Life Cycle Management

a Business Guide to Sustainability

Delegate’s Manual for Session I:
Introduction to Life Cycle Management

November 2006
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Context & Introduction to Training

Training Session Booklet 1 (Delegate): Introduction to Life Cycle Management is companion to a set of training slides, and supporting booklets for both trainers and delegates and is intended to support a training session on Life Cycle Management (LCM). (A list of these materials can be seen on the next page.)

Life Cycle Management is a unique framework of concepts, techniques and procedures with the goal of creating sustainable development. Rather than focusing specifically on environmental, social or economic impacts and/or benefits, LCM combines a variety of tools and approaches to look at all of these factors, how they are interconnected and how to best address these issues throughout the product or material’s life cycle. How these factors are weighted and balanced will depend on what is important to the organisation responsible for the management and what is deemed the most important issues throughout the product’s or material’s life cycle.

This training kit presents the central messages of Life Cycle Management in a format accessible to a broad audience. The training kit will present LCM in four topics:

- Introduction to LCM
- How LCM is Used in Practice
- Communicating LCM Results
- LCM & Stakeholder Expectations

LCM practices relevant to less developed countries will be emphasised within each of the four topics.
## Training Materials List

The *Life Cycle Management a Business Guide to Sustainability Training* materials are comprised of the following resources for Trainers and for Delegates:

### For the Trainer

- Trainer’s Manual: Introduction, Case Studies & Resources
- Trainer’s Manual for Session I: Introduction to Life Cycle Management
- Slides for Session I: Introduction to Life Cycle Management
- Trainer’s Manual for Session II: How LCM is used in Practice
- Slides for Session II: How LCM is used in Practice
- Trainer’s Manual for Session III: Communicating LCM Results
- Slides for Session III: Communicating LCM Results
- Trainer’s Manual for Session IV: LCM and Stakeholder Expectations
- Slides for Session IV: LCM and Stakeholder Expectations

### For the Delegate

- Delegate’s Manual: Introduction, Case Studies & Resources
- Delegate’s Manual for Session I: Introduction to Life Cycle Management
- Delegate’s Manual for Session II: How LCM is used in Practice
- Delegate’s Manual for Session III: Communicating LCM Results
- Delegate’s Manual for Session IV: LCM and Stakeholder Expectations

This document
Overview of the Training Program Session

I. Introduction to Life Cycle Management

Learning Objectives for Session One

This section will provide users with a good understanding of the theoretical basis of LCM and its history. Participants should be able to answer the following questions by the end of the session:

- What is a life cycle – impacts and value created along the life cycle of a product of service?
- What makes LCM unique from other approaches?
- Why LCM is needed in business and in government?

Outline for Session One

<table>
<thead>
<tr>
<th>Day One</th>
<th>Session One</th>
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<tbody>
<tr>
<td>08.00-08.30</td>
<td>What is a life-cycle? Impacts &amp; value created along the life cycle of a product or service</td>
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<tr>
<td></td>
<td>- Definitions</td>
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<td>- History</td>
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<tr>
<td>08.30-08.40</td>
<td>Why LCM is needed in business and in government?</td>
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<td></td>
<td>- Drivers</td>
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<tr>
<td>08.40-09.15</td>
<td>What does LCM encompass?</td>
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<td></td>
<td>- What are the unique aspects of LCM?</td>
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<tr>
<td>09.15-10.00</td>
<td>Group exercise</td>
</tr>
<tr>
<td>10.00-10.30</td>
<td>Break for coffee &amp; refreshments</td>
</tr>
</tbody>
</table>
Introduction to Life Cycle Management

Slides
Life Cycle Management
a Business Guide to Sustainability

Training Session 1 of 4
November 2006

Life Cycle Management Training - Outline

- Introduction to LCM
  - This Session!
- How LCM is used in Practice
  - Second Session
- Communicating LCM Results
  - Third Session
- LCM and Stakeholder Expectations
  - Fourth Session

Learning Objectives: understand the theoretical basis of life cycle management & its history

- What is a life cycle? Impacts & value created along the life cycle of a product or service
- Definitions
- History

Why LCM is needed in business and in government?

What does LCM encompass?
What are the unique aspects of LCM?

Group exercise

Break for coffee & refreshments
Learning Objective: Understand the practical aspects of LCM in policy development & business operations, through discussions of how to integrate it into decision making & through case examples

10.30-10.45  Life cycle management
Definition & Benefits

10.45-11.00  Communication toolbox
Men, women & link with LCM
Examples and diffusion of tools

11.00-11.15  Communication toolbox
Question: To whom? Scope, drivers & target groups of communication

11.15-11.30  Sector-specific drivers
Case studies
Combination of tools

11.30-11.45  Group exercise
Identifying Stakeholders
Potential Stakeholders
Ranking

11.45-12.00  Group exercise
Break for lunch

- How LCM is used in Practice – Second Session

Learning Objective: Provide a good understanding of communication tools and strategies. Why and how can they be valuable to business?

08.00-08.15  Why communicating LCM? To whom?
Definition and scope, drivers, target groups of communication

08.15-09.00  Communication toolbox
Men, women & link with LCM
Examples and diffusion of tools

09.00-09.15  Case study:
Sector-specific drivers
Combination of tools

09.15-09.30  Group exercise
Communication toolbox
Main features and link with LCM
Examples and tools

09.30-10.00  Group exercise
Break for coffee & refreshments

- Communicating LCM Results – Third Session

Learning Objective: Understand how to identify stakeholders, as well as their priorities & concerns

10.30-11.00  Why Engage Stakeholders?
Potential Stakeholders
Scope
Ranking

11.00-11.15  Importance of including stakeholders
Risk Avoidance
Opportunity Creation

11.15-11.30  Case study
11.30-11.45  Group exercise
11.45-12.00  Break for lunch

- LCM and Stakeholder Expectations – Fourth Session
Life Cycle Management is...

... the application of life cycle thinking to business practices, with the aim to systematically manage the life cycle of an organisation's products and services

... the systematic management of product and material life cycles, to promote production and consumption patterns that are more sustainable than the ones we have today

... a flexible integrated, management framework of concepts, techniques and procedures to address environmental, economic, and social aspect of products, procedures and organisations.

The life cycle
The Life Cycle – An Example

Life Cycle Thinking

More sustainable

Sustainable development "meets the needs of the present ..."
More sustainable

Sustainable development “meets the needs of the present ... without compromising the ability of future generations to meet their own needs.”

Environmental Social Economic – The Triple Bottom Line

Where does LCM apply in the organisation?
Life Cycle Management is...

... the application of life cycle thinking to business practices, with the aim to systematically manage the life cycle of an organisation's products & services

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... a flexible integrated, management framework of concepts, techniques & procedures to address environmental, economic & social aspect of products, procedures & organisations

History of LCM

Increasing number & complexity of expectations
History of LCM

- Improved Corporate Environmental Performance
- Early Environmental Movement
- Life Cycle Assessment
- Life Cycle Management

Increasing number & complexity of expectations

Who is Active in Life Cycle Thinking Today?

- DAIMLERCHRYSLER
- Rio Tinto
- JohnsonDiversey
- Teknisio
- Interface Corporation
- B&W TRUEXCity
- United Technologies
- 3M
- GM
- OECD

Why is LCM Needed? Anticipate & Respond to Drivers

1. Business Strategy Drivers
   - Decision Making
   - Efficiency
   - Total Cost
   - Design
2. Market Drivers
   - Market Share
   - Access
   - Public Relations
3. Financial Sector Drivers
   - Predictability
   - Competitive Advantage
4. Legislative Drivers
   - Removal of Banned Substances
   - End of Life Responsibility
LCM Business Drivers – 1. Business Strategy

- Decision Making
  - Getting a complete picture
  - New business opportunities
- Efficiency
  - Eco-Efficiency
- Total Cost
- Design
  - Improved value or performance
- Avoided Risk

LCM Business Drivers – 2. Market

- Shifting expectations
  - Aware consumers
  - Procurement
  - Retailers
LCM Business Drivers – 2. Market

- Shifting expectations
  - Aware consumers
  - Retailers
  - Procurement

LCM Business Drivers – 3. Financial Sector

Total Growth in Social Investing in the US Between 1995 and 2005
LCM Business Drivers – 3. Financial Sector

Dow Jones Sustainability World Indexes
(December 1993 - February 2002, Euro, Price Index)

LCM Business Drivers – 4. Legislation

• Legislative Impact
  – Becoming more stringent
  – Targeting Firms
    • Simplicity
    • Globalization
    • Declining trust

• WEEE
• RoHS
• End-of-life vehicle directive
• Environmental Preferable Purchasing Program
• 3R Initiative
• Regulation for Pollution Control of Electronics Products (RPCEP)
• Japan’s Environmental Policy Priorities Index (JEPIX)
What Does LCM Encompass?

- Strategies & Concepts
- Systems & Processes
- Data Information & Models
- Tools & Techniques
- Programmes
- Life Cycle Management
What makes LCM unique from other approaches?

- Inputs
  - Data Sources
  - Tools
  - Concepts
  - Systems
  - Policies

- Output
  - Strategy improvements
  - Market Share
  - Access to Financing
  - Regulatory Compliance

What Does LCM Encompass?

- Strategies & Concepts
- Systems & Processes
- Programmes
- Data Information & Models
- Tools & Techniques

Strategies & Concepts
- Dematerialization
- Cleaner Production
- Industrial Ecology
- Eco-efficiency
Dematerialization

Strategies & Concepts

Cleaner Production

- Is an environmental strategy
- Can be applied to processes, products and services
- Can increase overall efficiency and reduce risks to humans and the environment

Industrial Ecology

Policy Alignment

Balancing Production and Natural Capacity

Dematerialization

Improved energy use patterns

Emulating metabolic Pathways
Strategies & Concepts

- Dematerialization
- Cleaner Production
- Industrial Ecology
- Eco-efficiency

"Creating more value with less impact" (WBCSD)

Systems & Processes

- Integrated and Environmental Management Systems (i.e. ISO 14000, EMAS, EFQM)
- Certification
- Extended Producer Responsibility (EPR)
- Integrated Product Policy (IPP)
Integrated and Environmental Management Systems (i.e. ISO 14000, EMAS, EFQM)

Systems & Processes

Plan

Environmental Management System

Check

Feedback

Integrated and Environmental Management Systems (i.e. ISO 14000, EMAS, EFQM)

Systems & Processes

Extended Producer Responsibility (EPR)
Integrated and Environmental Management Systems (i.e. ISO 14000, EMAS, EFQM)

Classic Responsibility

INPUTS

Final Product

Waste

Benefit

Use

Extended Producer Responsibility (EPR)

Integrated Product Policy (IPP)

By using a variety of tools it is possible to develop a policy that addresses the system wide impacts of products or processes.
Integrated and Environmental Management Systems (i.e. ISO 14000, EMAS, EFQM) Certification

Extended Producer Responsibility (EPR) Integrated Product Policy (IPP)

Supply Chain Management Public Green Procurement

Stakeholder Engagement Corporate Social Responsibility (CSR)

Communication

Programmes

Design for Environment (DfE)

The systematic integration of environmental considerations into product and process design.

- Internal Drivers
- External Drivers

Programmes

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Supply Chain Management

- Procurement policies, and procedures, are a common, and effective, gate by which life cycle management can develop in a firm
- Working with suppliers and supply chain issues is rapidly increasing as an important strategic consideration

Public Green Procurement

- The best value for money considerations such as, price, quality, availability, functionality, etc.;
- Considers the entire Life Cycle of products;
- Social aspects: effects on issues such as poverty eradication, international equity in the distribution of resources, labour conditions, human rights.

Stakeholder Engagement

"...Value creation for everyone involved in enterprise is fundamental to creating common purpose and addressing the complex issues facing the planet."

- The Stakeholder Engagement Manual
Programmes

Supply Chain Management
Public Green Procurement
Stakeholder Engagement
Corporate Social Responsibility (CSR)

• Integration of social and environmental concerns in their business operations and in their interaction with their stakeholders

Communication

• Any manner of information sharing with stakeholders, generally through one-way, non-iterative processes, i.e. Corporate Sustainability Reporting

Tools & Techniques

Analytical
Procedural
Supportive
What Does LCM Encompass?

**GOAL**

**Sustainable Development**

- **Systems & Processes**
  - Strategies & Concepts
  - Certification

- **Programmes**

- **Data Information & Models**

- **Tools & Techniques**

- **Life Cycle Management**
  - Supportive, ISO standards on product eco-labeling
  - Eco-Efficiency

**LCM in My Organisation**

- **Strategies & Concepts**
- **Certification**
- **Communication**
- **Best Practice Benchmarks**
- **Data Information & Models**
- **Supportive, ISO standards on product eco-labeling**

Data: Databases, Data Warehousing, Controlling

Best Practice: Best Practice Benchmarks, References, etc.

Models: Data, Dose-Response, etc.
What are the impacts of your clothes?

Time to discuss...

Life Cycle Management Training - Outline

- Introduction to LCM – This Session!
- How LCM is used in Practice – Next session!
- Communicating LCM Results – Subsequent Session
- LCM and Stakeholder Expectations – Subsequent Session
Acknowledgements

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About us

The UNEP SETAC Life Cycle Initiative

UNEP DTIE, SETAC & the Life Cycle Initiative

UNEP and SETAC have established a global life cycle assessment initiative. Among other things, the Life Cycle Initiative builds upon and provides support to the ongoing work of UNEP on sustainable consumption and production, such as Industry Outreach, Industrial Pollution Management, Sustainable Consumption, Cleaner and Safer Production, Global Reporting Initiative (GRI), Global Compact, UN Consumer Guidelines, Tourism, Advertising, Eco-design and Product Service Systems.

The Initiative’s efforts are complemented by SETAC’s international infrastructure and its publishing efforts in support of the LCA community.

The Life Cycle Initiative is a response to the call from governments for a life cycle economy in the Malmö Declaration (2000). It contributes to the 10-year framework of programmes to promote sustainable consumption and production patterns, as requested at the World Summit on Sustainable Development (WSSD) in Johannesburg (2002).

Our mission is to develop and disseminate practical tools for evaluating the opportunities, risks, and trade-offs associated with products and services over their entire life cycle to achieve sustainable development.

The programmes aim at putting life cycle thinking into practice and at improving the supporting tools through better data and indicators by hosting and facilitating expert groups whose work results in webbased information systems.

1. The Life Cycle Management (LCM) programme creates awareness and improves skills of decision-makers by producing information materials, establishing forums for sharing best practice, and carrying out training programmes in all parts of the world.

2. The Life Cycle Impact Assessment (LCIA) programme increases the quality and global reach of life cycle indicators by promoting the exchange of views among experts whose work results in a set of widely accepted recommendations.

3. The Life Cycle Inventory (LCI) programme improves global access to transparent, highquality life cycle data.

Learn more at: http://www.uneptie.org/pc/sustain/lcinitiative.