product development, plant operations and finance;
- Government officials, both central and regional, who play an important role in promoting Cleaner production;
- Media representatives who play an important role in disseminating information on good environmental practice.

No prior experience in CP is required.

4 Training Course Length

1 day

5 Available Training Materials

- Slide presentation
- 4 short case studies
- 2 group work exercises

Additional available material:

- 8 page illustrative booklet
- Cleaner Production guidance checklists

Available material for trainers:

- Trainer's guide

6 Overall Training Concepts

- A clear definition of the learning objectives.
- Module structure dedicated to identified study areas.
- Instructor led illustrated presentations.
- Key notes for participants.

- Reinforcement of learning through cases studies and discussion.
- Available follow-up self-study material.
- Continuous evaluation of objectives and acceptability of training by participants.

7 Course Design

Time		Format	Suggested time in minutes
8:30	Registration		
9:00	Introduction to the programme – participants' introduction.	Presentation	20
9:20	Short welcome presentation by a senior official. Cleaner production worldwide.	Presentation	20
9:40	Evolution of environmental strategies. Basic concepts of preventive environmental approaches.	Presentation, short discussion	50
10:30	Break		15
10:45	Cleaner production: practices, presentation and discussion of the 4 case studies.	Presentation and discussion of cases	60
11:45	Cleaner production benefits and barriers, procedures	Presentation and discussion of cases	60
12:45	Lunch break		60
13:45	Cleaner production project development in industrial company: problem identification; generation of ideas. <i>Group work 1</i>	Group work	30
14:15	Presentation of the group work results and discussions.	Presentation and discussions	10
14:25	Break		15
14:40	Cleaner Production contribution to main stakeholders: governments, financial institutions.	Presentation and discussion of cases	60
15:40	Cleaner production project development in industrial company: feasibility analysis / evaluation of possible solutions; Cleaner production investments. <i>Group work 2</i>	Group work and discussions	30
16:10	Presentation of the group work results and discussions.	Presentation and discussions	10
16:20	Programme evaluation	Evaluation process and discussions	20
16:40	Review and close the programme		10
	Total time in minutes		470

Appendix 3 Course Accommodation and Equipment Checklist.

1 Accommodation

The selection and suitability of the accommodation can have a major impact on the success of any training course. Keep in mind that many of our courses are being held outside the capital city, in government buildings or perhaps a school or college. Trainers have many stories of disasters with accommodation. These include

- Not finding the venue.
- Finding it closed.
- Finding it being used by another training group.
- Finding it too small or far too big for the group.
- Finding it without power or light.
- Having no toilet or washing facilities.
- Having no telephone or fax.

This checklist is to assist training administrators and instructors avoid these embarrassing problems.

Accommodation Checklist

	Yes	No
A Before the Training		
Did you inform all participants about time and venue of the training?		
Did you send relevant material beforehand to attendees?		
Did you tell participants to bring along a calculator?		
Has the accommodation been reserved and confirmation received in writing?		
Has someone visited or used the accommodation recently to evaluate its suitability?		
Will the building and room be open one hour before the training is to start?		
Will there be someone available to help with furniture moving if required?		
Have the equipment requirements been notified to the person in charge of the facility or building?		
Will a notice be placed at the front entrance telling participants where the training is to be held?		

B On Arrival at the Building		
Is the notice announcing the room number and start time in place?		
Is the room open and can you retain a key for the duration of the training for security reasons?		
Is the power and light working?		
Is there enough and suitable space for your training?		
Are there toilet facilities close by and do you know where they are?		
Is there a fire escape facility and do you know where the nearest safe exit is?		
Is there a telephone available for participants to use?		
Is the overhead projector in place and does it work?		

	Yes	No
C Before the Arrival of the Participants		
Are the course documents available or are they still in your car?		
Do you have a list of the names of the participants?		
Do you have the documents certifying their attendance if this is required?		
Are all participants' introductory notes available for the first session?		
Is your introductory presentation ready and can you start on time?		

2 Equipment

Most of our training will be limited to using three teaching aids.

- Overhead Projectors and slides
- Chalkboard or white boards
- Paper Flip Charts

This checklist takes the form of a guidance document for using these three training aids.

Overhead Projectors

These should be available, but ensure that someone else is not using them. Overhead projectors have the following advantages:

- The instructor faces the participants.
- Slides can be prepared ahead and time is saved during the training.
- Instructors can speak and write seated.
- Slides allows for the use of colour and other visual effects.
- The room need not be dark.

The disadvantages are:

- The water-based pens smudge easily and always dry out.
- The electricity power can fail.
- Screens are not always available and a wall has to be used.
- The cooling fans often make a great deal of noise and distract participants.
- The light from the projector is hard on the instructor's eyes.

Guide for Instructors using overheard projectors:

- Test the pens to ensure they are water-based and they have not dried out.
- Test the projector before the presentation starts and make sure it is in focus.
- Keep the slide simple, only have the key words on it.
- Have the slides in the correct sequence.
- Look at the slide and the participants, not at the screen.
- Do not obscure the slide image with your body.
- Switch off the projector when it's not in use.

Chalkboard and White Boards

Chalkboards have three advantages:

- Usually available.
- Inexpensive.
- Require no advance preparation.

There are many disadvantages:

- The instructors have to turn their backs to the group.
- The instructors speak to the board, not the group.
- The writing or diagrams can only be visible from a close distance.
- The chalk squeaks, which touches the nerves of some people.
- They are dirty and messy to use.

Guide for Instructors using chalkboard:

- Check the size of the writing. You may be able to read it the participants not at all.
- Print in block letters if your handwriting is difficult to read.

- Clean the board of old and irrelevant material.
- Use clear colours; avoid reds and dark colours.

White or plastic boards

These are an advance on chalkboards as:

- You can use colours.
- Writing is smoother and silent.
- It is bright clean and looks better.

Disadvantages are:

- The pens dry out.
- Wrong types of pens are used which leave permanent marks on the board.
- Plastic boards scratch easily.
- The smooth surface requires the user to develop a different style of writing.

Flip Chart (Newsprint paper)

If available these have some advantages over chalkboards. These are:

- The content on the chart can be prepared ahead of the presentation.
- They can be used again for the same presentation elsewhere.
- They are clean and easy to use.

The disadvantages are that:

- They have limited space on which to write.
- They are expensive if paper is in short supply.
- They are easier stored rolled up and thus curl when used.
- Paper tears easily and deteriorates.

Guide for Instructors using Flip Charts:

- If there is no stand available, you can make one from two chairs.
- Stand at one side when using the charts.
- Conceal the top chart with a blank sheet until ready for use.
- Role the sheets over the top of the stand to avoid them being damaged.
- Use the back of the charts if paper is in short supply.

Where to go for further information

Training material:

To meet the training needs various assistance sources have been developed:

- Short Presentations for senior executives, in the form of 45 minute briefings:
 1. “Profiting from Cleaner Production” CP EXEC 1 – for business leaders;
 2. “Profiting from Cleaner Production” CP EXEC 2 – for bank executives;
 3. “Profiting from Cleaner Production” CP EXEC 3 – for government officials.

ISBN: 92-807-2200-X

- “Profiting from Cleaner Production – Towards efficient resource management”. An 8 page illustrated Booklet. ISBN: 92-807-2199-2.
- “Profiting from Cleaner Production – Checklists for Action” A set of checklists for businesses, government, and banks to facilitate financing Cleaner Production investments. ISBN: 92-807-2202-6.

Web Sites:

- UNEP/DTIE Cleaner Production:
www.uneptie.org/cp
- UNEP/DTIE Cleaner Production Financing:
www.financingcp.org
- United Nations Industrial Development Organisation:
www.unido.org
- Sustainable Alternatives Network (SANet):
www.SustainableAlternatives.net

Cleaner Production related publications:

- **“Cleaner Production: A Guide to sources of Information”** The fourth edition of a popular resource which lists where and how to find organisations, publications, electronic resources, training courses, etc. on Cleaner Production. ISBN: 92-807-1696-4
- **“Financing Cleaner Production: A Study on Past Investment Practices”** The results of the first phase of a UNEP project on strategies and mechanisms for promoting Cleaner Production investments in developing countries. ISBN: 92-807-1951-3
- **“International Declaration on Cleaner Production”** The implementation guidelines for Declaration signatories offer over 300 activity suggestions meant to assist the implementation of the six Declaration principles. Three volumes. ISBN: Companies: 92-807-2094-5, Government: 92-807-2093-7, Facilitating org.: 92-807-9095-3.

All publications can be ordered online at www.earthprint.com

This document is a teaching guide, developed by UNEP DTIE to assist trainers. It comes as a complement to a comprehensive series of training courses to promote the integration of preventive strategies and efficient resource management into investment decision-making processes. The objective of this Guide is to:

- Provide a structure for the design and development of the UNEP Cleaner Production (CP) training courses.
- Provide a reference when deciding on the best approaches and techniques for the designing of the training courses.
- Document a proven approach to training of adult learners in developing countries.
- Help further develop the training design skills of those National experts nominated to prepare training in Cleaner Production Investments.
- To act as a reference during train trainers workshops and training sessions.

There is a variety of information and advice available from the
United Nations Environment Programme at:

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