

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

THE EUROPEAN PHENOMENON
EUROPEAN AIRLINE ENVIRONMENTAL REPORTING

by

Benjamin R. Day

A research report submitted in partial fulfillment
of the requirements for the degree of

Master of Philosophy

(Management)

from

MASSEY UNIVERSITY – PALMERSTON NORTH
NEW ZEALAND

MASSEY UNIVERSITY



1061437413

1999

To Kenmir

We must convince each generation that they are transient passengers on this planet earth. It does not belong to them. They are not free to doom generations yet unborn. They are not at liberty to erase humanity's past nor dim its future.

-Bernard Lown and Evjueni Chazov

Acknowledgements

This research report represents the efforts of many people. It is the culmination of determination, perseverance and a passion for aviation and sustainability. It was with ease that I chose this topic for my Masters research. A boyhood interest in aviation combined with a newly found desire to change humankind's unsustainable existence meant that the obvious result was a project involving airlines and the environment.

Delyse Springett, my supervisor, mentor and friend has been the catalyst for a major revolution that has changed my view of the world and my calling in life. I am a better, wiser and "greener" person for it. Thank you for sharing your knowledge and wisdom and spending so much time with me over the years. Thank you for all of your effort and commitment, particularly for your English Grammar lessons!

Thank you to all of the Environmental Managers and Communication staff members from the airlines involved in this research. Without your cooperation and input into this research, the project could never have been attempted. The airlines involved in this study are leading the industry, and in some cases, leading the world in the journey towards a viable and sustainable future. I hope this research assists other airlines embark on their own environmental journey, and in doing so, lead the industry towards some improved level of environmental and social responsibility.

Thank you to my parents, whose spiritual (and financial!) assistance has made my own journey of self-discovery possible. I have always had their unconditional support, love and trust. There is no way I would have achieved this degree without them. I am one of the lucky ones.

The work that this report represents is a result of many influences and the tireless effort of many people. However, any mistakes or omissions are my own responsibility.

Benjamin R. Day, NZ; December, 1999

1. Table of Contents

1.	TABLE OF CONTENTS.....	1
2.	TABLES OF FIGURES	3
3.	THE LITERATURE REVIEW	5
3.1	WHAT IS CORPORATE ENVIRONMENTAL REPORTING?.....	5
3.2	CER MOTIVATORS	6
3.3	THE ARGUMENTS FOR AND AGAINST CER	8
3.4	CER CONTENT AND REPORTING GUIDELINES	9
3.5	THE GLOBAL REPORTING INITIATIVE (GRI)	10
3.6	CER PERFORMANCE AND CURRENT BUSINESS TRENDS	13
3.7	AVIATION AND CER	18
3.8	SUMMARY AND CONCLUSIONS	19
4.	PROBLEM STATEMENT	21
5.	RESEARCH QUESTIONS AND OBJECTIVES	22
5.1	THE SURVEY: QUESTION ONE	22
5.2	THE SURVEY: OBJECTIVE ONE	22
5.3	THE CRITIQUE: QUESTION ONE	23
5.4	THE CRITIQUE: OBJECTIVE ONE	23
6.	IMPORTANCE AND BENEFITS OF THE STUDY	24
7.	THE SURVEY METHODOLOGY.....	25
7.1	SURVEY CONSTRUCTS	25
8.	CRITIQUE METHODOLOGY	27
8.1	AN OVERVIEW OF THE UNEP/SUSTAINABILITY 50 REPORTING INGREDIENTS.....	27
9.	INTRODUCTION TO THE SURVEY AND THE AIRLINE CER CRITIQUE.....	29
10.	THE SURVEY	30
10.1	INTRODUCTION.....	30
10.2	BACKGROUND.....	31
10.3	SURVEY RESULTS, ANALYSIS AND DISCUSSION.....	31
10.4	SURVEY DISCUSSION AND CONCLUSIONS	58
11.	THE CRITIQUE OF AIRLINE CERS.....	64
11.1	INTRODUCTION.....	64
11.2	THE UNEP/SUSTAINABILITY CRITERIA AS A CER ASSESSMENT TOOL.....	65
11.3	TOTAL SCORES AND INDUSTRY COMPARISONS	66
11.4	COMPANY AND INDUSTRY COMPARISONS.....	70
11.5	SECTION ANALYSIS.....	72
11.6	INDIVIDUAL QUESTION ANALYSIS	76
11.7	AIRLINE CER CRITIQUE CONCLUSIONS	135
12.	FINAL CONCLUSIONS.....	139
13.	RECOMMENDATIONS.....	148
13.1	RECOMMENDATIONS FOR AIRLINES	148

13.2	RECOMMENDATIONS FOR FURTHER RESEARCH	151
14.	REFERENCES.....	152
15.	GLOSSARY OF TERMS.....	154
16.	APPENDICES.....	155
16.1	APPENDIX A: CORRESPONDENCE.....	155
16.2	APPENDIX B: THE SURVEY COVERING LETTER.....	156
16.3	APPENDIX C: AIRLINE ENVIRONMENTAL REPORTING SURVEY.....	157
16.4	APPENDIX D: AGGREGATE SURVEY RESULTS.....	166
16.5	APPENDIX E: THE UNEP/SUSTAINABILITY 50 REPORTING INGREDIENTS.....	172
16.6	APPENDIX F: THE CRITIQUE RESULTS.....	174

2. Tables of Figures

BOX 1: THE AIRLINE CERS TO BE USED IN THE CASE STUDY.....	27
BOX 2: THE CER CRITIQUE FORMAT.....	65
BOX 3: AVERAGE SCORES OF 50% AND ABOVE. (% SCORE).....	78
BOX 4: AVERAGE SCORES OF BELOW 50% (% SCORE).....	79
GRAPH 1: WHAT COUNTRIES ARE REPORTING? (KPMG, 1997).....	14
GRAPH 2: REGIONAL AND COUNTRY ANALYSIS OF SCORES (SUSTAINABILITY, 1997).....	14
GRAPH 3: WHAT ARE CERS REPORTING ON? (KPMG, 1997).....	15
GRAPH 4: 1996 AND 1997 CER TOP 10 PROGRESS: (SUSTAINABILITY, 1996 AND 1997).....	15
GRAPH 5: COMPARISONS OF THE GLOBAL AND AUSTRALIAN TOP 10 REPORTING CLUSTERS (SUSTAINABILITY, 1997) (SMEC, 1999).....	16
GRAPH 6: COMPARISON OF THE TOP 10 AUSTRALIAN AND GLOBAL REPORTS (SUSTAINABILITY, 1997) (SMEC, 1999).....	17
GRAPH 7: THE DECISION-MAKING JOURNEY. THE LEADERS OF THE PAST VS. THE DECISION-MAKERS OF TODAY.....	46
GRAPH 8: COMPARISON OF CER BARRIERS FROM THE FIRST CER PUBLICATION AND FROM THE MOST RECENT PUBLICATION.....	54
GRAPH 9: TOTAL CER SCORES.....	66
GRAPH 10: PERCENTAGE SCORES FOR THE CER CRITIQUE.....	67
GRAPH 11: COMPANY COMPARISONS.....	70
GRAPH 12: INDUSTRY CER COMPARISONS.....	71
GRAPH 13: SECTION PERCENTAGE SCORES.....	74
GRAPH 14: QUESTION SCORES DEPICTED ON A STACKED AREA GRAPH.....	76
GRAPH 15: AVERAGE SCORES FOR QUESTIONS 1 TO 50.....	77
GRAPH 16: COMPARISON OF AIRLINE CER TOP MANAGEMENT STATEMENT SCORES.....	81
GRAPH 17: COMPARISON OF ENVIRONMENTAL POLICY SCORES.....	83
GRAPH 18: COMPARISONS OF ENVIRONMENTAL MANAGEMENT SCORES.....	84
GRAPH 19: MANAGEMENT RESPONSIBILITY AND ACCOUNTABILITY.....	85
GRAPH 20: ENVIRONMENTAL AUDITING RESULTS.....	87
GRAPH 21: ENVIRONMENTAL GOALS AND TARGETS.....	88
GRAPH 22: AIRLINE CER LEGAL COMPLIANCE.....	89
GRAPH 23: RESEARCH AND DEVELOPMENT.....	90
GRAPH 24: AWARD SCORES.....	91
GRAPH 25: CER VERIFICATION SCORES.....	92
GRAPH 26: REPORTING POLICY SCORES.....	93
GRAPH 27: CORPORATE CONTEXT SCORES.....	94
GRAPH 28: MATERIAL USE SCORES.....	95
GRAPH 29: ENERGY COMPARISON SCORES.....	96
GRAPH 30: WATER CONSUMPTION SCORES.....	97
GRAPH 31: ECO-EFFICIENCY SCORES.....	98
GRAPH 32: HEALTH AND SAFETY SCORES.....	99
GRAPH 33: ACCIDENTS AND EMERGENCY RESPONSE SCORES.....	100
GRAPH 34: RISK MANAGEMENT AND EIA SCORES.....	101
GRAPH 35: LAND CONTAMINATION AND REMEDIATION SCORES.....	102
GRAPH 36: STEWARDSHIP SCORES.....	103
GRAPH 37: WASTE MINIMISATION SCORES.....	104
GRAPH 38: AIR EMISSIONS SCORES.....	105
GRAPH 39: WATER EFFLUENT SCORES.....	107
GRAPH 40: NOISE AND ODOURS.....	108
GRAPH 41: TRANSPORTATION SCORES.....	109
GRAPH 42: LIFE-CYCLE DESIGN SCORES.....	110
GRAPH 43: ENVIRONMENTAL IMPACTS.....	111

GRAPH 44: PRODUCT STEWARDSHIP SCORES.....	112
GRAPH 45: PACKAGING SCORES.....	113
GRAPH 46: ENVIRONMENTAL SPENDING SCORES.....	114
GRAPH 47: ENVIRONMENTAL LIABILITY SCORES.....	115
GRAPH 48: MARKET SOLUTION SCORES.....	116
GRAPH 49: ENVIRONMENTAL COST ACCOUNTING SCORES.....	117
GRAPH 50: CHARITABLE CONTRIBUTION SCORES.....	118
GRAPH 51: EMPLOYEE SCORES.....	119
GRAPH 52: POLITICIANS, LEGISLATORS AND REGULATOR SCORES.....	120
GRAPH 53: LOCAL COMMUNITY SCORES.....	121
GRAPH 54: INVESTOR SCORES.....	122
GRAPH 55: SUPPLIERS AND CONTRACTOR SCORES.....	123
GRAPH 56: CUSTOMERS AND CONSUMER SCORES.....	124
GRAPH 57: ENVIRONMENTAL GROUP SCORES.....	125
GRAPH 58: SCIENCE AND EDUCATION SCORES.....	126
GRAPH 59: OTHER SCORES.....	127
GRAPH 60: TECHNOLOGY SCORES.....	128
GRAPH 61: GLOBAL ENVIRONMENT SCORES.....	129
GRAPH 62: GLOBAL DEVELOPMENT SCORES.....	130
GRAPH 63: GLOBAL OPERATING STANDARD SCORES.....	131
GRAPH 64: REPORT DESIGN SCORES.....	132
GRAPH 65: VISIONS, SCENARIOS, AND FUTURE TREND SCORES.....	134
ILLUSTRATION 1: AN OVERVIEW OF THE RESEARCH PROJECT.....	29
ILLUSTRATION 2: AN OVERVIEW OF THE RESEARCH CONCLUSION PROCESS.....	139
LIST 1: AN OVERVIEW OF THE 50 REPORTING INGREDIENTS.....	28
TABLE 1: RESEARCH CONSTRUCTS AND CONCEPTS.....	25
TABLE 2: AIRLINE BACKGROUND INFORMATION.....	32
TABLE 3: RESULTS FROM QUESTION 4. "DID THE AIRLINE REFER TO ANY CER FRAMEWORK"?.	34
TABLE 4: THE YEAR OF THE FIRST CER AND THE EXTERNAL CER FRAMEWORKS USED.....	35
TABLE 5: THE RANKED EXTERNAL "DRIVERS" FOR PUBLISHING CERS.....	36
TABLE 6: THE RANKED INTERNAL "DRIVERS" FOR PUBLISHING CERS.....	41
TABLE 7: BENEFITS FROM PUBLISHING CERS.....	43
TABLE 8: RESULTS FOR QUESTION 10 AND QUESTION 11.....	46
TABLE 9: RESULTS FOR QUESTION 12.....	48
TABLE 10: RESULTS FOR QUESTION 13.....	48
TABLE 11: WHAT ARE THE AIRLINES SHARING WITH THEIR ALLIANCE PARTNERS?.....	49
TABLE 12: ARE THE AIRLINES MARKETING THEMSELVES AS ENVIRONMENTALLY RESPONSIBLE?.....	50
TABLE 13: ARE THE AIRLINES USING THEIR CERS AS MARKETING TOOLS?.....	51
TABLE 14: THE BARRIERS EXPERIENCED WHEN DEVELOPING THE <u>FIRST</u> CER.....	52
TABLE 15: HAVE THE BARRIERS CHANGED SINCE THE PUBLICATION OF THE FIRST CER?.....	53
TABLE 16: THE BARRIERS EXPERIENCED WHEN DEVELOPING THE <u>LATEST</u> CER (OUT OF 5 AIRLINES).....	53
TABLE 17: WILL THE AIRLINES CONTINUE PUBLISHING CERS?.....	56
TABLE 18: WILL THE AIRLINES INTEGRATE THE CERS INTO COMPANY ANNUAL REPORTS?.....	56
TABLE 19: AIRLINE RANKINGS AND CATEGORIES.....	68
TABLE 20: SECTION RANKINGS FOR THE "ALL CERS" GROUPING.....	75
TABLE 21: SECTION RANKINGS FOR GROUP 1.....	75
TABLE 22: SECTION RANKINGS FOR GROUP 2.....	75
TABLE 23: TOTAL SCORES.....	174
TABLE 24: SECTION TOTALS.....	174
TABLE 25: SECTION TOTALS FOR GROUP 1.....	175
TABLE 26: SECTION SCORES FOR GROUP 2.....	175
TABLE 27: THE 50 QUESTIONS AND THE RESULTS.....	176

3. The Literature Review

It is generally accepted that the earth is facing some serious ecological issues as the world's population increases and as the environmental impacts of human endeavour take effect.

Business, and the consumption that it promotes, is often blamed for the environmental dilemmas that the earth is facing (Hawken, 1994; Welford, 1995). However, as business becomes more responsible and accountable a new phenomenon has emerged in the process of environmental management and environmental accountability (Deloitte Touche Tohmatsu, 1993). A new catch phrase can now be heard echoing in the boardrooms all around the world, as companies begin a journey of environmental and social responsibility. Corporate Environmental Reporting or CER is a new tool in the arsenal for business and is often part of a broad environmental management process. Several commentators argue that environmental reporting is an extremely important tool in the journey towards business sustainability because CER is seen as a method of gaining trust and credibility. Honesty is an important part of the whole sustainability argument; environmental disclosure is a method for business to achieve this (UNEP, 1994; SustainAbility, 1997).

3.1 What is Corporate Environmental Reporting?

Traditionally, environmental reporting has been a voluntary method of communicating a company's environmental performance to its stakeholders (CERES, 1999). Most commentators agree that Corporate Environmental Reporting (CER) is rapidly becoming the most important instrument in a company's Environmental Management System (EMS) (CERES, 1999; SustainAbility, 1996 and 1997). The importance of this trend is recognised in the fact that several countries (including New Zealand) are considering making or have made CER mandatory (SustainAbility, 1997).

An environmental report is a point where companies and stakeholders meet. It is a document that generally includes an introduction by the Chief Executive, background information about the organisation, and the organisation's environmental policies (White et al, 1997). An organisation's overall position and impact on the environment are generally described, as are the setting of targets and actions for the company to achieve (CERES, 1999; SustainAbility, 1997; WBCSD, 1998a). There has been much literature devoted to reporting content and there exist many different views on reporting. CER content and contemporary company performance will be discussed later in the literature review.

3.2 CER Motivators

Companies are motivated to publish environmental reports by many diverse and differing factors. The perceived benefits that environmental disclosure provides a company is one of these motivators. Most authors believe that companies will be able to meet the expectations of their stakeholders and win new business through the disclosure and honesty CER provides companies (WBCSD, 1998a; KPMG, 1998). Taking a more holistic approach are the Non-Governmental Organisations (NGOs), like the International Institute for Sustainable Development and UNEP. These organisations tend to emphasise the benefits that affect all of a company's stakeholders, not just the shareholder and the bottom line (UNEP, 1994).

The report as a process identifies inefficiencies and cost savings as well as reducing environmental liabilities. Many publications are devoted to the term *eco efficiency* and it is no surprise that, due to the potential to save money and increase profit, businesses are quick to adopt CER as a method to achieve efficiencies (WBCSD, 1998b; WICE, 1993). However, John Elkington, of the consultancy SustainAbility, is quick to point out that eco-efficiency is just a by-product of the journey towards sustainability. He states that eco-efficiencies on their own are not enough for a company to achieve broad based sustainability (SustainAbility, 1997).

The KPMG information paper on Company Environmental Reporting (1998) states that CER can create competitive advantage, increase market positioning, build good corporate citizenship and stakeholder communication and ensures long term access to capital markets (Canadian Institute of Chartered Accountants, 1994). The World Business Council for Sustainable Development's (WBCSD) publication *Environmental Performance and Shareholder Value* (1998) also discusses these benefits and motivators. The document also adds that an increase in environmental performance will allow companies to reduce the cost of credit and enhance public profile.

Other benefits that may motivate organisations to publish CERs are the focus and direction reporting gives a company and the confidence it may provide. Employees can become motivated and environmentally aware and environmental risk can be reduced due to the direction the process of environmental reporting can provide an organisation (KPMG, 1998; Deloitte Touche Tohmatsu, 1993; CICA, 1994; Lober et al, 1997).

The KPMG report (1998) also states that businesses are motivated through a sense of corporate responsibility and recognition that business plays a major role in environmental problem resolution. The report also claims many organisations recognise that environmental management must be an integral part of business strategy. Most of the literature on reporting agrees with the belief that the CER must be a part of a company's overall strategic planning process (WBCSD, 1998b; SustainAbility, 1997; Deloitte, 1993; CICA, 1994).

Consumer environmental awareness plays a major role in dictating what motivates organisations to publish environmental reports. As the *Engaging Stakeholder Series* (SustainAbility, 1996 & 1997) has found, many of the reports are coming from Europe, where there are obvious environmental problems (and therefore more stakeholder awareness). A recent survey of Australian company CERs has discovered that reports from this side of the globe are fewer in number and poorer in quality (SMEC, 1998). Among reasons given is the false assumption by many that environmental problems in Australia are not as pressing as in other countries, hence the environmental awareness of consumers is less than in other parts of the world.

In general, all stakeholders, including employees, shareholders, the community and environmental groups, are forcing companies to disclose environmental information. Many publications rate this as one of the major motivators pushing companies to publish environmental reports (CICA, 1994; Bullough et al, 1995; WBCSD, 1998a, b; (SustainAbility, 1996 & 1997; Azzone et al, 1996). The article *Corporate Environmental Reporting in Practice* (Bullough et al, 1995) suggests that pressures from competitors, environmental groups and consumers are pushing companies to disclose. The establishment of an Environmental Management System will enable an organisation to put in place objectives and processes to achieve these goals; this allows an organisation to create reliable data for its stakeholders. The 1994 UNEP Report *Company Environmental Reporting*, states that the corporate responsibility agenda of the 1970s and 1980s is turning into a more demanding agenda of stakeholder accountability in the 1990s. It continues by stating that in the 21st century there will be a stakeholder push towards business sustainability. The CERES publication *Green Metrics* (White et al, 1997) calls this CER motivator an "information" driver. It states the pivotal role of information is shaping management, investment and consumer decisions. It goes further by suggesting that the power of information is shaping corporate environmental behaviour. The article *Environmental Reporting in Denmark* (Strachan et al, 1996) states that the CER revolution can be seen as a way of business legitimising its activities in society; however it also admits that society is demanding more information from business.

The International Corporate Environmental Reporting Site at www.enviroreporting.com indicates that several countries, including The Netherlands, Sweden, Scandinavia, Denmark, The United States and (up to earlier this year) New Zealand, are introducing or have introduced some kind of mandatory CER legislation (SustainAbility, 1997). Although most countries have no such laws, Environmental Management Systems such as ISO 14001, EMAS and BS 7750 (which are popular in Europe) require some sort of environmental publication (Lober et al, 1997; Deloitte, 1993; SustainAbility, 1997). Generally, all literature on the subject agrees that, as time progresses, legislation will play an increasing role in regulating business and the environment. (Lober et al, 1997). The debate seems to lie in whether or not CER should be mandatory or voluntary. Most business-based organisations want freedom to report, stating that compulsory CER will be costly, inefficient and complicated due to the diverse range of industries a generic law would have to cover. Business argues that it is most effective when left to its own devices. Adversaries to this view believe that compulsory CER is the only way businesses will begin to take the environment seriously. They tend to believe that without

laws, companies will only window dress the issues surrounding business and the environment. Proponents of compulsory CER point to the fact that only three hundred Multi-National Corporations (MNCs) out of over 35,000 MNCs are publishing some sort of environmental document under the voluntary status of CER (White et al, 1997).

3.3 The Arguments for and Against CER

Most literature on the subject tends to support CER. The *Engaging Stakeholder Series* (SustainAbility, 1994, 1996, and 1997) would tend to indicate that most large companies have accepted the fact that CER in some form is here to stay. Arguments against CER are coming mainly from the legal profession and concerns environmental performance, risk and liability (Environment97, 1997). Many lawyers believe that voluntary disclosure is risky and ill advised because the information could be used against the company by a third party (Environment97, 1997). The argument also advises that EMS standards such as BS7750 and EMAS should not be adopted because the structured processes and documentation these systems require will make information in court easier to obtain. The consensus with many lawyers is to err on the side of confidentiality.

An argument against such a view is John Elkington's "Business in a Goldfish Bowl" theory which believes that stakeholder pressure is too great and that business has little choice but to operate in a transparent and undistorted manner (Deloitte, 1993). Elkington, and other authors and reports such as the 1998 KPMG publication believe that only businesses that are transparent will survive in a new global environment that demands accountability and disclosure. Elkington goes further and states that organisations that are accountable and transparent are the only ones that can truly move into the area of total sustainability (SustainAbility, 1997).

A recent two-year study, found on the website www.enviroreporting.com, revealed that environmental policies within such publications as a CER actually enhance shareholder value. The study of companies such as ICI, Deutsche Bank, Electrolux, Monsanto, Unilever and Volvo revealed a correlation between environmental performance and shareholder value. The authors of the study state that companies are more likely to win contracts and gain shareholder approval by demonstrating environmental performance. The authors also add that institutional investors are also wary of the companies downplaying environmental issues. The participants in the study also agree that sustainability issues can only become more important in the future. This study is an important addition to the literature review as it reveals the importance of CER and the need for companies to use the tool as a method of improving environmental performance. This study adds weight to the arguments for CER.

3.4 CER Content and Reporting Guidelines

Many environmental reporting guidelines are being developed to assist organisations that are publishing CERs. The major problem, as identified in the 1997 Benchmark Report by UNEP and SustainAbility (1997), is that many industries and organisations with a diverse range of activities cannot easily use current guidelines. Most of the guidelines including the UNEP 50 reporting ingredients (used by *The Engaging Stakeholder Series*), are more applicable to manufacturing industries, and are difficult to apply to service industries (SustainAbility, 1997). The 1997 UNEP and SustainAbility report recommends that industry-specific guidelines be developed. The article *Corporate Environmental Reporting in Practice* (Bullough et al, 1995) also states that industry-specific standards are required to establish a level playing field.

The main guidelines being used by industry are the UNEP and SustainAbility 50 Reporting Ingredients and the Coalition for Environmentally Responsible Economies (CERES) Global Reporting Guidelines (GRI). The CERES principles have existed for over a decade; however, the development of the GRI is a new document under development during the past two years. The European Chemical Industry Council (CEFIC) has published its own industry specific CER benchmarking tool. The Public Environmental Reporting Initiative (PERI) has published a revised set of CER guidelines. The World Industry Council for the Environment's guidelines (WICE) and the WBCSD Business Charter for Sustainable Development are often used as a benchmarking tools to rate environmental reports. Several companies have developed reporting guidelines such as the KPMG information paper on CER and the Deloitte Touche Tohmatsu 1998 CER Scorecard.

The UNEP and SustainAbility 50 Reporting Ingredients is the founding CER benchmarking tool. As the name suggests, the guideline rates a report on 50 ingredients in categories called Management Policies and Systems, Inputs and Outputs, Finance, Stakeholder Relations and Partnerships, Sustainable Development and Report Design. To most independent commentators, the *50 Reporting Ingredients* form the most comprehensive guideline to date because it includes ingredients from the hard areas of business finance and *sustainable development*. The PERI guidelines include sections on organisational profile, environmental policy, environmental management, environmental releases, risk management, compliance, product stewardship, employee recognition and stakeholder involvement. The GRI is divided into several similar sections, CEO statement, key indicators, profile of reporting entity, policies, organisation and management systems, stakeholder relationships, management performance, operational performance, product performance and sustainability overview.

The KPMG paper (1998) has a detailed examination of several of these report guidelines benchmarked against the more comprehensive UNEP 50 Reporting Ingredients. The general picture that is painted by the KPMG (1998) document is that many of the guidelines are very similar to the UNEP 50 Reporting Ingredients. However, several patterns are emerging about contemporary CER guidelines.

KPMG found that, out of PERI, WICE, CERES, ICC and CEFIC all neglected to include CER verification and awards criteria. All of the documents missed out charitable contributions, and none of the documents included Environmental Cost Accounting (ECA) as a report critique. Apart from the CEFIC guideline, the other publications have not included environmental spending in their CER ingredients. There exist many individual trends where the reporting guidelines fail to measure up to the *50 Reporting Ingredients*.

Generally, the areas of finance, management policies, stakeholder relations and sustainable development are not covered as well as in the *50 Reporting Ingredients*. There are many gaps in most of the aforementioned guidelines. The next "best" guideline as indicated by the KPMG (1998) work is probably the CERES GRI and the ICC Business Charter for Sustainable Development. However, the KPMG findings point to the fact that there is a lack of standardisation amongst CER (KPMG, 1998) (SustainAbility, 1997). Many believe this lack of standardisation to be a major problem hampering the full development and potential of CER. (UNEP, 1994) (SustainAbility, 1997) (CICA, 1994). As a result UNEP and SustainAbility have indicated in the 1997 *Benchmark Report* (SustainAbility, 1997) that they will begin work with CERES in order to avoid unnecessary duplication of work and to attempt to standardise a CER guideline.

3.5 The Global Reporting Initiative (GRI)

Special mention must be made of the GRI due to its importance to the whole CER debate. The GRI is a framework for sustainability reporting developed by the Coalition for Environmentally Responsible Economies (CERES). This is a significant issue in the world of environmental reporting as it aims to be the defining tool for businesses to develop their own CER. The GRI comes at a time when there exists a multitude of reporting standards and frameworks. Therefore, an outcome of the GRI must be to deliver a standard generic CER tool and framework able to be used by all companies and organisations. This was such an important issue for people working in the field that organisations like SustainAbility (publisher of the *50 Reporting Ingredients* framework) are working with CERES on the GRI. Organisations like SustainAbility recognise the wasted effort relating to different organisations developing different and often conflicting frameworks for business.

A draft exposure of the GRI was published on the CERES website early this year for public scrutiny and comment and will be re-released in early 2000 (Line et al, 1999). The important difference of the GRI is its total encompassment of the *triple bottom line* or the economic, environmental and social bottom-lines, issues where most frameworks fail to deliver. The GRI was designed to assist organisations report on the *triple bottom line* and consists of 9 reporting sections covering all aspects of CER and sustainability issues (Line et al, 1999).

An important outcome of the GRI is the development of a single institutional “home” of CER to monitor, evaluate, and improve company reporting efforts (Line et al, 1999). This will also assist in standardising CER worldwide.

While still an experimental document, the draft release of the GRI was meant to stimulate discussion and critical analysis of the concept, thereby providing critical feedback for CERES on the GRI (Line et al, 1999). As part of the draft exposure of the GRI a pilot study incorporating several programmes was developed. This included a formal pilot study, a stakeholder pilot study and responses from companies that could not take part in the pilot programmes (Line et al, 1999).

As of June this year, several companies had agreed to take part in the pilot study. These companies included British Airways (a company which is the subject of this research), and Eastern Group. BA used the GRI in benchmarking the preparation for its 1999 report (Line et al, 1999). While BA had some success with the GRI, it chose to continue publishing a separate CER using aviation-specific environmental indicators. This was a reflection of the difficulty of amalgamating the *triple bottom line* into one report, but also the specific nature of aviation environmental impacts. In particular, BA had trouble with the economic and social indicators (Line et al, 1999). Because of this pilot study, BA is reviewing its reporting efforts for the future. Commentators believe that companies like BA, with strong CER track records, are in a strong position to take up sustainability reporting (Line et al, 1999).

The GRI sustainability reporting guidelines have nine parts including...

1. The CEO statement
2. Key environmental indicators
3. Profile of financial performance
4. Policies and management systems
5. Stakeholder relationships
6. Management performance
7. Operational performance
8. Product performance
9. Sustainability statement.

BA met the GRI guidelines regarding CEO statement, profile of the company (finances), management performance, product performance and sustainability statement. BA went beyond the GRI guidelines on one aspect, environmental operational performance (Line et al, 1999). BA did not meet the GRI guidelines in areas such as social/economic operational performance, Health and Safety performance, policies and management systems, and key indicators (Line et al, 1999). These are interesting findings and will be results and themes that can be compared to the critique of the BA 1998 CER using the SustainAbility 50 Reporting Ingredients framework (later in the report). This might also give a fair comparison between the GRI and the SustainAbility frameworks.

The point is continually reoccurring that there is no standard CER framework. Nobody really knows what constitutes a good CER. The GRI exposure draft has highlighted this point dramatically. The GRI is seen as a way of helping companies to report, which might have the effect of providing companies with a minimum standard, therefore diluting the intended effect of the GRI (Line et al, 1999). The other side of the coin is that the GRI is regarded as a “driver”, pushing companies to explore the outer-limits of sustainability and all of its complicated issues. CERES recognise these problems and state explicitly that the GRI is a journey and not a destination point for companies (Line et al, 1999). Like ISO 14001, GRI is a tool for continuous improvement.

Most commentators believe that a good CER creates a “fusion” of creative minds from all of the company’s sectors including strategists, environmentalists, designers and business managers (Line et al, 1999). Creativity seems to be the word that comes to mind when developing CERs under any system or framework due to the new ground companies are now covering and the scope they have to work with.

The two most prominent issues in the GRI are the external verification requirements and the sustainability statement. Issues surrounding verification include establishing standards and audit processes to allow the public to trust the auditors and their auditing processes as well as the language used in the whole verification process. Verification will continue to be a major issue for any GRI initiative, due to its importance for the publication of a highly scrutinised and highly valued public document.

Sustainability statement’s in the Global Reporting Initiative, are areas of contention for some parties. Sustainability statements are an ambitious proposal that requires businesses to comment on sustainability issues. Companies then have to state how they will redress these issues. (Line et al, 1999). Most companies will have trouble with this area due to the ramifications sustainability has on a company’s core business and values. Most industries including oil, transport, logging, manufacturing and mining for instance are probably unsustainable in their present forms.

3.6 CER Performance and Current Business Trends

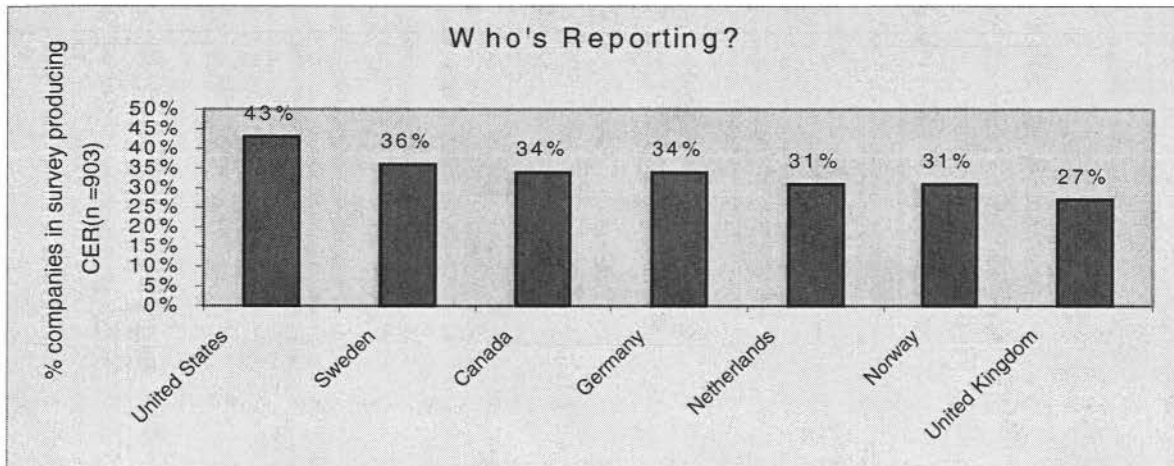
The 1996 and 1997 *Benchmark Reports* by UNEP and SustainAbility are the main surveys in recent years that have analysed company environmental reports. There exist many environmental award schemes run at a national level. However the 1996 and 1997 surveys undertaken by UNEP and SustainAbility, using the *50 Reporting Ingredients*, are comprehensive research documents from which to analyse current business performance in terms of environmental management and environmental reporting.

The 1997 survey used 100 stand-alone environmental reports; the 1996 survey used only 40. The main finding in both surveys was that although companies were progressing, most were still missing vital areas in their reports. Because the core business of the organisation is normally the one doing most of the damage, companies are reluctant to provide thorough accounts in their environmental reports (SustainAbility, 1997).

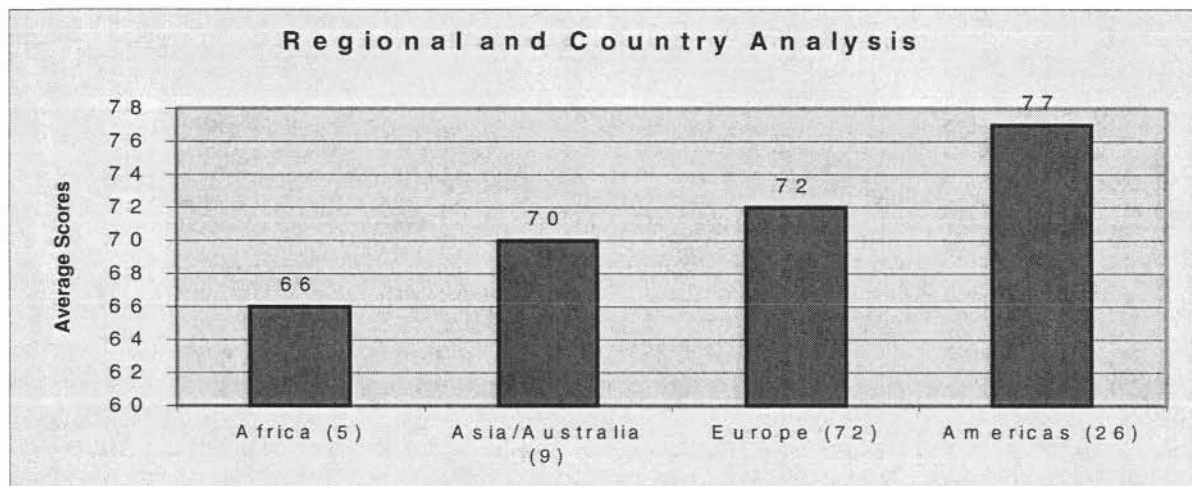
The 1997 survey recommended that companies get their reports verified by a third party to add credibility. It discovered that the companies were not reporting on the *triple bottom line* of economic, environmental and social responsibility. Both the 1996 and 1997 surveys discovered that companies are not using standardised figures which made benchmarking and comparisons difficult. The *Green Metrics* (White et al, 1997) publication also discovered this and stated that CERs were suffering from a lack of comparability and quantification and went further by stating that few companies provided a full picture of their operations. Azzone et al, 1997 in the article *A Stakeholders' View of Environmental Reporting* concluded that reports must be relevant, reliable, comprehensible and comparable. The results of several surveys have found that this is not always the case. The article, *Evolutionary Trends in Environmental Reporting* (Azzone et al, 1996) states that the lack of standardisation in CER is because the practice is not compulsory. The same article also found the lack of standardisation to be a major problem in CER.

A survey in *Green Metrics* (White et al, 1997) (Source from KPMG, 1997), discovered that the majority of reports are coming out of Europe. However, in terms of single countries, the United States produced the most Corporate Environmental Reports (Graph 1). The 1997 *Benchmark Survey* also discovered that both Europe and all of the America's were producing the better quality reports in its survey (Graph 2).

Graph 1: What countries are reporting? (KPMG, 1997).

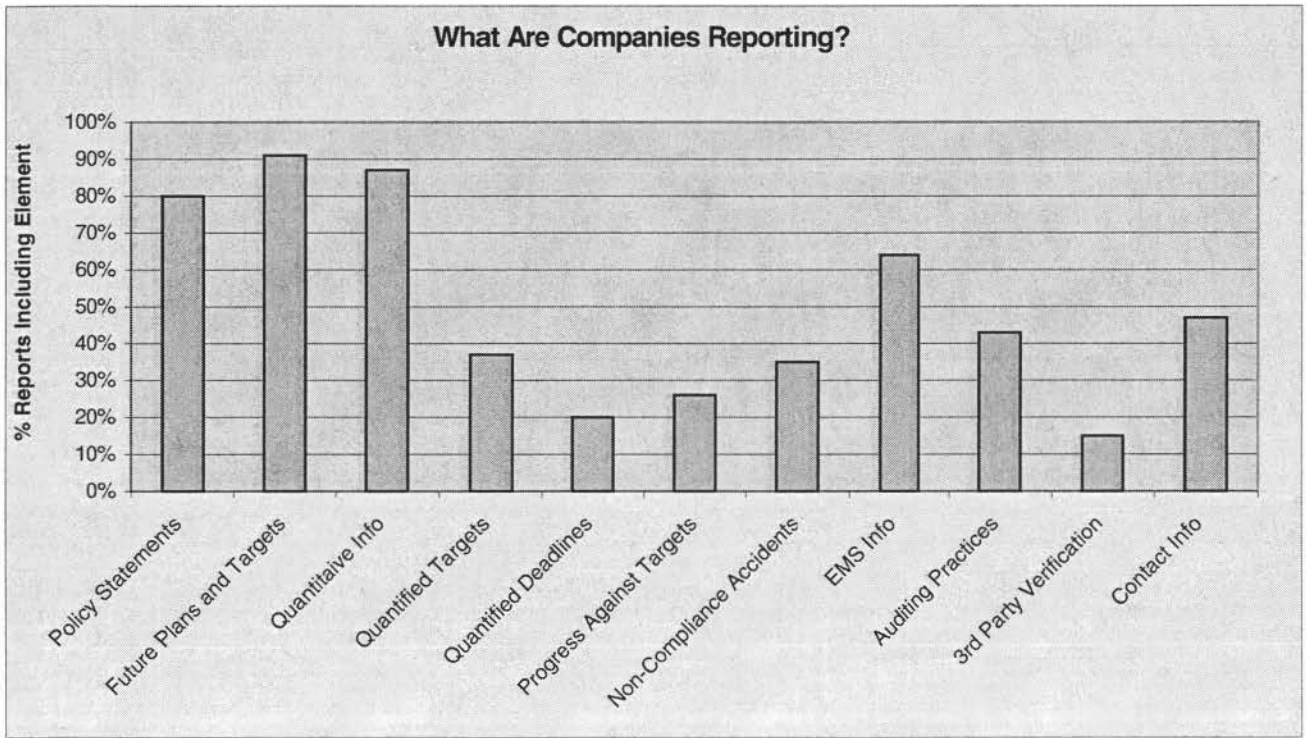


Graph 2: Regional and Country Analysis of Scores (SustainAbility, 1997).

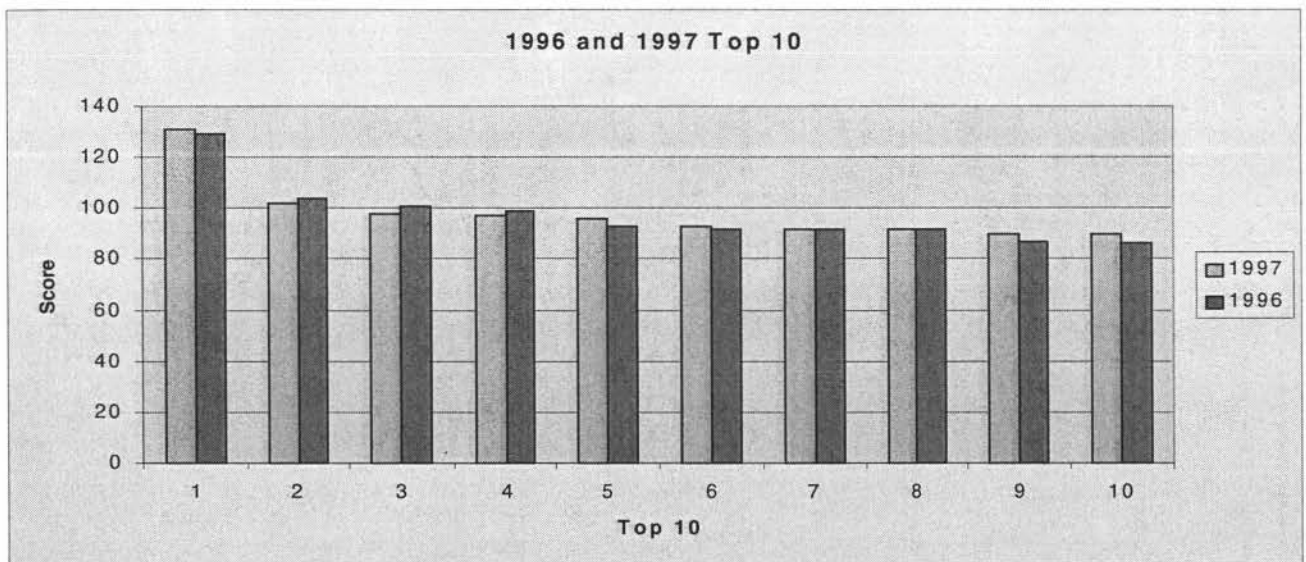


The KPMG (1997) survey in the *Green Metrics* report (White et al, 1997) also discovered what the companies are reporting on. The KPMG survey (1997), as shown in Graph 3, found that companies were very good at reporting policy statements, objectives and quantitative information on environmental performance. However, the survey also discovered that the companies are falling short in several areas including third party verification, progress on objectives and quantified targets and deadlines. These are the same findings in the 1997 UNEP and *Sustainability Benchmark Survey*. Like this survey, the KPMG work (1997) also discovered that companies were not reporting on non-compliance, accidents and litigation (as shown in Graph 3). Another similar survey, detailed in the article *100 Plus Corporate Environmental Report Study* (Lober et al, 1997), also discovered these trends. Companies were excellent at reporting environmental policy, but were not good at reporting quantitative goals or sustainability goals, reporting on non-compliance and adhering to some sort of charter like the ICC Charter or Agenda 21.

Graph 3: What are CERs Reporting on? (KPMG, 1997).



Graph 4: 1996 and 1997 CER Top 10 Progress: (SustainAbility, 1996 and 1997).

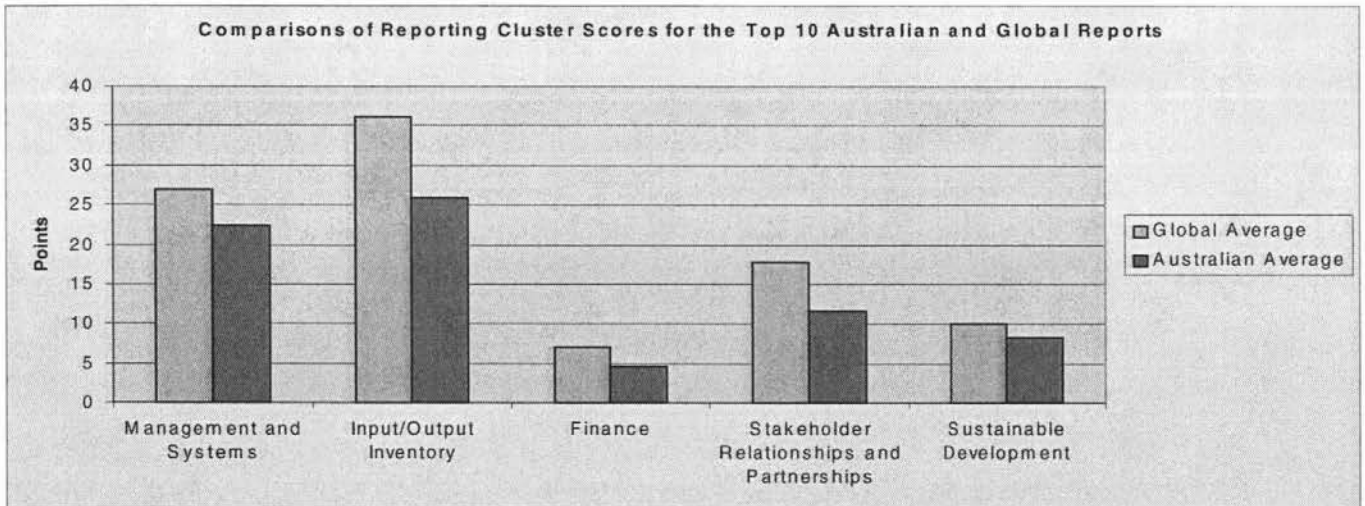


When comparing the top 10 scores in both the 1996 and 1997 *Benchmark* the progress over the two years was very slow. In some cases, progress had even regressed. Graph 4 shows the 1996 and 1997 top 10 scoring companies. As one can see, companies made very little or no progress. Only the first, ninth and tenth companies made progress.

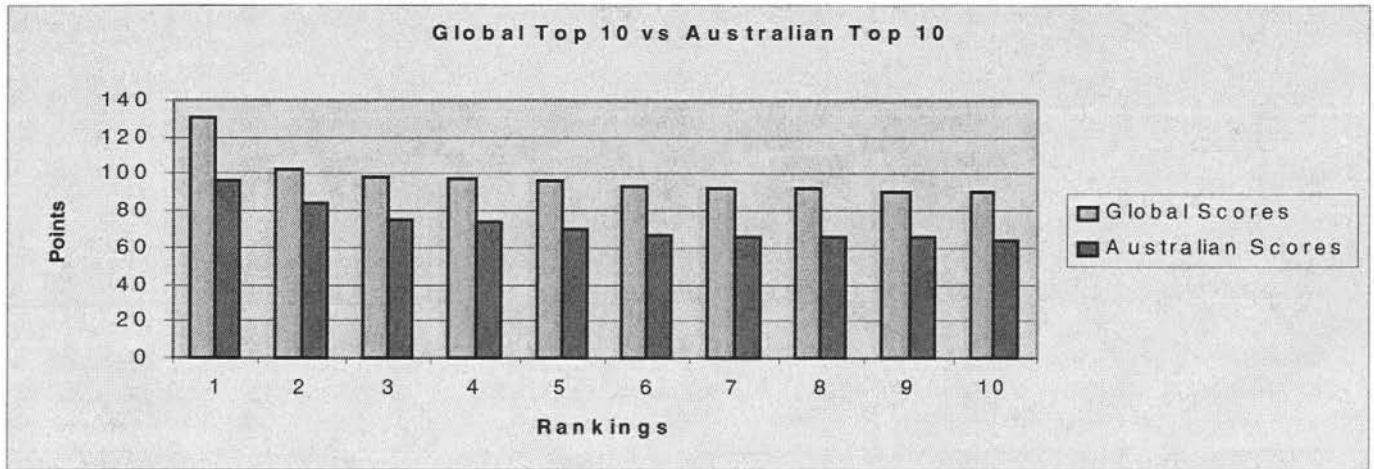
The recent release of the KPMG 1999 survey of environmental reporting, found on the website at www.enviroreporting.com, revealed that reporting has risen significantly in all the European countries examined, ranging for example from 28% to 36% in Germany. This new found enthusiasm may have resulted from legislative efforts in several countries regarding compulsory reporting. However, the survey also revealed that US companies reporting fell from 44% to 30%. This result blamed on the legal ramifications of environmental disclosure (a topic already discussed in the review regarding the advantages and disadvantages of CER).

The 1999 Australian survey conducted by SMEC using the *50 Reporting Ingredients* has discovered some interesting CER trends developing in the South Pacific. Although no New Zealand companies were in the survey, it is a comprehensive piece of research and may indicate the performance of CERs generally in Australasia. The survey compared the Australian reports against those reports in the 1997 Benchmark Survey. As one can see from Graph 5, Australian reports are well behind the reports in the Northern Hemisphere. Graph 5 shows that in all the reporting categories the Australian reports are behind the global average. The graph also illustrates the earlier findings that the reports are not disclosing information about finance and *sustainable development*. The article *Corporate Environmental Reporting in Practice* (Bullough et al, 1995) backs this up by stating that business is not reporting on sustainability. Graph 6 illustrates the 1997 UNEP and SustainAbility top 10 and the 1999 SMEC top 10. The trends show below that reports in the Pacific area are not up to the levels of the global reports used in the 1997 Benchmark Survey.

Graph 5: Comparisons of the Global and Australian Top 10 Reporting Clusters (SustainAbility, 1997) (SMEC, 1999).



Graph 6: Comparison of the Top 10 Australian and Global Reports (SustainAbility, 1997) (SMEC, 1999).



The PIRC survey (published on the website at www.enviroreporting.com) of environmental reporting companies in the UK (the second survey published, the first was in 1998) used a group of 363 companies expanding on the FTSE 350 used in 1998. This survey discovered similar trends to the KPMG and SMEC reports already discussed in the literature review. The PIRC survey is probably the most detailed study of UK companies and their reporting practices on environmental issues.

The whole area of CER has gained momentum in the UK with the British government renewing its intentions to make all “big” organisations report on their environmental performance with special emphasis on the government’s goals relating to sustainability.

The PIRC survey found that the number of companies that published some form of environmental disclosure document rose from 65% to 70%. The financial sector saw considerable growth from 52% to 72%. These figures show that environmental awareness is increasing and may indicate the growing concern for the environment felt by company stakeholders. 35% of all companies use a website to convey this data to its stakeholders, showing that companies are placing some value on the Internet as a tool for environmental disclosure. However, the environmental data was often very difficult to find on company websites.

The survey also found that only a small number of companies are quantifying impacts on the environment. The majority of survey respondents are neglecting data such as emissions, waste and energy use. Sustainability also proved to be a neglected issue, adding to the argument discussed in the GRI roundup, which identified the sustainability statement as the major sticking point for companies. These results go along with the work done by KPMG and SMEC. Companies are not dealing well with sustainability and quantifying environmental impacts.

3.7 Aviation and CER

Only a few airlines, mainly in Europe, are publishing CERs. British Airways (BA) and Scandinavian Airline Systems (SAS) are the only airlines that have appeared in the *Engaging Stakeholder Series*, both having scored in the top half of the survey. The major airlines publishing a CER are BA, SAS, Lufthansa, Swissair, Finnair, Air France, KLM and Iberia. Airlines in other regions of the world, while possibly having an environmental policy, are well behind the CER trends developing in Europe. Airlines might refrain from publishing CERs because of the current bias towards manufacturing reporting guidelines and frameworks. It has been recognised in the *Engaging Stakeholder Series* that service industries are more difficult to critique using the UNEP 50 Reporting Guidelines. This may be a factor deterring airlines from disclosing environmental information.

The International Air Transport Association's (IATA) publication *Environmental Review 1996* is a major document relating to the whole area of aviation and the environment. The publication covers all the effects that aviation has on the environment, including engine emissions, noise and airport development. The publication includes a small reference to the reporting trends of a few airlines; however, no detail is given. The IATA report also states that only a 'few airlines' are publishing a CER (IATA, 1996). IATA makes the point that many airlines have an environmental policy, but the difference between a policy and a CER is great. Without a CER, it is not possible to benchmark an airline's environmental and social performance against its original policies and objectives. Many of the airlines that are reporting are on the IATA's environmental taskforce, however the report mentions little else to do with CER. The IATA's 51st AGM (IATA, 1996) commits its members to protect the environment and to minimise environmental impacts. IATA, it seems, does not have a policy on the subject, other than to say that a few of its members are doing it. A new environmental review is due sometime this year; it will be interesting to see if this observation has changed.

The International Civil Aviation Organisation (ICAO) has environmental policies in its document titled A32-8 (ICAO, 1999). In the document ICAO commits global aviation to "take into account" the environment (ICAO, 1996), however no mention is made of CER. ICAO's *Annex 16*, relating to aviation and the environment, documents Standards and Recommended Practices (SARPS) regarding aviation and the environment. CER is not part of this annex (Crayston, 1999). Recent correspondence with John Crayston, Coordinator of ICAO's Air Transport and Environmental Programmes, has backed this up. Mr. Crayston stated that ICAO has no SARPS on CER and that ICAO deals mainly with "certification standards for aircraft and aircraft engines" (Crayston, 1999).

Europe is the main continent where CERs are most prevalent. The European Civil Aviation Conference (ECAC) is an intergovernmental organisation under the auspices of ICAO. ECAC has a comprehensive environmental policy that states that the aviation sector should reduce its environmental impacts; however, the organisation's policy does not refer to CER (IATA, 1996).

A major environmental advocacy group is the UK-based Aviation Environmental Federation (AEF). Tim Johnson, the Director of AEF, in recent correspondence, stated that the AEF had no policy on airline CER, but added that AEF supported the idea. Mr. Johnson said that "CER not only lays the foundation for a corporate environmental strategy but it also makes the company more accountable for its actions." (Johnson, 1999). Mr. Johnson indicated that only 10% of airlines were reporting (Johnson, 1999).

The major theme to come out of the literature review into airline CERs is that there is no major research, consensus or policy on it. This points to the need for more research into the whole field of airline CER and provides the topic for this research report as an initial step. The focus of the current research will be an examination and critique of the CERs from reporting airline companies and a survey of the environmental managers from these carriers.

3.8 Summary and Conclusions

The review of the literature has produced a number of findings.

Environmental reporting used to be a method of showing stakeholders that a company was concerned about the environment. Environmental reports are now highly scrutinised documents that provide information about a company's environmental performance. Most commentators agree that CER is fast becoming a most important part of a company's overall EMS.

Business is operating in a new environment where all of a company's stakeholders require information about a company's activities. This is a major force behind CER and environmental disclosure.

Businesses are motivated to publish CERs because of the internal and external advantages the process and the final product can bring an organisation.

Government legislation is also a factor in the drive behind CER. Some countries have compulsory CER legislation, many countries are thinking about it. There exists great debate about the benefits and problems behind compulsory and voluntary CER. EMSs like ISO 14001, EMAS and BS7750 are also forcing organisations to adopt CER.

The only sector that has real problems with CER is the legal industry, which believes disclosure is ill advised due to the implications this information could have for company responsibility. Most literature is pro-environmental reporting. A recent study correlates shareholder value and environmental performance, this is a good argument for CER. Generally, the trends in the surveys regarding CER point to the fact that CER in one form or another is here to stay.

Current CER guidelines are diverse and range in quality. Generally, the *50 Reporting Ingredients* are the most comprehensive guideline, however the GRI is fast becoming the standardised and most developed reporting framework and is endorsed by organisations such as UNEP and SustainAbility. GRI is a result of the need for a generic and standardised framework based around an institution monitoring and evaluating company CER performance. Many other guidelines avoid *sustainable development* and finance issues. The major problems identified are the lack of standardisation, duplication of effort and the fact that guidelines are biased towards the manufacturing industry. There are many calls for industry specific research and CER guidelines.

Organisational performance against these guidelines has shown that companies have a long way to go. Generally, companies are avoiding the tough questions because they have to do with the company's core business. Organisations are very selective in publishing quantitative data; there is a lack of benchmarking and a lack of comparability. Companies are avoiding issues like sustainable development, finance, Life Cycle Analysis (LCA), and third party verification. The reports, like the guidelines, are suffering from a lack of standardisation. The reports often focus on environmental inputs and outputs but do not actually focus on the environmental impacts these may cause. There is also a tendency for reports to concentrate on eco-efficiency. This is a vital part of the sustainability journey, however complete transparency and honesty is also required.

The various surveys have also discovered that Europe and North America are producing the most reports with the best quality. Individually, countries in Europe tend to be the most advanced CER producing nations. This could be because of the compulsory nature of CER in many EU countries. Reports in the Southern Hemisphere are a long way from the global standards achieved in the Northern Hemisphere. This is probably due to the lack of stakeholder awareness resulting from the perceived good state of the environment in this part of the world.

Specifically, there is very little literature on airline CER. Even the industry's leading groups like ICAO and IATA have little or nothing regarding CER. IATA seems document the trends developing amongst "a few" of its members. No guidance or definite policies are given, and no research (that is made public) is currently being completed by these organisations. Aviation environmental action groups, like the AEF, tend to support airline CER, but indicate that they have no definite policies on the subject.

The major theme to come out of the literature review into airline CERs is that there is no major research, consensus or policy on it. This points to the need for more research into the whole field of airline CER and provides the topic for this research report as an initial step. The focus of the current research will be an examination and critique of the CERs from reporting airline companies and a survey of the environmental managers from these carriers.

4. Problem Statement

Trends amongst the private sector reveal that many industries are beginning to take responsibility for their environmental impacts and liabilities. As part of this newly found environmental responsibility, many companies in recent times have published environmental reports in an effort to become transparent and accountable. Corporate Environmental Reporting (CER) is an effective form of environmental disclosure but it also has an effect of empowering companies to set and achieve environmental objectives.

Aviation by its very nature is an environmentally damaging industry and, as in many other industries, certain companies have started publishing CERs. What is interesting is that the literature review discovered that most of the reporting airlines are from Europe. The whole area of business and the environment is a relatively new field, and the environmental reporting phenomenon amongst the airline industry is even newer. It is thought that only 10% of airlines publish CERs. With regard to the environment and airline Company Environmental Reporting, little research has been completed or contemplated. There is an obvious shortfall in the literature on airline CER. As the literature review discovered, not even the industry's major bodies have any major policies on the subject. Some airlines, like BA, Lufthansa, SAS, KLM, Finnair, Air France and Iberia are publishing reports. However, there is no industry consensus on the practice. Information is therefore required about the trends developing within airline CER. The research will discuss the trends developing amongst the latest reports from the aforementioned carriers.

The literature review and problem statement has set the scene for the following research objectives and questions.

5. Research Questions and Objectives

The questions and objectives for the research are divided into two sets to coincide with the two arms of the research, the Survey and the CER critique. The objectives and the questions are as follows...

5.1 The Survey: Question One

What are the processes, issues, drivers and steps in the CER journey?

This question will document the airline's journey, incorporating all the stages and issues surrounding the CER process. The reasons why airlines are reporting on their environmental responsibilities are important issues to document. Specifically, CER motivators in Europe may be different from those in New Zealand. This may have important implications for the content, direction and proposed audience for reports developed in this country. Nonetheless, understanding the drivers is to understand the reasons behind the *European Phenomenon*. Specific questions relating to the CER journey will be outlined in the research design section.

5.2 The Survey: Objective One

To document the environmental journey airlines undergo during the development and publication of an environmental report.

Environmental management and reporting undoubtedly require a change in company culture. An environmental journey occurs when an airline decides to go down the path towards sustainability. This research proposes to document the environmental journey of BA, Swissair, SAS, KLM, Finnair, Lufthansa and Iberia by surveying the Environmental Managers from these carriers. Such information may help non-reporting airlines prepare organisational structures and management systems for the change in philosophy environmental concerns will bring to a company.

5.3 The Critique: Question One

What are the European airlines reporting on and how do the reports measure up against the UNEP 50 Reporting Ingredients?

Using the *UNEP 50 Reporting Ingredients*, the airline reports from Air France, British Airways, Iberia, Finnair, KLM, Lufthansa and SAS will be compared and analysed, enabling a complete picture of the current state of airline CER practices to be revealed. Critiques of the reports will help to provide the airline industry benchmarks.

5.4 The Critique: Objective One

To discover and compare the trends developing in the current European airline environmental reporting practices.

European airlines currently provide the benchmark for airline environmental reporting. It is therefore important to analyse the reports from the European carriers. As stated earlier, the *UNEP /SustainAbility 50 Reporting Ingredients* will be used to compare and analyse the latest CERs from Air France, British Airways, Iberia, Finnair, KLM, Lufthansa and SAS CERs. An examination of trends from these CERs will document current practice, indicate new trends for airline reporting and indicate possible directions for reporting in the aviation industry in the future.

Special Notes

- The airline CER critique involved Air France, British Airways, Iberia, Finnair, KLM, Lufthansa and SAS. However, for the Survey the Environmental Managers from British Airways, Iberia, Finnair, KLM, Lufthansa, SAS and Swissair were used.
- The Air France Environmental Manager could not be contacted for the Survey. The Swissair CER consists of several different publications and was not suitable for the research using the *UNEP/SustainAbility 50 Reporting Ingredients*.
- 7 European airlines were used for the CER critique. 7 Environmental Managers from European carriers were contacted for the Survey. 100% of the surveys were returned.

- While the airlines have been named in the research questions and objectives, the Environmental Managers will remain anonymous in the Survey discussion. The identities of the carriers have been revealed in the CER critique because these documents are available to the general public. This situation makes it difficult to analyse individual airline results in the CER critique with the answers given in the Survey by the airline's respective Environmental Manager.
- While the link between the two arms of research will be made, the anonymity (which was an important part of the contact with the managers) makes some specific airline-related conclusions difficult to make.

6. Importance and Benefits of the Study

As stated previously, the CER field relating to the airline industry is very new ground. The study is therefore important in terms of researching current CER trends and the issues surrounding the phenomenon. CER is largely neglected in New Zealand (no New Zealand carriers are publishing a CER). The research is therefore beneficial for this country because of the aviation industry's unfamiliarity and lack of strategic planning with regards to identifying and progressing on the CER trends developing in Europe.

Company Environmental Reporting is not new in New Zealand, but it is new for the airline industry. This research will aid the process of CER in New Zealand, and, more specifically, will highlight the environmental performance gap between New Zealand carriers and European airlines. It will give the New Zealand carriers who are beginning to recognise the importance of environmental reporting to begin their own CER journey.

7. The Survey Methodology

With the research question and objectives detailed, the constructs can now be extrapolated from these statements. Constructs enable survey questions to be developed that specifically answer the research question and objective. Refer to Appendix C for a full version of the Survey. The constructs discussed in this section form the basis for the full Survey and justify the chosen themes and questions used for the Survey.

7.1 Survey Constructs

A construct is an idea or an image specifically invented for a research project (Cooper et al, 1998). Constructs consist of simpler concepts; however, concepts and constructs can be easily confused (Cooper et al, 1998).

From the research question and objective, one can “abstract” from them concepts, which make up the greater construct. Table 1 illustrates the constructs and concepts relationship using the stated research question and related study objective.

Table 1: Research Constructs and Concepts.

Greater Construct	Related Concepts
Report Motivation Construct	<i>Internal Pressures</i>
	-Staff Pressure
	-Pressure from the Board of Directors
	-Pressure from Executive Management
	-Shareholder Pressure
	<i>External Pressures</i>
	-Pressures from Competition Airlines
	-Pressures from Alliance Partners
	-Government and Legislative Pressure
	-NGO Pressure
	-Pressures from Suppliers
	-General stakeholder pressure
	-Customer Demands
Airline Alliance Construct	<i>Environmental Compatibility Between Airlines</i>
	<i>Transfer of Environmental Expertise</i>
	-Sharing Technology, Expertise and Knowledge

	<i>-Alliance Environmental Committee/Group</i>
Decision Making Construct	<i>The Decision Makers that Decided to Report</i>
	<i>The Decision Makers During the Reporting Process</i>
CER Outcomes Construct	<i>The Disadvantages of Reporting</i>
	<i>-Legal liabilities</i>
	<i>-The cost</i>
	<i>-Bad publicity</i>
	<i>The Advantages of Reporting</i>
	<i>-A more effective and coordinated EMS</i>
	<i>-A change in company culture</i>
	<i>-Better public relations</i>
	<i>-Increase in environmental performance and accountability</i>
	<i>-New Competitive Advantage</i>
	<i>-Increases in revenues</i>
	<i>-Increases in passenger numbers</i>
	<i>-Eco-efficiency gains and cost savings</i>
CER Barriers Construct	<i>Barriers and Difficulties Airlines Face Producing a CER</i>
	<i>-Difficulty in recording relevant data</i>
	<i>-Staff Resistance</i>
	<i>-High cost</i>
	<i>-Report format difficulties</i>
	<i>-NGO criticism</i>
Marketing Construct	<i>CER a vital marketing tool?</i>
	<i>How has the marketing of the airline changed?</i>
Consultation Construct	<i>CER Consultation with Stakeholders</i>
	<i>Groups that are consulted about CER publication</i>
Future Construct	<i>Will the airline continue publishing a CER?</i>
	<i>In the future, is it possible that the CER will be integrated into the company's annual report?</i>
	<i>What does the future hold for the airlines CER initiative?</i>

The constructs identified above were then developed into survey questions. Refer to Appendix C for a full copy of the Survey used in the research.

8. Critique Methodology

Using the established *UNEP 50 Reporting Ingredients*, the research critiques and analyses the latest environmental reports from BA, Air France, KLM, Lufthansa, SAS, Iberia and Finnair. Comparisons are made between airline environmental and reporting performance. This enables current and future trends amongst the reporters to be documented. Box 1 below, details the CERs used in the study. A copy of *The 50 Reporting Ingredients* can be found in Appendix E.

A critique of this nature, using a framework such as the *50 Reporting Ingredients*, provides the researcher with a valuable tool to analyse scenarios such as the airline CER phenomenon in Europe. By using an established CER framework, the critique findings can also be compared to other studies completed using the same tool. The case study of the reporting airlines will provide a detailed analysis of current reporting trends, an information gap discovered in the literature review.

Box 1: The Airline CERs to be used in the Case Study.

- Air France Rapport Environnement 1997/98
- British Airways Environmental Report 1998
- Finnair Environmental Report 1997/1998
- Iberia Environmental Report 1997
- KLM Royal Dutch Airlines Environmental Annual Report 1997/1998
- Lufthansa Environmental Report 1997/1998
- SAS Environmental Report 1998

8.1 An Overview of the UNEP/SustainAbility 50 Reporting Ingredients.

While a comprehensive overview of the framework can be found in Appendix E, it is important to cover the 50 questions and 5 sections of the CER framework. This will give the reader some context before embarking on the CER critique discussions. The CERs were scored using a scoring protocol developed to coincide with the UNEP/SustainAbility CER framework. This scoring system cannot be published due to copyright obligations.

List 1: An Overview of the 50 Reporting Ingredients.

Management Polices and Systems

- | | |
|---|-----------------------|
| 1. Top Management Statements | 6. Goals and Targets |
| 2. Environmental Policy | 7. Legal Compliance |
| 3. Environmental Management System | 8. R&D |
| 4. Management Responsibility and Accountability | 9. Awards |
| 5. Environmental Auditing | 10. Verification |
| | 11. Reporting Policy |
| | 12. Corporate Context |

Input/Output Inventory

- | | |
|---|---------------------------------------|
| 13. Material Use | 22. Waste Minimisation and Management |
| 14. Energy Consumption | 23. Air Emissions |
| 15. Water Consumption | 24. Water Effluents |
| 16. Eco-efficiency/Clean Technology | 25. Noise and Odours |
| 17. Health & Safety | 26. Transportation |
| 18. Accidents and Emergency Response | 27. Life-Cycle Design |
| 19. Risk Management & EIAs | 28. Environmental Impacts |
| 20. Land Contamination and Remediation | 29. Product Stewardship |
| 21. Stewardship of Local Habitats and Eco-Systems | 30. Packaging |

Finance

- | | |
|---|-----------------------------------|
| 31. Environmental Spending | 34. Environmental Cost Accounting |
| 32. Environmental Liabilities | 35. Charitable Contributions |
| 33. Market Solutions, Instruments and Opportunities | |

Stakeholder Relations and Partnerships

- | | |
|---|-----------------------------|
| 36. Employees | 41. Customers and Consumers |
| 37. Politicians, Legislators and Regulators | 42. Environmental Groups |
| 38. Local Communities | 43. Science and Education |
| 39. Investors | 44. Other |
| 40. Suppliers and Contractors | |

Sustainable Development

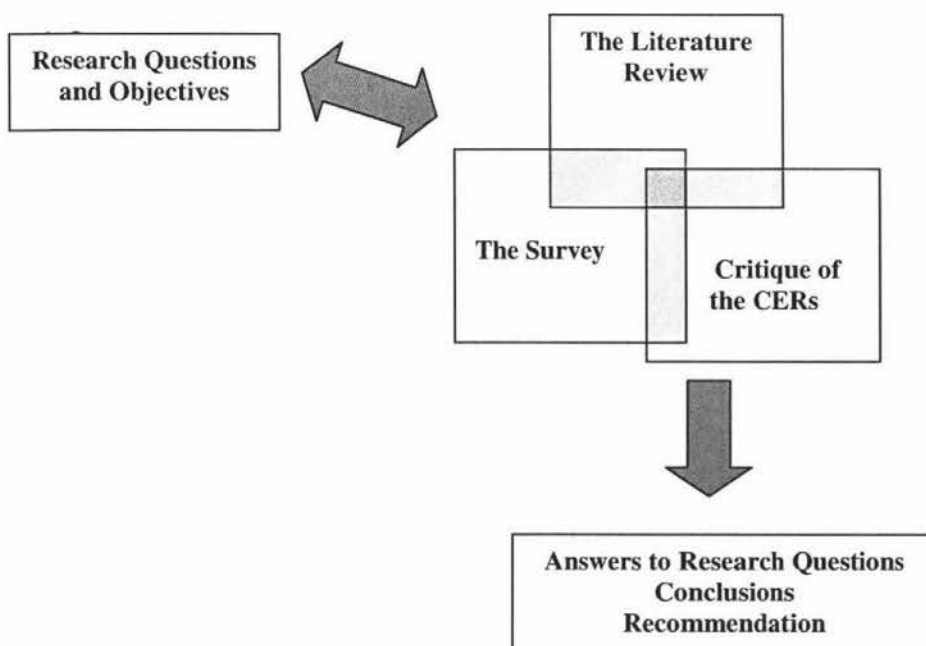
- | | |
|-------------------------------|---------------------------------------|
| 45. Technology Co-operation | 48. Global Operating Standards |
| 46. Global Environment | 49. Report Design |
| 47. Global Development Issues | 50. Visions, Scenarios, Future Trends |

9. Introduction to the Survey and the Airline CER Critique

The Survey and the airline CER critique, while two separate pieces of research, actually complement each. The literature review has set the scene regarding global reporting trends and specific aviation CER issues. It was from the literature review that the research questions and objectives were developed. The literature review identified a major “gap” in current literature regarding airline and CERs. The Survey aims to document the environmental journey behind airline CERs and the critique aims to discover reporting trends amongst the reporting airlines. As the diagram illustrates below, the literature review, the Survey and the critique are all intertwined. It is the job of the writer to link these 3 documents to discover the trends and to answer the research questions.

To begin, the literature review has set the scene for the research, which is followed by the Survey of the airline environmental managers and then by the airline CER critique. Conclusions will be reached for each separate piece of research followed by a final set of discussion points and conclusions linking the three documents together. This final discussion aims to discover the trends or the “shades of grey”, as illustrated below. It is important that the research links back with the initial objectives and questions. The research will also provide recommendations for areas that require more research and recommendations for airlines in the study and for airlines wanting to begin the *environmental journey*.

Illustration 1: An Overview of the Research Project.



10. The Survey

10.1 Introduction

This research report has been developed and written in response to the wave of Corporate Environmental Reports (CER) being published by a small cluster of European airlines including British Airways, Finnair, Iberia, KLM, Lufthansa, SAS and Swissair. As the literature review has illustrated, CER is a recent development and is even less known amongst mainstream aviation. What seems so remarkable about this group of airlines is that they all come from Europe. Only around 10% of airlines report any sort of environmental information in a CER type document. It is indeed a reflection of the European commercial and social environments that the majority of environmentally proactive airlines originate from the same continent. While undoubtedly there are other airlines reporting, no concentration of reporting airlines exists. It is from this phenomenon that the research was conceived. There is no better grouping of airlines to undertake such a study on airline CERs.

If trends are to be believed and extrapolated upon, then the *European Phenomenon* of reporting airlines is certainly a situation to keep monitoring. Coming from an industry context of global competition and major cyclical recessions and booms, strategy and visions of the future are crucially important for airlines keen on staying in business into and beyond the next millennium. Should non-reporting airlines be worried about the trends being set by European Airlines and their stakeholders? This author thinks that they should. We live in a world full of social and environmental uncertainty and change. The airlines that are reporting on their environmental and social responsibilities are the organisations that will be ready to face the challenges placed on them by increasingly concerned and demanding stakeholders. This trend is also the result of the challenges forced upon airlines by the depletion of natural resources and the destruction of global and regional eco-systems. CERs are a reflection of a company's inner culture and inner beliefs: those that are publishing now are the airlines that are on the road to accounting for the *triple bottom line* of economic, environmental and social accountability (Hawken, 1994). Those that are slow to pick up on industry trends and on society demands simply will not be doing business in the next century.

Being *green* means staying in the *black*. Environmental and social responsibility makes good economic and strategic sense. This research, based on a survey carried out amongst the Environmental Managers of these airlines, will give the industry insight into why airlines are reporting and how this affects their operations and ultimately the bottom-line. Furthermore, the Survey will provide the industry with a glimpse into future corporate strategies, giving non-reporting airlines a basis from which to begin their own environmental journeys. CER is definitely here to stay; the literature review has confirmed this belief. It is now time for all airlines to start working towards responsibilities set out by the *triple bottom line* of *sustainable development*.

10.2 Background

The Survey was sent out in October of 1999. Seven Environmental Managers from seven European airlines were chosen for the research. The seven airlines were British Airways, Finnair, Iberia, KLM, Lufthansa, SAS and Swissair. These airlines were chosen because they are annual publishers of Corporate Environmental Reports. The returned surveys were all received by the start of December 1999. The response rate for the survey was 100%.

As a condition of the research, the participants will remain anonymous, as will the specific airlines and their answers. For the sake of the research, airlines will be simply listed by designated letters. The research objective aims to explore industry trends, and not the trends of specific airlines. This research, which examines a cluster of airlines publishing CERs, will provide valuable insights into airline environmental management and environmental reporting.

A letter was sent to each of the managers via email. A copy of this letter is provided in Appendix A. Once agreement was forthcoming, a covering letter and survey were sent out to the participants with a stamped self-addressed envelope for the survey returns. A copy of this covering letter and a copy of the Survey can also be found in Appendix B and C respectively.

10.3 Survey Results, Analysis and Discussion

The Survey, found in Appendix C, asked the respondents twenty-two questions that were grouped into nine sections. These sections covered themes relating to general airline information, airline CER, reporting “drivers”, reporting outcomes, the decision making and leadership behind environmental reporting, CERs and airline alliances, CER and marketing, the barriers to environmental reporting and “the future”. The themes are rather broad and attempt to cover the airline “CER journey” as described in the research questions and objectives. The companies in the discussions are labeled, as Company A through to Company G. Anonymity was part of the contract to gain the environmental managers’ support and cooperation for this project. With regard to the Tables within the discussion, the airlines were labeled as the results from the Survey were received back in New Zealand. Company A was the first airline to return the completed survey and Company G was the last.

The aggregate results are located in Appendix D. The survey discussion is grouped into these nine sections. The first section is *airline information*.

Section One: Airline Information

Questions One and Two

Q.1 *How many aircraft does your airline operate?*

Q.2 *How many people does your airline employ worldwide?*

The first few questions of the Survey asked the participants to provide some general background material regarding aircraft and employment numbers. These results are tabulated below.

As Table 2 illustrates, the airlines publishing CERs range in size from Company A, which employs over 55,000 people and operates between 251-300 aircraft, to Company C, which employs less than 15000 people and operates less than 50 aircraft. The second biggest airline was Company E with 25001-30000 people and 151-200 aircraft, followed by Company B with 25001-30000 people and 101-150 people. Company G had between 20001 and 25000 employees and between 101 and 150 aircraft. Company D and Company F, were second smallest airlines with less than 15000 employees and around 50-100 aircraft.

These figures point to a very large disparity between airline size in the sample. The difference between a company with 55,000 employees with around 300 aircraft and an airline with less than 15000 and less than 50 aircraft is quite significant. This indicates that airline size appears to have no bearing on the publication of a CER. No matter what the environmental impact, and no matter how large these impacts are, all of the airlines are reporting. It would seem logical that airlines with small operations might publish CERs because their respective impacts are comparatively minor when compared to the large operators. However, the airlines publishing CERs are all international carriers, but range from small to very large operators. It would seem that environmental responsibility moves beyond company size.

Table 2: Airline Background Information

Airline	No. of Aircraft	No. of Employees
Company A	251-300	>55000
Company B	101-150	25001-30000
Company C	<50	<15000
Company D	50-100	<15000
Company E	151-200	25001-30000
Company F	50-100	<15000
Company G	101-150	20001-25000

Summary of the Major Findings

- The airlines in the Survey range from very large to comparatively small.
- Airline size has no bearing on an airline's suitability and responsibility for publishing a CER. All airlines should be publishing one.
- Only a critique of the airline CERs can discover if CER quality is correlated to airline size.

Section Two: Corporate Environmental Reporting

Questions Three, Four and Five.

Q.3 When did your airline publish its first environmental report?

Q.4 Did your airline refer to any "external recipe" during the development of its CERs?

Q.5 To what reporting framework(s) did your airline refer?

Question 3 refers to the year the first CER was published by the airline. Question 4 asked the respondents to respond positively if their airline used any framework (normally an external publication) to assist them in developing and publishing an environmental report. Question 5, for the relevant airlines, asked the respondents to name the frameworks used by the company in assisting them with developing a CER. This question is an important one, as many airlines with certified Environmental Management Systems are often required to publish an environmental document of some description. There are also many CER frameworks in existence and it would be interesting to discover which framework, (if any) the airlines are utilising.

The results for question 4 show that 4 (57%) of the respondents referred to some kind of framework, while 3 airlines (43%) state that they did not. The 57% majority stated that they did use a CER framework. As the literature review discovered, there are several frameworks and "reporting recipes" available. The majority of airlines are using a CER framework. However, several respondents commented that there are no airline-specific frameworks available and current recipes are not particularly suitable for airlines or service industries. This may be the reason why 43% of the respondents did not use a framework, and of the 57% of airlines that did, only 3 used an external recipe. Company E used an internal framework (refer to Table 3). This is a pressing issue and one that may hamper future framework suitability or utility. Airlines might be more inclined to publish CERs if there was an aviation-specific reporting recipe because a) it would help develop an initial or annual CER document and b) airlines would be more likely to publish a CER if it is to be judged using an aviation-specific framework. The literature has already

demonstrated that current frameworks are biased towards manufacturing industries and do not take into account aviation-specific issues. Why would an airline want to publish a public document, if it was to be critiqued or judged using a manufacturing framework? The lack of aviation-specific material may restrict the entrance of some carriers into the fields of environmental management and environmental reporting.

Table 3: Results from Question 4. “Did the Airline Refer to Any CER Framework?”

Yes (%)	No (%)
4	3
(57%)	(43%)

Table 4 shows that out of the four airlines that utilised a framework, three used an external recipe and one used an internal framework. Out of the three airlines that used an external framework there was a mixed result in terms of the type of recipe used. Two companies used the ISO 14001 Environmental Management System (EMS) standard as assistance in developing the CER. One company used the European EMAS EMS certification standard. Both of these EMS standards require companies to publish an environmental document for public disclosure. However, companies do not need to publish a full CER under these formal certifications, so these 3 companies have gone well above and beyond the certification requirements by publishing a CER.

Company A was the only company that utilised stand-alone CER specific frameworks. Company A used the UNEP and SustainAbility 50 Reporting Ingredients framework and the Global Reporting Initiative (GRI). Both of these documents have been discussed in the literature review and would be very useful frameworks to assist companies with developing a CER. For airlines, as the literature review discussed, the GRI is the newest recipe and might be more useful than the UNEP system, which is biased towards manufacturing industries.

Company E referred to an internal framework, which was used for all company reports (annual and environmental). No other details regarding this framework were given.

Table 4: The Year of the First CER and the External CER Frameworks Used.

Airline	Year of First Report	Framework(s) Used
Company A	1991	UNEP/SustainAbility and the GRI
Company B	1997	ISO 14001
Company C	1990	None Used
Company D	1998	None Used
Company E	1996	Internal Framework Used
Company F	1991	ISO 14001 and EMAS
Company G	1994	None Used

The table above also shows that out of the 7 companies, no airline published a CER before 1990. The latest “first report” was published in 1998. There is also no correlation between the year of the first report and frameworks used. The earliest reporting company first published a CER in 1990 (Company C) and used no framework for its CER. The latest CER (Company D) did not use a framework either. This analysis reveals that CERs are definitely a 1990s phenomenon and that, on the whole, most CERs were developed in the mid to late 90s, showing, as the literature review discussed, that airlines are quite new to CER. Qualitative comments given for question 3 also show that airlines have published some environmental information in company annual reports as early as 1985. However, the first CERs were not developed until the 1990s.

Summary of the Major Findings

- Four airlines used a framework, while one of these was an internal reporting recipe. 3 airlines categorically stated they have not used an external recipe.
- Two airlines used ISO 14001; one of these used EMAS. One airline used both the SustainAbility and GRI tools. There seems to be no trend amongst airlines for favoured framework. Some respondents indicated that the lack of aviation-specific frameworks was a dilemma for the industry thus far.
- Specific frameworks may encourage more airlines to begin reporting. The daunting task of CER publication maybe made easier with an industry specific tool. In addition, an aviation-specific reporting recipe and scoring system will critique airline CERs more fairly than contemporary measures do. This might act as the catalyst to allow airlines, scared of public scrutiny and bad publicity, to publish CERs.
- Most airlines published environmental information in company annual reports in the 1980s, however no airline published a CER before 1990. Most “first” CERs are a mid 1990 phenomena.
- There is no correlation between early CER starters and frameworks used. Some airlines use frameworks some do not. It bears no relationship with advancement in the area.

Section Three: CER Drivers

A question to emerge from the literature review was the one relating to why companies are reporting. This question is particularly relevant for this study due to the fact all airlines in the Survey are from Europe. The findings from this section may reveal some of the factors in Europe and within companies operating in Europe that result in a cluster of companies wanting to publish a CER.

Question Six

Q.6 What were the external factors that encouraged your airline to publish a CER?

Question six asked respondents to rank a series of *external drivers* that may have encouraged the airlines to publish CERs. The results shown in Table 5 reveal that, after the rankings were correlated, consumer/customer pressures and stakeholder pressures were the highest-ranking drivers for airlines in Europe. The third most prominent *driver* was government legislation regarding CER and environmental management, followed by competition amongst airlines, NGO pressures. Airline alliance pressures and supplier pressures were equal, followed by voluntary governmental initiatives. Qualitative comments also listed the media and the scientific community as *other* drivers.

Consumer and Stakeholder Pressure

Several respondents also stated that pressures came from many sources, including employees (refer next question) and general public pressure. One airline found that its environmental image was far worse than its actual environmental performance. A CER was a way of rectifying this disparity.

Table 5: The Ranked External “Drivers” for Publishing CERs.

Ranking	External CER “Drivers”
1	Consumer and Customer Pressures
2	General Stakeholder Pressures
3	Legislation
4	Competition from Airlines
5	NGO Pressure
6=	Airline Alliances
6=	Supplier Pressures
8	Voluntary Governmental Initiatives
9	Other Factors: The Media/Scientific Community

Anecdotal evidence from the literature review suggests that European consumers and societies are far more environmentally aware than other communities. It is clear from the research that consumer and stakeholder pressures are forcing European airlines to publish CERs and act more responsibly towards the environment. This may explain the *European Phenomenon*; airlines in other parts of the world do not face stakeholders with similar concern for the environment. This also emerged from the literature review from the SMEC survey of Australian CERs. Australasian CERs in the SMEC survey performed poorly when benchmarked with European CERs. It would seem that consumers and stakeholders share some of the power in shaping the performance and actions of airlines and business in general. Stakeholders and consumers, through their spending habits, have the ability to influence airlines. This may explain why airlines in New Zealand are well behind their European cousins. New Zealand stakeholders are not as concerned or as educated about environmental issues as European societies. Environmental awareness in Europe is probably a direct result of the obvious environmental problems that come with large populations on small landmasses. New Zealand, while suffering from environmental problems of its own, does not have environmental impacts that are as obvious. Hence the lack of proactive environmental awareness and education.

If this is the case, environmental awareness in New Zealand will be growing, as environmental impacts, both global and local, become more pressing. Carriers in this part of the world should be aware of the power consumers and stakeholders can have over their actions and responsibilities. As New Zealand stakeholders become more aware and educated about business and the environment, Australasian carriers can expect, as in the *European Phenomenon*, to be driven towards environmental and social responsibility measures such as the publication of CERs.

Legislation

Another significant *driver* was legislation. Several European countries, as discussed in the literature review, have compulsory CER publication (e.g. Scandinavia). This is clearly a *driver* for airlines operating in Europe. The results indicate that legislation may motivate other foreign carriers to act in the same way as those carriers that are effected by legislation. Airlines are an international business and they must comply with most of a foreign country's laws; this includes a country's environmental regulations. The literature review discussed compulsory vs. voluntary CER legislation. The debate centres around the idea that laws set minimum standards and that business, left to its own devices, will always perform better than mandatory regulations. The European airlines clearly show that these ideas are wrong. The European airlines, many of which have to publish CERs compulsorily, are some of the best reports in the world (as will be revealed in the CER critique). Airlines themselves rate legislation as a major CER *driver*. Perhaps opponents to compulsory legislation or governmental intervention in the environmental management domain underestimate the effectiveness of regulatory motivators. It would seem that legislation in one country might also have a *trickle down* effect for other foreign carriers, although this is probably related to airline competition as well (this factor ranked just behind legislation).

Competition from Airlines

Michael Porter, in his theories of competitive and comparative advantage, partly explains clusters of industries such as Silicon Valley on competition. Competition, Porter explains, breeds innovation, competition and specialization. Competition forces companies to constantly modify value systems in order to retain competitive advantage. The *European Phenomenon* is probably no exception to this theory. European airlines state that competition amongst the other carriers is major *driver*. The lack of competition in other areas of the globe, regarding environmental performance, may explain why other airlines have failed to notice European trends, which, for some of the European carriers, are almost a decade old.

NGO Pressure

Non-Governmental Organisations (NGOs) were the next most prominent "driver", followed by airline alliances and supplier pressure. NGOs such as AEF, IATA, ICAO, UNEP and CERES obviously drive airlines (to some extent) into some kind environmental responsibility, through their campaigns, conferences and advice to business. The ranking in question six for NGOs indicates that airlines are certainly listening to some of these groups.

Airline Alliances and Supplier Pressure

Airline alliances are very popular joint venture activities at the current time. Global alliances aim to reduce risk, increase *economies of scale* and *critical mass* and seem to have become pre-dominant in the late 1990s. The question was asked in the later half of the Survey whether airlines in alliances should share the same level of concern for the environment. As shall be discussed, airlines overwhelmingly responded positively. The section on alliances has shown similar findings to this question. Alliances seem to be excellent vehicles for raising the environmental awareness and environmental performance of partner airlines that in the past have been behind other alliance players. The alliance section also indicates that airlines are willing to share information and expertise in order to bring all airlines up to the same high environmental and social responsibility levels.

Voluntary Government Initiatives

Voluntary government initiatives ranked at the bottom as CER drivers. This may have answered the question recently posed in New Zealand regarding the introduction of compulsory or voluntary CERs. Airlines have clearly stated that voluntary initiatives are not as effective drivers as consumer pressure or legislation for instance. From anecdotal opinion, many in New Zealand believe CER should be voluntary so that business is not shackled with bureaucracy. In terms of a *driver* for CER, this concept is flawed. Business responds better, according to these results, from legislation (effective legislation) and not from voluntary agreements.

“Other Drivers”

It would seem that bad publicity regarding aviation and its environmental impacts may force companies to “clean up their act.” Science is rapidly discovering the culprits for

such phenomena as global warming and ozone depletion. Bad publicity, as well as public education, may act as a catalyst for renewed environmental concerns. Of course, public information and new material from science may also sway public opinion against companies, which is a stronger *driver* than just the media and science. This points to the fact that many of the drivers are tightly inter-woven.

Summary of the Discussion

- Consumers, customers and stakeholders have the most power for shaping the airlines activities and emphasis. European environmental awareness, possibly spurred on by pressing environmental issues in Europe (population and resources driven) forces European airlines to be more responsible. In Australasia, where company CERs performed poorly with European efforts, environmental awareness is less pressing due to the less obvious human related environmental impacts. This phenomenon may indicate why carriers in this region and in others are not as environmentally advanced as those carriers in Europe.
- Legislation ranked third in the Survey. This finding contradicts many arguments, recently published in New Zealand, about how compulsory CER legislation might reduce company innovation in this area. It is clear that environmental legislation in Europe has had the opposite affect. European CERs generally are the best in the world.
- Competition is seen as an effective *driver*. This may go some way to explaining the reasons behind the *European Phenomenon*. Due to competition in the industry, company values must shift to retain competitive advantage in a market dominated by customer and stakeholder attitudes and spending habits. European airlines seem to be advancing upon each other in the area of EMS and CER like it was one more addition to battlefield of airline competition.
- NGO pressure ranked behind competition. It is clear that the work of the NGOs is not unnoticed. NGO publicity must also be linked to stakeholder opinion (which ranked in the top two of external drivers).
- Airline alliances and supplier pressures ranked sixth equal. Airlines feel that it is important that all airlines in the partnership have the same regard for the environment. The reasons for this will be explained in Section 6. This feeling is also transferred to the company's suppliers and distributors. There seems to be a trend to ensure that the entire life cycle of the airline business reflects the parent company's concerns and aspirations.
- Voluntary government initiatives ranked around the bottom of the list. The literature review discussed the pros and cons of compulsory and voluntary legislation for CER.
- The Survey discovered that companies simply would not respond to voluntary initiatives as much as the higher ranked drivers. This refutes the arguments regarding business and the voluntary initiatives discussed in the literature review.
- Other drivers were science and the media. As science reveals what has affected the environment, more companies are responding to their impacts. The media tends to

highlight bad publicity, which links in with stakeholder and consumer power in the CER and environmental arenas.

- One airline manager stated that their environmental image was far worse than their actual environmental performance. This bad public image may have effected the company's reputation and economic bottom line. This shows the power of the media, public perception and the power of consumer spending habits. A CER was seen as a way of influencing public opinion back to a closer level of reality.

Question Seven

Q.7 What were the internal factors that encouraged your airline to publish a CER?

Question 7 asked the Survey respondents to rank and indicate the main internal drivers for the CER initiative within the airline. The results, shown on the next page, were very interesting. The main drivers at first equal were staff pressures and the Environment Department. The next placing was the Board of Directors and Executive Management. At 5th place, was shareholder pressure. *Other* "drivers" indicated by the respondents were pressures from the marketing department.

The literature review revealed that the research places some emphasis on shareholders as a group motivating companies to publish CERs. As the Survey has discovered, airline shareholders have not been the main drivers for these companies. It is very interesting that staff pressures and Environment Department pressures have been the main internal drivers of the CER process. The literature review states that employees want to work for a company that is environmentally and socially responsible. Employees want to be proud of their company. It would seem from the evidence that staff play a pivotal role in driving the CER process. It is unsurprising that the Environment Department is one of the top pushers of CER, however what is interesting is that this department is placed ahead of other "drivers" such as the Executive Management and the Board of Directors. This may indicate that the Environment Department has some 'power' within the airlines. This would also indicate the level of autonomy or weight such a department has and points to the type of company that publishes a CER. Good management and leadership comes from delegation of power and authority, it would seem that at the forefront of the CER process are the company's employees and the Environment Department, closely followed and supported by the Executive and the Board. One of the recipients backed this idea up by stating that the CER process is a partnership between staff and management. The literature review stated that for a company to begin an environmental journey it must have a complete culture change. It could be argued that in these companies the culture change has started with a close partnership between all of a company's employees, the Environment Department, the Executive and the Board, with the employees and Environment Department leading the way.

Table 6: The Ranked Internal “Drivers” for Publishing CERs.

Ranking	Internal CER “Drivers”
1=	Staff Pressure/ Environment Department Initiative
3=	Board of Directors/Executive Management
5	Shareholder Pressure
6	Other: Marketing Department

The results also indicate how important it is for a company to have a separate and functional Environment Department. Without a doubt, this group is the catalyst for many of the innovations along an environmental journey. Airlines wanting to copy the results of these airlines would be justified in setting up a separate Environmental Department to act as a catalyst for the process towards publishing a CER as part of a broader Environmental Management System (EMS).

One participant also noted that the Marketing Department played a pivotal role in the CER development process. The literature review illustrated certain opinions regarding the importance of a CER and general environmental management as marketing tools to retain competitive advantage in the industry. Corporate citizenship and good stakeholder relations undoubtedly have an effect on an airline's marketability. It would seem only natural that the Marketing Department might want to improve the company's reputation through public disclosure documents such as a CER. One company representative has already stated that their airline's marketing image was being tarnished by an unfounded belief that the airline was environmentally and socially irresponsible. A CER is seen as a tool to improve this image and market standing by revealing to the company's stakeholders the truth based on real facts. To back this statement up, respondents were asked later in the Survey if their CER was used as a marketing tool. The majority stated “yes”; their CER was used as a marketing tool.

Summary of the Discussion

- The main internal drivers were staff and the Environment Department, followed closely by the Executive Management and the Board of Directors. This indicates the importance of staff involvement in any change of corporate culture. It would seem the process must be lead by the staff, closely supported and guided by the Environment Department, Executive Management and the Board. Respondents claimed the process was a team effort or a partnership. Without support from any of the parties, the process might not have been so successful.
- The Environment Department is crucial to any change towards environmental responsibility. As a main *driver* of the CER process, they are the catalyst and the experts in the area. Airlines without such a department would be wise to separate the environmental functions into a department that exists in its own right, which covers the full scope of the airline's activities.
- Shareholders were the next internal *driver* of the CER process, which is surprising because it was believed from the readings in the literature review that shareholders played a bigger part in the process. This may indicate that shareholders are still accessing investments on the single bottom line of economics, rather than the *triple bottom line* of economic, environmental and social responsibilities.
- CER is a marketing tool used by airlines to improve image and stakeholder relations. It is therefore appropriate that the marketing department would want an airline to publish a CER, particularly if an airlines environmental reputation was worse than reality.

Section Four: CER Outcomes

Question 8 and Question 9

Q.8 What are the benefits your airline has experienced from publishing an environmental report?

Q.9 Has the company experienced any disadvantages from publishing CERs?

Question 8 asked the airline managers to indicate from a list all of the benefits the airline has experienced from publishing CERs (refer to appendix C for a full copy of the Survey).

The results below show that all the airlines have experienced better public relations since publishing CERs. This result is in-line with the literature review findings regarding CERs and their ability to improve public perceptions. The idea that was illustrated in the last Survey question (regarding the link between marketing departments wanting to publish

CERs) is also a part of this public relations theme emerging from the Survey. What is interesting though, is that only one response was recorded for the “new marketing competitive advantages” and none were recorded for “increases in revenues and passenger numbers”. This may indicate that, while a CER results in better public relations, no evidence has emerged whether this improved perception results in increased marketing advantages and increased passenger numbers and revenues. This may also be indicative of the competition in the region. *First mover* status for CERs is long gone in Europe; many of the main airlines are now publishing a report. This might explain why no new marketing advantages have emerged.

Table 7: Benefits from Publishing CERs.

Benefits	Responses	Percentage of Airlines
A more effective and coordinated EMS	4	57%
Eco-efficiency gains resulting in cost savings	2	29%
Better public relations	7	100%
New marketing competitive advantages	1	14%
New operating competitive advantages	0	0%
A change in company culture	4	57%
Better environmental performance & accountability	5	71%
Increases in revenues	0	0%
Increases in passenger numbers	0	0%

71% of the airlines have improved environmental performance and accountability. As the literature review discussed, CERs are not a static document, they are a working, living document that helps focus companies to achieve environmental goals and objectives. The actual development and publication process, as shown in the results below, show that the CER is a method of focusing resources, improving environmental performance and accountability and achieving goals. Companies are motivated to achieve through the CER process. CERs set in history the company’s past performances and sets the pace, the goals and direction for the future.

57% indicated that the CER resulted in a beneficial change in company culture. The CER process has a way of focusing the company and bringing staff together. As discussed earlier, environmental management is a team game. It is not surprising that company culture changes when all of a company’s employees drive the CER process, closely supported by management (taken from question 7 results). What is interesting is the fact the publication of a CER has enhanced the company culture for the better in many of these airlines.

Companies also reported that a CER created a more effective and coordinated EMS. 57% of respondents reported that the CER process had this affect on their companies. This result supports the finding that CERs result in improved environmental performance. An

EMS is the tool used to achieve this improved performance, as stated earlier CERs focus resources and highlight areas within the company and systems that need improvement. CER is a tool within a tool. Public disclosure is one result, but an improved EMS seems to be another. As discussed in the literature review, a CER is seen as the “flagship” of the EMS. Nevertheless, these results point to a much deeper meaning. The process of collecting, interpreting and presenting a company’s environmental data is in itself therapy to massage a better overall EMS. The momentum for the continuous cycle of self-improvement comes from publishing and circulating CERs.

Only 29% of respondents reported eco-efficiency gains and cost saving as a benefit of a CER. Airlines are definitely saving money through improved environmental performance, resource savings and the like. Whether this change can be linked to a CER and in-turn to the EMS is another matter. The literature review has revealed that companies do make gains from improved environmental performance. The link between CER and eco-efficiency gains cannot be established. However, the link between EMS and eco-efficiency gains and cost savings would be a different outcome. This link has already been established.

CER was not reported as resulting directly in any operational competitive advantages, increases in revenues and passenger numbers. The marketing benefits of a CER have already been established; that benefit is clear, but it would seem highly probable that this phenomenon would eventually translate into “more bums on seats”. A respondent indicated that this link is difficult to establish because passengers are generally not surveyed to discover why the passenger chose to travel with their particular airline. An improved public image (from a company’s environmental initiatives) could be correlated to an increase of business from those who think that environmental and social responsibility is of sufficient importance to select one airline over another.

Question 9 asked respondents to list any disadvantages the airline had experienced from publishing CERs. The respondents were unanimous in their answer; no disadvantages were encountered by any airline. The literature review placed much emphasis on the fact that the legal sector was opposed to CER due to the legal precedents and liabilities created from public disclosure. The airlines did not experience any such disadvantage. Contrary to popular belief, airlines should not be afraid to publish CERs for fear of legal recriminations.

Summary of the Discussion

- All airlines have experienced improved public relations since publishing a CER. However, only one airline found that it created any new marketing advantage and no airlines reported any increase in passenger numbers and revenues. However, this result probably reflects the difficulty in proving such a link, as it is clear that most airlines experienced improved environmental performance and more effective EMSs.
- Only 29% of airlines reported eco-efficiency gains after publishing a CER. However, it is proven that in many cases, EMSs do result in cost savings. The link between CER and these gains would be difficult to establish.

- It is clear that CER is more than an output; it is a tool within a tool. CER is a process in a continuous journey of self-improvements. A CER sets the challenges and focuses the resources and points companies in the right direction. There is a definite link between CER and a more effective EMS resulting in improved environmental performance.
- No airline experienced any disadvantage from publishing a CER, contrary to the literature review findings.

Section Five: Decision Making and Leadership

Question 10 and Question 11

Q.10 Regarding the company's first environmental report, where did the leadership and momentum for the publication of the CER come from?

Q.11 Regarding the company's latest environmental report, where did the leadership and momentum for the publication of the CER come from?

Question 10 and 11 asked participants to compare the leadership and decision making groups for the company's first CER against the leadership and decision making groups for the company's latest CER. Section 5 aimed to document the journey of decision making from the company's first to the company's latest CER to see if any progression or change is experienced as CER publication becomes an integral part of the airline over time.

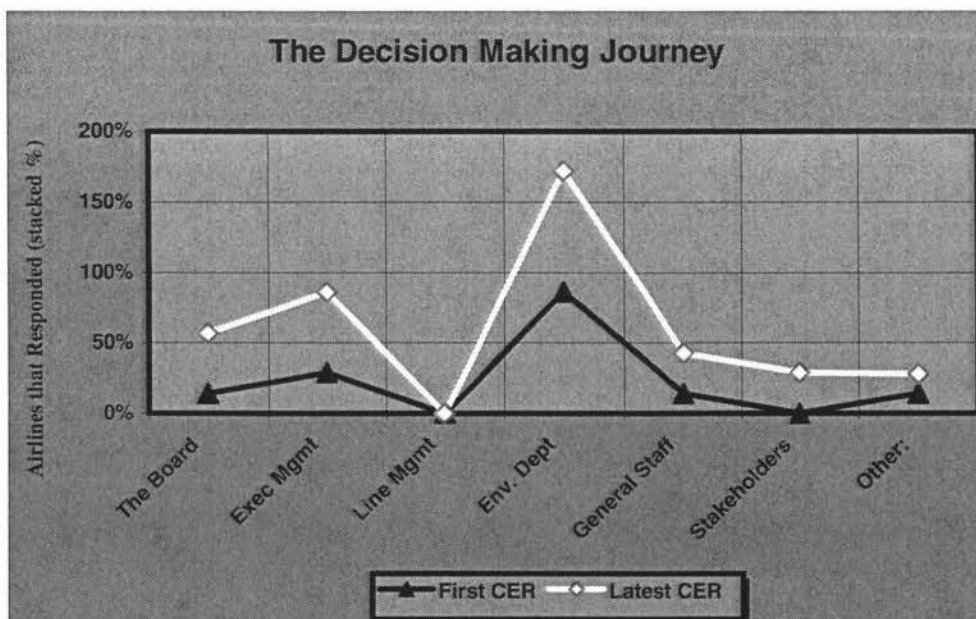
The Environment Department as shown in Table 8 below, undoubtedly controlled the first CER project. 86% of the airlines responded that the Environment Department played a major leadership role in the publication of the CER. The Board and Executive Management in most airlines played a smaller role. Line Management played no leadership role and the employees were generally excluded from any decision-making process during the publication of the company's first CER. One airline stated that the public information department played a pivotal role in the decision making process for the first CER.

Table 8: Results for Question 10 and Question 11.

The Leaders and Decision Makers	First CER (%)	Latest CER (%)
The Board of Directors	14%	43%
Executive Management	29%	57%
Line Management	0%	0%
Environment Department	86%	86%
General Staff	14%	29%
External Stakeholder Groups	0%	29%
Other: Public Information Department	14%	14%

When environmental management and CER were new to companies, it seems only logical that the people with the knowledge and expertise in the area lead the first project. The figures seem to indicate that this indeed was the case.

However, the latest reports show a different picture completely. While 86% of companies indicated that the Environmental Department played a decision-making role as in the first publication, more groups have increased their stake in the process. It seems that as airlines have embarked on this journey, more and more groups have become part of the leadership and decision making process. Graph 7 illustrates this phenomenon vividly. The stacked graph has moved up the y-axis, indicating that more groups have increased their stake in the process.

Graph 7: The Decision-Making Journey. The Leaders of the Past vs. The Decision-Makers of Today.

Graph 7 and Table 8 illustrate the leadership and decision-making journey between the first CER publication and the latest CER. While the Environmental Department retains its role as a decision-maker for 86% of the airlines, all of the groups, excluding Line Management (which stays on 0%), have increased in their roles as decision-makers and leaders in the CER process. The Board of Directors' involvement has increased from only 14% of the airlines to 47% of them. Executive Management leadership has jumped from only 29% of the airlines to 57% of the respondents. Staff input has increased from 14% of the airlines to 29%.

What does this trend indicate? It would seem that the expertise and therefore leadership was coming mainly from the Environment Department. Only a few airlines reported Executive, Board or staff involvement in the early days. As time has gone on, and environmental management has become more mainstream and more important within the company, more groups have become more involved in the leadership and decision making. This trend is concurrent with the earlier findings relating to the teamwork required for successful Environmental Management Systems and CERs.

The stake each of these groups has in the successful publication of a CER, not just as a publication but as a process in its own right, has increased over time. The CER journey shown in Graph 7, is an indication of the change in culture airlines have experienced as the ideals behind CER and its momentum spread throughout the entire company.

Summary of the Discussion

- It would seem that the expertise and therefore leadership was coming mainly from the Environment Department. Only a few airlines reported Executive, Board or staff involvement in the early days. As time has gone on, and environmental management has become more contemporary and more important within the company, more groups have become more involved in the leadership and decision making. This trend is concurrent with the earlier findings relating to the teamwork required for successful Environmental Management Systems and CERs.
- In the beginning, when environmental management and CER were new to companies, it seems only logical that the people with the knowledge and expertise in the area lead the first project.
- The stake each of these groups has in the successful publication of a CER, not just as a publication but as a process, has increased over time.
- This journey is an indication of the change in culture the airlines have experienced as the CER ideals and momentum spread throughout the entire company.

Section Six: CERs and Airline Alliances

Questions 12, 13 and 14

Q.12 Is it important that airline alliance partners share the same level of concern for the environment?

Q.13 Is your airline working with and/or sharing environmental technology and knowledge with its alliance partners?

Q.14 How is your airline working with its alliance partners?

Question 12 asked the question “Is it important that airline alliance partners share the same level of concern for the environment?” Overwhelmingly, 86% of the respondents stated “yes” it was important, only one airline (14%) said “no”.

Table 9: Results for Question 12.

Yes	No
86%	14%

Question 13, closely connected to the last question, posed the question “Is your airline working with or sharing environmental technology or knowledge with its alliance partners?” To this question, 86% responded “yes” positively and only 14% responded negatively to the question.

Table 10: Results for Question 13.

Yes	No
86%	14%

The overwhelming trend from these two questions is one of cooperation. Airline alliances seem to be working together to get all partners up to the same level of environmental performance. The qualitative comments that went with these questions add weight to this argument and reasons why the airlines are working together. Several airline representatives explained why their companies were working with partner carriers, stating that it was all about “brand protection and enhancement” and, for this to occur, alliances must be environmentally compatible. One stated that environmental concerns were actually a formal part of the alliance while another respondent said that environmental compatibility was crucial for an “harmonious marketing image”. The respondent continued by saying it was also crucial that the partner airlines had the same

company culture and that the public perception of the alliance is extremely important. Another survey participant said that for alliances to work, internal processes and procedures must be “homogeneous”. The participant added that the external image of an alliance is only as good as its “worst performer”.

Only one airline representative said that the environment was not a priority in alliance negotiations because environmental concerns differed across cultures, making it a hard issue to cooperate on in an alliance. However, the participant conceded that in the long term environmental concerns would be increasingly important in “establishing the value of an alliance brand”.

It is apparent that alliance compatibility is vital for brand protection, external image and internal harmony; environmental concerns are a significant part of alliance partnerships. If airlines do not have levels of environmental concern that are compatible and if airlines do not have the same culture, then alliance *synergies*, value and brand image are not maximized. Because airlines do not enter alliance partnerships with the same level of environmental concern, airlines that are advanced in the issues are prepared to help partners that are not.

Question 14 asked the participants that answered “yes” to the question relating to the sharing of environmental knowledge, what exactly their company shared with alliance partners.

Table 11: What are the Airlines Sharing with their Alliance Partners?

Shared Item	Airline Responses (%)
Sharing technology	33%
Joint research and/or projects	16%
Sharing expertise and knowledge	83%
Formed a joint working group/committee	50%
Sharing human resources	0%

The Survey discovered that 80% of the airlines that responded positively to question 13 are sharing expertise and knowledge, while half of the six airlines have formed an committee or working group with alliance partner(s). One third of the group are actually sharing technology, while only 16% have joint ventures or research underway.

The figures show that airlines are keen to work together; however the trends show that airlines are more likely to share expertise and knowledge and set up committees rather than actually share tangibles such as technology and human resources. Joint research projects do not seem to be popular amongst this grouping of airlines either.

Summary of the Discussion

- The majority of airlines in the Survey think environmental compatibility is important for alliances. The majority of respondents have some joint program with alliance partners regarding environmental management.
- Qualitative comments from the participants indicate that alliance compatibility is important to protect the alliance brand and to enhance it. Environmental compatibility is important for a harmonious marketing image.
- Airline cultures must be the same for ventures to capture synergy. Airline value systems must be the same. Airlines do have different value systems when they join such a partnership, hence the reason why these airlines work together to ensure some sort of *synergy* is produced through company cooperation.
- Internal processes and procedures must be homogenous; this must include compatibility between each carrier's environmental policies. The alliances' external image is only as good as the worst environmental performer. Hence the reason airlines work together to raise performance standards.
- Airlines tend to favour sharing intangibles such as expertise, knowledge and by forming working groups. Tangibles such as technology joint ventures and human resources are not very popular resources to share.

Section Seven: Marketing and CER

Question 15 and 16

Q.15 Does your airline market itself as a company that cares for the environment?

Q.16 Is your airline's CER used as a marketing tool?

As discussed previously, the airlines are generally using the CER and general environmental responsibility to improve the brand image of the company. Questions 15 and 16 confirm this trend. Question 15 asked the companies if they marketed themselves as companies that cared for the environment. Question 16 asked if the CER was used as a marketing tool. 71% of the respondents indicated yes to both questions, 29% responded negatively. Refer to Tables 12 and 13 for the tabulated results.

Table 12: Are the Airlines Marketing Themselves as Environmentally Responsible?

Yes	No
71%	29%

Table 13: Are the Airlines Using their CERs as Marketing Tools?

Yes	No
71%	29%

These results confirm the benefits already discussed in the report, relating to brand image improvements. CERs are a good means of communicating with stakeholders and show concerned parties that the airline is trying to act with the environment in mind. It would seem only natural that this differentiation is marketable. Consumers are concerned for the environment. Informed consumers should be able to decide what airline they utilise based on variables such as environmental performance.

Summary of the Discussion

- The majority of carriers market themselves as companies that care for the environment. The same airlines use their CER as a marketing tool.
- This trend confirms earlier findings relating to the public image benefits associated with producing CERs (question 8). Similar findings were discussed in the literature review.
- Consumers that are concerned for the environment should be able to choose airlines that are more environmentally and/or socially responsible than other carriers. Airlines differentiate themselves from other carriers on such variables as social and environmental responsibility. It is only fair that these differentiations are then marketed to stakeholders.

Section Eight: Barriers to CER

Question 17, 18 and 19

- Q.17 What were the barriers your airline experienced when developing its first CER?*
- Q.18 Have the barriers identified in question 17 changed since the publication of the first CER?*
- Q.19 What were the barriers your airline experienced when developing its most recent CER?*

Section 8, relating to barriers to CER resulted in some very interesting findings. The literature review discussed only one barrier to CER. This barrier was legal and financial sector disapproval of environmental disclosure due to legal liabilities environmental disclosure was supposed to create.

Question 17 asked respondents to list the barriers the airline encountered when developing its first CER. Question 18 asked if these barriers had changed since the first CER, and question 19 asked the airlines that answered positively to the last question to list the current CER barriers.

For the development of the first CER, two airlines actually reported that they faced no barriers at all. However, all the figures quoted in Table 13 and 14 are calculated from all of the seven airlines. This will keep in context the barriers faced by the entire group. For the airlines in the study, 29% of the participants found it difficult to measure and record content for the CER. This refers to environmental data such as resource consumption, emission data and waste outputs. At this stage CERs are new for airlines, many collection processes and technological advancements were still (and are) being developed. It is normal for airlines to encounter such problems, particularly for very large operations with scattered operations. There are also many debates about the accuracy of some collection methods.

43% found that the cost of producing the CER was a barrier. This is no surprise. The capital costs of a new venture are always higher in the first year. Subsequent years tend to be less resource intensive as companies develop expertise in the areas concerned.

Table 14: The Barriers Experienced when Developing the First CER

The Barriers	Responses (%)
Internal staff resistance	14%
Finance/legal sector resistance or disapproval	0%
Monetary costs/limited resources	43%
NGO Criticism	0%
External Stakeholder Criticism	0%
Difficulty in measuring and recording CER content	29%
Report Format Difficulties	0%
Other	0%

No airline found that they had any difficulty in organising, formating and producing a CER publication. Only one carrier (14%) found any internal staff resistance to the development of its CER.

Barriers from the legal/finance sector were non-existent, as were barriers from NGOs and external stakeholders. This is an interesting finding for airlines. The literature review found that companies might face barriers from the finance and legal sectors due to the apparent legal liabilities created from environmental disclosure. However, the airlines have found this not be a problem (for both the first and most current CERs).

Traditionally, companies have been cautious of disclosing environmental data for fear of reprisals and bad publicity from NGOs and stakeholder groups. This fear is certainly founded in some reality. In the past some stakeholder groups and NGOs have been highly critical of “big business”. However, it seems that these groups are working with companies or at the very least being supportive. These airlines have not encountered any criticisms from NGOs and external stakeholder groups (for both the first and most current CERs). This may indicate that companies worried about bad publicity from these groups should not let this be the reason why they choose not to publish a CER.

As Table 14 reveals, out of the 7 airlines, 5 carriers (71%) believed the barriers had changed in some way since the publication of their first CER. Only 2 carriers (29%) stated that the barriers had not changed. So, what are the barriers that have remained the same and what are the new obstructions?

Table 15: Have the Barriers Changed Since the Publication of the First CER?

Yes	No
71%	29%

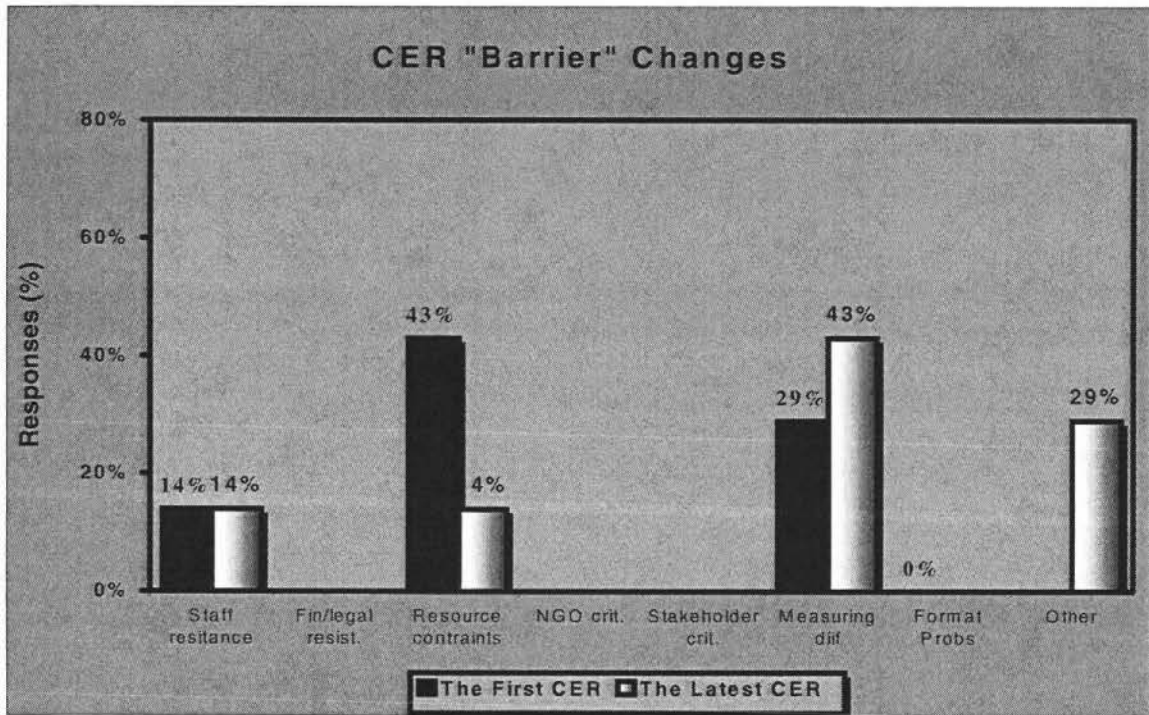
For the latest CER publication (Question 19), only 14% said internal staff resistance was an issue, 14% said monetary and resource constraints were a problem. 43% had difficulty with measuring and recording CER data, while a further 29% said new barriers revealed themselves for the most recent publication. These “other” barriers were “ongoing projects” taking priority and organisational changes and changes to the “system boundaries of the CER”. No airline found legal/financial sector barriers, report format problems or NGO/stakeholder barriers for their most recent CER publication.

Table 16: The Barriers Experienced when Developing the Latest CER (out of 5 airlines).

The Barriers	Responses (%)
Internal staff resistance	14%
Finance/legal sector resistance or disapproval	0%
Monetary costs/limited resources	14%
NGO Criticism	0%
External Stakeholder Criticism	0%
Difficulty in measuring and recording CER content	43%
Report Format Difficulties	0%
Other	29%

To analyse the “barrier” changes between the publication of the first and most the recent CERs, the results need to be placed against each other on a graph. Graph 8 compares the results from Tables 13 and 15.

Graph 8: Comparison of CER Barriers from the First CER Publication and from the Most Recent Publication.



As Graph 8 illustrates, financial and legal sector barriers never eventuated for both publications (contrary to popular beliefs). NGO and external stakeholder criticisms were not seen as barriers for any of the CER publications. These groups are supporting business and are not barriers for the development of CERs and the disclosure of environmental data. Staff resistance levels did not change and remained at 14% (only 1 airline).

The “Other” category did not reveal any barriers for the first CER publication process, but for the most recent publication two airlines (29%) found that other projects took priority and that organisational changes affected the CER system boundaries. The barriers found in the other category, and in fact the general spread of risks, illustrates the point that no one barrier is obstructing CER publication. While the majority of airlines face some sort of barrier, the actual obstruction is airline specific. No major “barrier” trends are emerging, just the fact that airlines will inevitably strike some problem one time or another. Resource constraints fell from 43% of the airlines for the first CER to only 14% for the most recent. This strongly suggests that as an airline develops subsequent CERs,

the value to the airline of the CER becomes quickly apparent. Projects that are valuable to a company normally do not face money and resource constraints.

The only barrier to arise over the period between the first and most recent CER was the measuring of CER content. One only has to look at early CERs to find that the airlines reported only a fraction of their inputs, processes and outputs. As time and knowledge about environmental impacts has progressed so to has the amount of data that airlines are required to collect. 43% of airlines faced difficulties in measuring data, up from 29% for the first CER. This is a reflection of the detail that is required in modern CERs and the difficulty that airlines have measuring some variables. The science behind collecting some variables (such as noise and emissions) is extremely complicated and some are very controversial and not accepted by various parties. Operating globally also makes data collection difficult. Airlines tend to focus on collecting data at major hubs due to the logistical and technical difficulties associated with collecting data from every single company location and operation. These would tend to be the reasons for the rise in this barrier.

Summary of the Discussion

- Aggregate findings show that while over 70% of carriers face a barrier of some kind, the actual barrier is very airline or situation specific. There are no major barriers faced by the majority of airlines. One airline has had internal barriers for both the first and most recent CER; this is a very specific barrier and is not experienced by any other airline. The general journey between the first and most recent CERs tends to be a decrease in resource constraints as the value of the CER becomes apparent to management and accordingly, resources start to become available for the annual project. Value-adding projects tend to have no problems receiving funding.
- Despite literature review findings to the contrary, no airline had trouble from the financial or legal sectors. Fears were communicated in the review of the literature regarding legal liabilities and precedents created from the disclosure of sensitive environmental data. However, airlines have not seen this problem as an issue for any of their CERs.
- No barriers or criticisms came from external stakeholders or NGOs. Conclusions that can be drawn from this finding: Airlines should not be afraid of these groups or the bad publicity environmental disclosure is thought to create. Generally, most mainstream groups are supporting and even assisting big business (CERES and UNEP for example).
- The second trend during the CER journey was an increase in difficulties associated with the collection of CER material and data. Generally, when the airlines first started with CERs the data was brief and selective. However, stakeholders have demanded more data. Companies also want to improve on each CER. More data is therefore required. However, collecting input process and output data often involves complicated science and technology, much of which is very new and often controversial. Obvious difficulties arise from this situation. In addition, global businesses find it logistically and technically very difficult to account for every operation worldwide.

Section Nine: The Future

Question 20 and 21

Q.20 Will your airline continue publishing CERs?

Q.21 In the future, does your airline intend to fully integrate its CER into financial company annual reports?

Questions 20, 21 and 22 asked respondents if their airline was going to continue publishing CERs, if the CER was going to be integrated into the company annual reports and what the airline has planned for the future. As the table indicates below, question 20 was answered unanimously with a positive. All the airlines in the CER will continue publishing CERs in the future.

Table 17: Will the Airlines Continue Publishing CERs?

Yes	No	Unsure
100%	0%	0%

Question 21 asked the respondents if their airlines were considering integrating the CER into company annual reports. This question was asked because there is a growing call for environmental and social issues to be accounted with economic considerations. Environmental Cost Accounting (ECA) should require one single annual report, accounting on the *triple bottom line* of economic, environmental and social responsibilities. Separate economic and environmental/social reports indicate that companies are not integrating these other issues fully into their accounting systems. As the table below suggests there are mixed views on the question.

Table 18: Will the Airlines Integrate the CERs into Company Annual Reports?

Yes	No	Unsure
29%	43%	29%

43% of the companies responded with a resounding “no” answer. However, both the “unsure” and “yes” answers are weighing in at 29% respectively. This would indicate that some airlines are heading towards accounting for the *triple bottom line*, while some are unsure. If the “unsure” and “yes” results are merged, then 58% of the airlines are either definitely moving in this area or are considering it. If some airlines intend integrating, then it would seem plausible that others might eventually follow. This is the reality of a competitive industry.

Question 22 asked the respondents to add any comments they had about any future directions for the airline's CER programme. One airline stated that they wanted to broaden the range of issues covered in their CER. The airline was looking more towards including life cycle issues such as supplier and customer environmental variables. Another airline also stated that it was expanding the scope of its CER, including more environmental data and more data on incoming materials. Another company stated it was expecting to gain company-wide ISO 14001 certification and wanted to be externally audited for the next CER. One other airline reported that it had approved an ISO 14001 EMS and was working at putting the full CER on the company website. Another airline wanted to survey its readers to see where stakeholders believed the airline could improve.

It is clear that airlines are set to improve their CERs. All the airlines have future CER plans and all will continue publishing CERs. Certification to an external EMSs seems to be a developing trend, including external audits and communicating with stakeholders to discover where improvements should be made. Airlines seem to be expanding the scope of their reports, as data that is more specific is required. The question indicates that the journey is always ongoing and that there are always new things to do. While integration of CERs is an undecided issue, some are committed to it. Knowing the industry and its competitive nature, these first movers may force the issue on the undecided and even the "no" airlines. Many airlines are developing their websites, one indicated it is putting the CER on its site. Many of the airlines have already done this.

Summary of the Discussion

- All of the airlines will continue publishing CERs in the future.
- 29% of airlines are integrating their CERs with annual reports, 29% are undecided and 43% stated no they would not. This is a trend to monitor; the airlines that are integrating towards the *triple bottom line* may force the "undecided's" and the "no's" to act towards integration, both in a physical and internal sense.
- Airlines are expanding their CER scope. One airline is moving towards Life Cycle Analysis; others are increasing the detailed data and the scope of the document. CERs are moving to the web, if they are not there already. All airlines are progressing with their CERs as part of their individual CER journeys
- Several airlines are committed to external EM certification. External auditing is part of this certification. This is a trend to monitor.

10.4 Survey Discussion and Conclusions

The aim of the research was to document current trends in the field of airline CERs. The Survey objective and research question set out to document the environmental journey airlines experience during the development and publication of an environmental report. The result of completing this task was to gain insights into the processes, issues, drivers and steps in the CER journey.

Environmental management and reporting undoubtedly requires a change in company culture towards openness, transparency and accountability. An environmental journey occurs when an airline decides to go down the path towards sustainability. The research Survey has documented the CER journey of BA, Swissair, SAS, KLM, Finnair, Lufthansa, and Iberia. Such information will not only document past, current and future CER trends, but may also help non-reporting airlines to prepare organisational structure and management systems for the change in philosophy that environmental concerns will undoubtedly bring to a company.

The research has documented the journey of this group of airlines journey towards environmental reporting, incorporating all the stages and issues surrounding the CER process. The reasons why airlines are reporting on their environmental responsibilities are important issues to document. Specifically, CER motivators in Europe may be different from those in New Zealand. This may have important implications for the content, direction and proposed audience for reports developed in this country. Nonetheless, understanding the drivers is to understand the reasons behind the *European Phenomenon*.

The major findings were.

- The airlines in the Survey range from very large to comparatively small; thus, airline size has no bearing on an airline's suitability for publishing a CER. All airlines, no matter what size are capable of publishing one. Only a critique of the actual content of the airline CERs can discover if CER quality is correlated to airline size.
- 4 airlines used a CER framework, while one of these was an internal reporting recipe. 3 airlines categorically stated they have not used an external recipe. Two airlines used ISO 14001 as a guideline for their CERs; one of these companies also used EMAS. One airline used both the SustainAbility and GRI tools. There seems to be no trend amongst airlines for a favoured framework. Some respondents indicated that the lack of aviation-specific frameworks was a dilemma for the industry thus far. Specific frameworks may encourage more airlines to begin reporting. The daunting task of CER publication could be made easier with an industry specific tool. In addition, an aviation-specific reporting recipe and scoring system will analyse airline CERs more fairly than contemporary measures do. This might act as the catalyst to allow airlines, scared of public scrutiny and bad publicity, to publish CERs.

- Most airlines published environmental information in company annual reports in the 1980s, however no airline published a CER before 1990. Most “first” CERs are a mid 1990 phenomena. There seems to be no correlation between early CER starters and the type of CER frameworks used. Some airlines use frameworks some do not. It bears no relationship with CER expertise.
- Consumers, customers and stakeholders have the most power for shaping the airlines activities and emphasis towards publishing environmental information in a CER. European environmental awareness possibly spurred on by pressing environmental issues (population and resources driven), forces European airlines to be more responsible. In Australasia, where company CERs performed poorly against European efforts, environmental awareness is less pressing due to the less obvious human related environmental impacts. This phenomenon may indicate why carriers in this region and in others, are not as environmentally advanced as those carriers in Europe. Consumer awareness in Australasia is not as environmentally active or informed.
- Legislation ranked third in the Survey as a significant CER “driver”. This finding contradicts many arguments, recently published in New Zealand, about how compulsory CER legislation might reduce company innovation in this area. It is clear that environmental legislation in Europe has had the opposite affect. European CERs generally are the best in the world, as shown in the literature review.
- Competition is also seen as an effective *driver*. This may go someway into explaining the reasons behind the *European Phenomenon*. Due to the competition in the industry, company values must shift to retain competitive advantage in a market dominated by customer and stakeholder attitudes and their spending habits. European airlines seem to be competing with each other in the area of EMS and CER, like it was one more addition to the battlefield of airline competition.
- NGO pressure ranked behind competition. It is clear that the work of the NGOs is not going unnoticed. NGO publicity must also be linked to stakeholder opinion (which ranked in the top two of external drivers). Airline alliances and supplier pressures ranked sixth equal as CER “drivers”. Airlines feel that it is important that all airlines in the partnership have the same regard for the environment. This feeling is also transferred to the company’s suppliers and distributors. There seems to be a trend to ensure that the entire life cycle of the airline business reflects the parent company’s concerns and aspirations.
- Voluntary government initiatives ranked around the bottom of the list. The literature review discussed the pros and cons of compulsory and voluntary legislation for CER. The Survey discovered that companies simply would not respond to voluntary initiatives as much as the higher ranked drivers, like legislation. This extinguishes the arguments regarding business and the merits of voluntary initiatives, as discussed in the literature review.

- Other drivers were science and the media. As more science reveals what is affecting the environment, more companies are responding to their impacts and this information. The media “driver” probably refers to the issue of bad publicity, which links in with idea behind stakeholder and consumer opinion power in the CER and environmental arenas. One airline manager stated that their environmental image was far worse than their actual environmental performance. This shows the power of the media, public perception and the power of spending habits. A CER was seen as a way of influencing public opinion back to a level closer to reality.
- The main internal drivers were staff and the Environment Department, followed closely by the Executive Management and the Board of Directors. This indicates the importance of staff involvement in any change of corporate culture. It would seem the process must be lead by the staff, closely supported and guided by the Environment Department, Executive Management and the Board. Respondents claimed the process was a team effort or a partnership. Without support from any one of the parties, the process might not have been so successful.
- The Environment Department is crucial to any change towards environmental responsibility. As a main *driver* of the CER process, they are the catalyst and the experts in the area. Airlines without such a department would be wise to separate the environmental functions into a department that exists in its own right, which has responsibilities over the full scope of the airline’s activities. Shareholders were the next internal *driver* of the CER process, which is surprising because it was believed from readings in the literature review that shareholders played a bigger part in the process. This may indicate that shareholders are still assessing investments on the single bottom line of economics, rather than the *triple bottom lines* of economic, environmental and social responsibilities.
- Airlines reported many benefits from publishing CERs. Most airlines view a CER as a marketing tool used to help improve image and stakeholder relations. It is therefore appropriate that the Marketing Department would want an airline to publish a CER, particularly if an airlines environmental reputation was worse than reality. All airlines have experienced improved public relations since publishing a CER. However, only 1 airline found that it created any new marketing advantage and no airlines reported any increase in passenger numbers and revenues. However, this result probably reflects the difficulty in proving such a link, as it is clear that most airlines experienced improved environmental performance and more effective EMSs.
- Only 29% of airlines reported eco-efficiency gains after publishing a CER. However, it is proven that in many cases EMSs do result in cost savings. The link between CER and these practical gains would be difficult to establish. It is clear that a CER is more than an output; it is a tool within a tool. CER is a process in a continuous journey of self-improvement. CERs set organisational challenges, they focus the resources and they point companies in the right direction. There is a definite link between CER and a more effective EMS resulting in improved environmental performance.

- No airline experienced any disadvantage from publishing a CER, contrary to the literature review findings.
- For the first CER development and publication, it would seem that the expertise and therefore leadership for the process was coming mainly from the Environment Department. Only a few airlines reported Executive, Board or staff involvement in the early days of CER development. As time has gone on, and environmental management has become more mainstream and more important within the company, more groups have become involved in the leadership and decision making. This trend is concurrent with the earlier findings relating to the teamwork required for successful Environmental Management Systems and CERs.
- In the beginning, when environmental management and CER were new to companies, it seems only logical that the people with the knowledge and expertise in the area lead the first project. The stake each of these groups has in the successful publication of a CER, not just as a publication but as a process, has increased over time. This journey is an indication of the change in culture the airlines have experienced as CER ideals and momentum spread throughout the entire company.
- Airline alliances and environmental management must issues of discussion for airlines, particularly at a time when alliance partnership numbers are at an all time high. The majority of airlines in the Survey think environmental compatibility is important for alliances. The majority of respondents are have some joint program with alliance partners regarding environmental management. Qualitative comments from the participants indicate that alliance compatibility is important to protect the alliance brand and to enhance it. Environmental compatibility is important for a harmonious marketing image.
- Airline cultures must be the same for the ventures to capture *synergy*. Airline value systems therefore must be compatible. Airlines do have different value systems when they join an alliance; this is to be expected. This is why airline's work together to ensure some sort of synergy is produced through company cooperation in such areas as environmental management and information technology. The research discovered that airlines believe that internal processes and procedures must also be homogenous; this must include compatibility between each carrier's environmental policies. One participant commented that an alliances external image is only as good as the worst environmental performer. Hence the reason airlines work together to raise performance standards. Within alliances, airlines tend to favour sharing intangibles such as expertise, knowledge and by forming working groups. Tangibles such as technology joint ventures and human resources are not very popular resources to share.
- It has already been established that CERs are good for improving stakeholder relationships. It was found in the marketing section of the Survey, that the majority of carriers market themselves as companies that care for the environment. The same airlines also use their CERs as marketing tools. Similar findings were discussed in the

literature review. Consumers that are concerned for the environment should be able to choose airlines that are more environmentally and/or socially responsible than other carriers. Airlines differentiate themselves from other carriers on such variables as social and environmental responsibility. It is only fair that these differentiations are then marketed to stakeholders.

- Regarding CER barriers, the Survey discovered that while the aggregate findings show that over 70% of carriers face a barrier of some kind. However, the actual barriers are very airline or situation specific. There is no single major barrier faced by the majority of airlines. One airline has had internal barriers for both the first and most recent CER; this is a very specific barrier and is not experienced by any other airline.
- The general journey between the first and most recent CERs tends to be a decrease in resource constraints as the value of the CER becomes apparent to management and accordingly, resources start to become available for the annual project. Value-adding projects tend to have no problems receiving funding.
- Despite literature review findings to the contrary, no airline had trouble from the financial or legal sectors. Fears were communicated in the review of the literature regarding legal liabilities and precedents created from the disclosure of sensitive environmental data. However, airlines have not seen this problem as an issue for any of their CERs.
- No barriers or criticisms came from external stakeholders or NGOs. Conclusions that can be drawn from this finding: Airlines should not be afraid of these groups or the bad publicity environmental disclosure is thought to create. Generally, most mainstream groups are supporting and even assisting big business (CERES and UNEP for example).
- The second trend found in the “barriers” section was an increase in difficulties associated with the collection of CER material and data. Generally, when the airlines first started with CERs the data was brief and selective. However, stakeholders have demanded more data and companies themselves, wanting to improve on each CER, require more data. However, collecting input, process and output data often involves complicated science and technology, much of which is very new and often controversial. Obvious difficulties arise from this situation. In addition, global businesses find it logistically and technically very difficult to account for every operation worldwide.
- Regarding the future, all of the airlines indicated that they would continue publishing CERs in the future. 29% of airlines are integrating their CERs with annual reports, 29% are undecided and 43% stated no they would not. This is a trend to monitor; the airlines that are integrating towards the triple bottom line may force the “undecided’s” and the “no’s” to act towards *triple bottom line* integration.

- Airlines are expanding the scope of their CERs. One airline is moving towards Life Cycle Analysis; others are increasing the detailed data and the range of the document. CERs are also moving to the web, if they are not there already, and all airlines are committed to progressing with their CERs, as part of their individual CER journeys. Several airlines are committed to external EMS certification. External auditing is also an integral part of this certification; some airlines are committed to third party verification. Several of the airlines involved in the research have already had their CERs verified by external auditors.
- CER is here to stay. Trends in Europe are a warning to other airlines of the shift towards the *triple bottom line*. As consumers become more aware and active carriers in Australasia can expect to be following the lead of the European carriers. Alliance cooperation may have already started the CER processes amongst carriers that are currently not reporting on their environmental and social responsibilities. The research has certainly answered its questions and objectives. This research should help airlines and indeed other interested parties understand the journey and prepare for one of their own.
- Being *green* means staying in the *black*, both on an economic, environmental and social bottom line. Being sustainable makes good economic sense, waste and unsustainable consumption are the enemies of business, this is clear. CERs are more than just a PR document; they are a working, living entity and are an integral part of a continuous cycle of self-improvement. CERs improve EMSs and environmental performance, improve communication and encourage teamwork. The next step for business is not to isolate the CER as a separate entity but to integrate the CER and all its stands for into the day to day business of running an airline. CERs must be integrated into company annual reports and put into the context of accounting for the *triple bottom line*.
- The airlines in the Survey are the majority of airlines publishing reports. Their environmental reports are an indication and a reflection of their commitment to environmental issues and a general reflection of the class of their Environmental Management Systems. These are the first movers and the benchmarks for any airline entering the CER journey, a journey that must be heading the industry towards some form of sustainable aviation.

11. The Critique of Airline CERs

11.1 Introduction

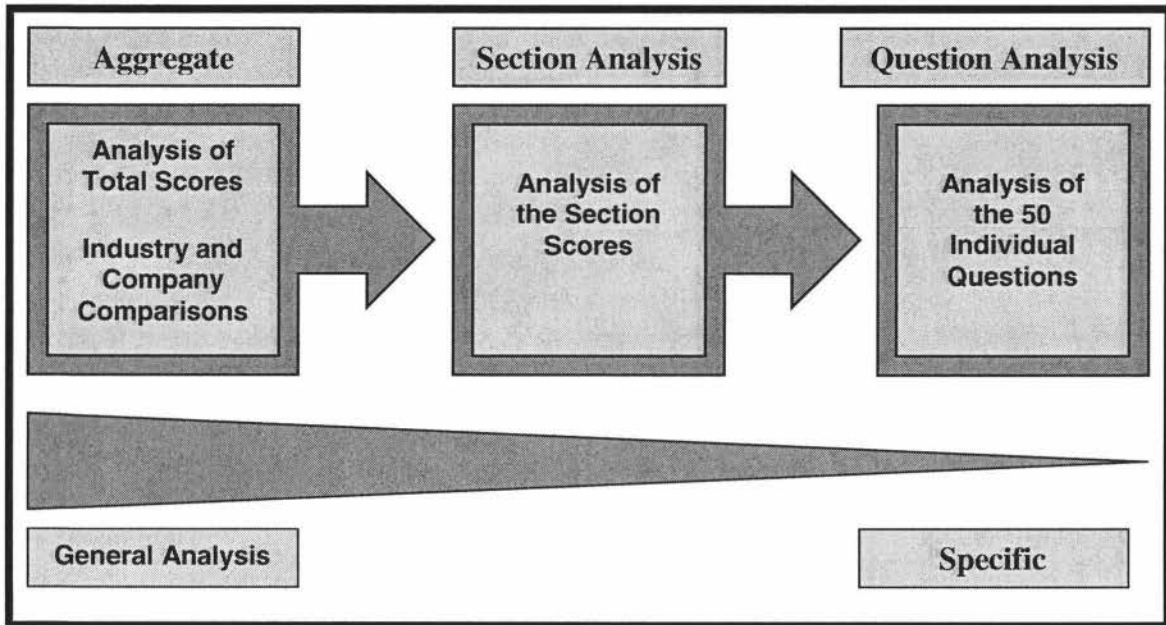
The seven airline environmental reports have been critiqued using the *UNEP/Sustainability 50 Reporting Ingredients* framework. The critiquing framework consists of 50 questions divided into 5 sections including, Management Policies and Systems, Input/Output Inventory, Finance, Stakeholder Relations and Sustainable Development. The highest score is possible for a CER is 194 points, most questions are scored out of four points, except for a couple of questions (Environmental Awards and Charitable Contributions) which are scored out of one point.

Any research that involves critiquing 7 CERs using 50 benchmark questions is a large undertaking, which will result in a very detailed and comprehensive document. In order to tackle this project in the most efficient manner, the report will follow a very specific and deliberate format tackling the general analysis first and moving through to the very specific analysis of each of the 50 questions. Moving from the general to the specific will allow the reader to quickly gain an insight into airline CER. Formats that analyse each report question by question drip feed the reader with information and are difficult to read and understand. Box 2 illustrates this general to specific format graphically and depicts how the report is put together.

The first section of the critique will be a summary of the total scores for all 7 CERs. This will allow an analysis of the major themes to take place and can allow the airline industry to be compared to other industries such as the oil and manufacturing sectors. In this analysis individual airline CERs can also be compared with other individual company CERs such as The Body Shop, Shell and BP to name but a few.

The next section will move away from aggregate comparisons and will analyse the actual section scores of the critique. The 5 sections of Management Policies and Systems, Input/Output Inventory, Finance, Stakeholder Relations and Sustainable Development will be analysed. A picture can then be developed regarding the seven CERs performance on this scale. From this discussion, an understanding of the state of contemporary airline environmental reporting can be documented.

Moving away from critiquing the CERs on an aggregate and sectional basis, the final analysis will take place on the smallest level using the 50 reporting questions. This is the most specific part of the report and will reveal what airlines are doing specifically in each question. This is the final piece in the puzzle, which will explain the reasons behind the total and sectional scoring patterns. On this micro-level, the report will discover how airlines are reporting on specific issues such as noise, emissions and waste to name just a few.

Box 2: The CER Critique Format

11.2 The UNEP/SustainAbility Criteria as a CER Assessment Tool

The *50 Reporting Ingredients* is a subjective framework, relying on personal judgement in many instances. While there are detailed scoring discussions for each question the framework relies on personal judgement, particularly when a CER “falls through” the scoring system, which is quite common. No CER is the same and the framework is often biased towards manufacturing industries, making the results questionable, particularly in the context of a service industry. It could be argued that the same person marking a CER using this framework could come up with a different score each time. Because of these reasons, the UNEP/SustainAbility have recently revised the scoring protocol for year 2000 and onwards.

It is also important to note that the framework scores most questions out of four points. Therefore, the weighting behind most of the 50 questions is the same. Thus, the weighting of such questions as “packaging” and “emissions” are both weighted out of four points, when one issue might be far more important to one industry than another. Packaging is not as relevant to an airline as it is for a manufacturing operation, on the other hand, emissions might be just as important for both companies.

However, despite these limitations, the *50 Reporting Ingredients* is the most comprehensive framework to date. The fact that the CERs can be critiqued and quantified allows easy comparison of companies and industries (particularly for comparisons from

the *Engaging Stakeholders Series*). The framework is used by many companies and is endorsed by key-stakeholder groups.

11.3 Total Scores and Industry Comparisons

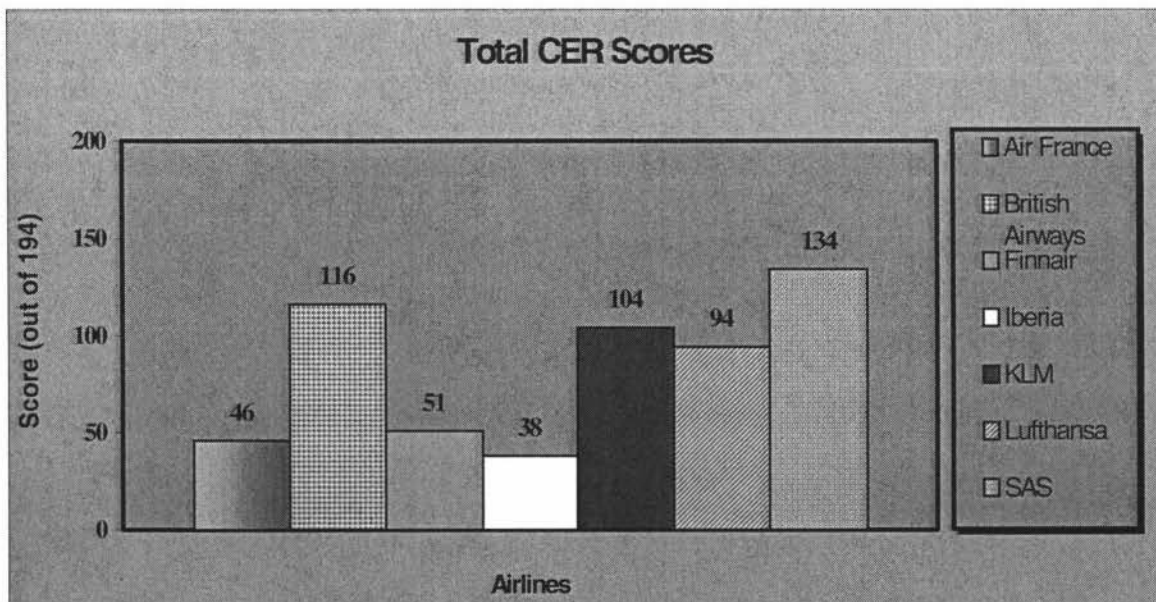
Total Scores

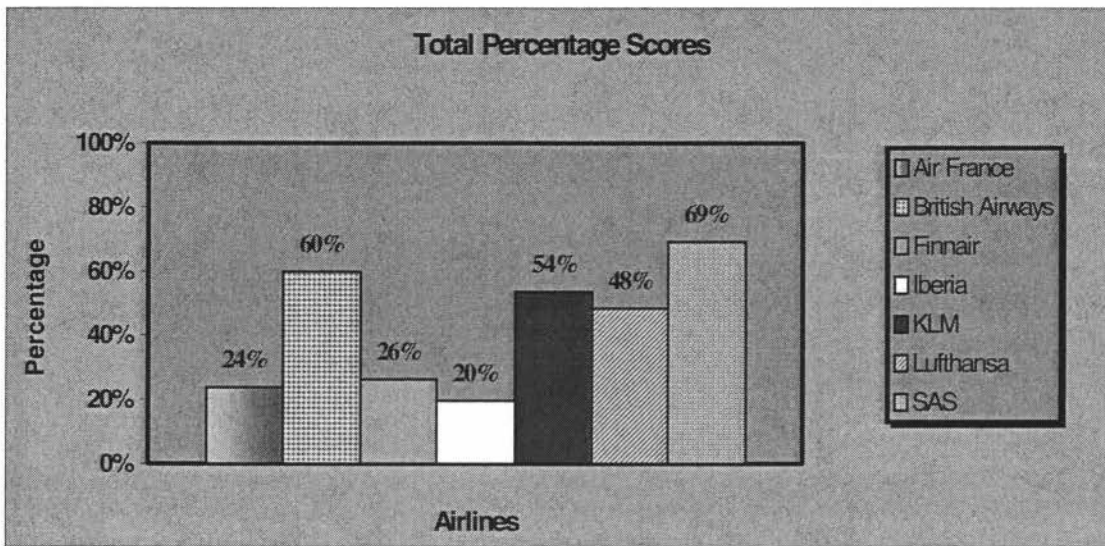
After critiquing the seven airlines CERs using the *UNEP/SustainAbility 50 Reporting Ingredients*, several interesting themes have emerged relating to the total scoring patterns of the CERs.

Graph 9 and Graph 10 illustrate that SAS topped the Survey at 134 points (69%), followed by BA on 116 points (60%), KLM on 104 points (54%), Lufthansa on 94 points (48%), Finnair on 51 points (26%), Air France with 46 points (24%) and Iberia on 38 points (20%). As Graph 9 and Graph 10 depict, two clusters of reporting airlines have been identified, one group including SAS, BA, KLM and Lufthansa are scoring above 90 points, while the second grouping of Finnair, Air France and Iberia are scoring 51 points and below. There is a major gap between these two clusters with no airline scoring between 90 and 50 points.

The top scoring cluster are airlines that have generally published environmental reports before, while the lower scoring cluster are in the stages of publishing their first series of reports. This may be the reason why there is a large gap between the two groupings of reporting airlines.

Graph 9: Total CER Scores.



Graph 10: Percentage Scores for the CER Critique

The graphs above show that there is a large disparity between airline CER scores. The airlines that are in the high scoring cluster are doing extremely well (something which will be discussed in the next section when the airlines are compared to other industries and companies). However, the lower scoring cluster is not doing as well according to the UNEP and Sustainability framework. This is not to say they are not good reports, but using this framework, with all of its shortcomings, this is what the cluster scores. The major problem with the lower scoring cluster is that their CERs are too brief. They seem to be on the “right track”, but are let down their lack of disclosure. Finnair, Iberia and Air France have the same content sections as the top 4 scoring critiques, however the detail in these sections relegates the CERs to lower scores. The higher scoring airlines need to continue progressing with their CERs, as they are well on the way to scoring higher marks if they advance on their current efforts.

Environmental Report Rankings

Table 19 depicts the rankings for the CER Survey. The ranking system was taken from the *Engaging Stakeholders 1997* survey conducted by UNEP and SustainAbility. The table shows that there was no *Over the Horizon* companies on scores of 141-198 points. However, at first place was SAS on 134 falling into the *Trailblazer* category. BA came a close second in the *New Benchmarks* category on 116 points. At the bottom of this category was third placed KLM on 104 points. Only Baxter has subsequently been placed in the *New Benchmarks* category (from the 1997 survey), but is now joined by BA and KLM. Fourth placed Lufthansa on 94 points fell into the *State of the Art* category. There were no airlines in the next category *Pressing Hard*, indicating again that there are no middle ground CERs in the Survey.

At fifth and sixth were Finnair and Air France on 51 and 46 points respectively, these two airlines fell into the *Not So Hot* category. Finally, Iberia on 38 points was the only airline in the *Narrow* category.

A positive to come out of the Survey was that no airline fell into the bottom rung category of *Bottom Crawlers* and three airlines scored in the top categories. In the *Engaging Stakeholders* survey, only The Body Shop scored in the *Trailblazer* category. This company is now joined by SAS as one of the top scoring CERs in this category.

Table 19: Airline Rankings and Categories.

Scoring Criteria		Airline	Score	Rank
141-198pts	<i>Over the Horizon</i>	None		
121-140pts	<i>Trailblazers</i>	SAS	134	1st
101-120pts	<i>New Benchmarks</i>	BA	116	2nd
		KLM	104	3rd
81-100pts	<i>State of the Art</i>	Lufthansa	94	4th
61-80pts	<i>Pressing Hard</i>	None		
41-60pts	<i>Not so Hot</i>	Finnair	51	5th
		Air France	46	6th
21-40pts	<i>Narrow</i>	Iberia	38	7th
0-20pts	<i>Bottom Crawlers</i>	None		

Major Themes and Findings

- There are two clusters of reporting airlines. One cluster is scoring above 90 points (46%), while the lower cluster scores below 51 points (26%).
- The first cluster consists of SAS, BA, KLM and Lufthansa (in order).
- The lower cluster consists of Finnair, Air France and Iberia (in order).
- The lower scoring CERs are simply suffering from lack of detail. The higher scoring clusters are well on the way to scoring higher points if they carry on in the same fashion with their CERs and advance upon current efforts. Lower scorers should use the higher scoring CERs as a benchmark.
- SAS joined The Body Shop as the only companies in the *Trailblazer* category.
- BA and KLM are in the *New Benchmarkers* category with Baxter.
- There are no airlines scoring in the middle categories
- No airline fell into the bottom category called *Bottom Crawlers*.

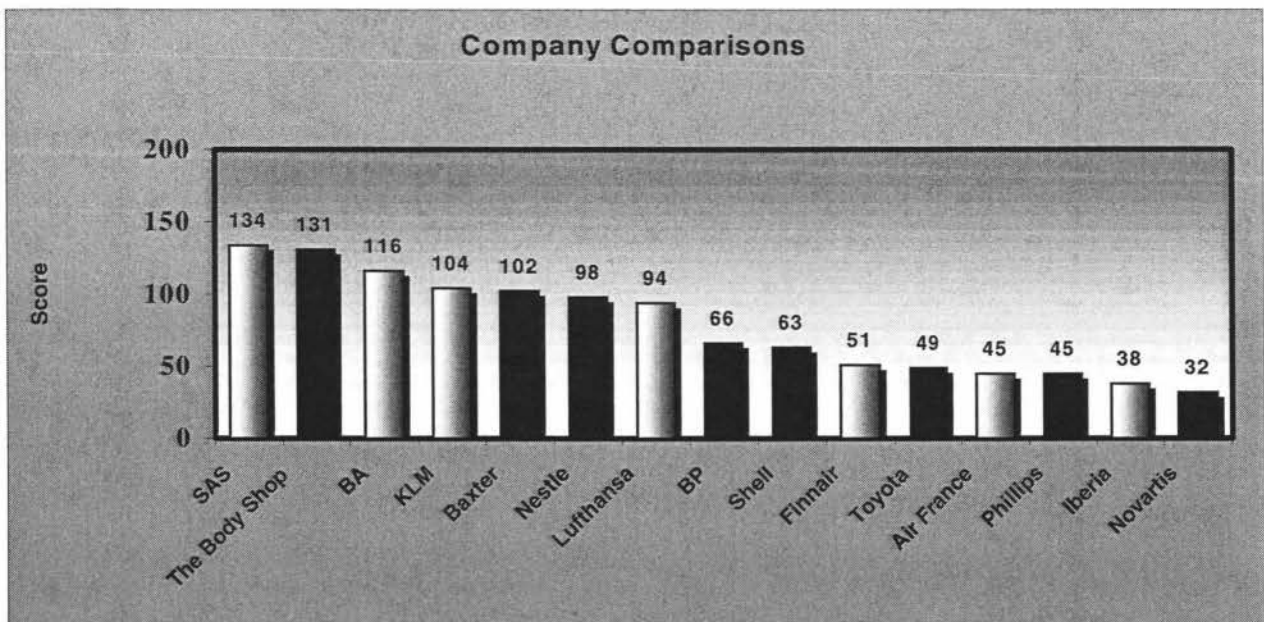
11.4 Company and Industry Comparisons

Airline CER survey scores cannot be analysed in isolation. Apart from giving a ranking within the industry, the scores need to be compared against other industry sectors to gain a complete picture of the state of airline reporting practices.

Graph 11 depicts the airline CERs (in white) and a selection of other companies (in black) that were critiqued in the 1997 Benchmark survey. The graph shows that The Body Shop had scored the highest on 131 points in the 1997 survey. However, SAS has surpassed The Body Shop on 134 points. BA comes quite close to these leaders on 116 points. The high scoring Baxter CER was also beaten by the KLM CER, which has also beaten the CER from Nestle. The SAS, KLM, BA and Lufthansa reports have also beaten large company CERs from such companies as Shell, BP, Toyota and Phillips. While there are lower scoring airline CERs, the lowest scoring CER in the 1997 survey was Novartis on 32 points. Even the lowest scoring airline CER (Iberia) scored higher than 32 points.

In summary, the airline CERs are clearly competitive with the CERs from companies involved in the 1997 *Engaging Stakeholders* survey. It is clear that the industry as a whole is one of the best industries at CER. Airlines have the highest scoring CER and do not have the lowest scoring CER by six points.

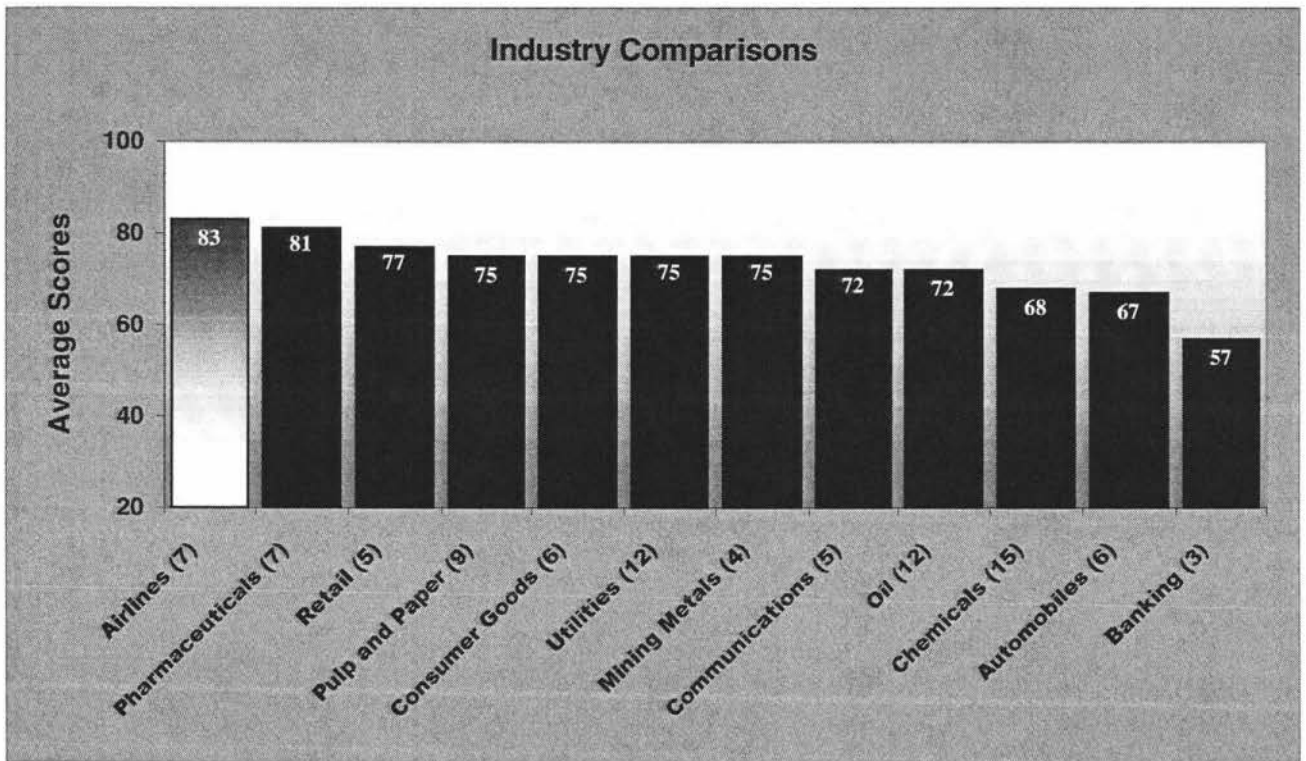
Graph 11: Company Comparisons.



Graph 12 has taken the scores from all respondents in the 1997 Benchmark survey and the respondents in the airline CER survey and grouped the CERs into industries and average CER scores. This gives a good indication of how well individual industries are

scoring next to each other. The number in brackets next to the industry label indicates how many CERs were used to reach the industry average score. Graph 12 shows that the airline industry has surpassed all the other industries with an average score of 83 points. The airline industry has surpassed leading CER industries such as the pharmaceutical, retail, pulp and paper, consumer goods, utilities and oil industries. The graph also illustrates that the financial sector is not doing very well, an ironic finding because this is the sector forcing many industries to pick up their environmental performance in order to reduce their financial risk!

Graph 12: Industry CER Comparisons.



Major Themes and Findings:

- Airline CERs are competing well on the international arena. The CER from SAS has surpassed the renowned CER from *The Body Shop*.
- BA and KLM join the Baxter Company in the *New Benchmarkers* category, which until now was the only company in this category.
- No airline CER was lower than the Novartis CER (the lowest scoring CER in the 1997 Benchmark survey).

- Individually, airline CERs are very competitive on the international arena. The top 4 CERs are amongst the world leaders.
- As an industry, the average airline CER score was the best. As an industry, the airlines beat all the major industry groupings.

11.5 Section Analysis

The analysis regarding CER total scores, industry and company comparisons have been completed. Working from the general to the specific means that section analysis is next in the discussion of the airline CERs. The UNEP SustainAbility framework consists of 5 sections of Management Systems and Policies, Input/Output Inventory, Finance, Stakeholder Relations and Sustainable Development. This discussion will analyse the scoring patterns within these sections. Graph 13 depicts the average percentage score for each section, taken from the scores of each airline CER. There are 3 categories, the first set of section averages was taken from all the airline scores (The "All CER" group). The Group 1 averages consist of only the top 4 airlines, SAS, BA, KLM and Lufthansa. The Group 2 averages were calculated from the remaining airlines, Finnair, Air France and Iberia. The 3 averages show not only how well the whole group is performing, but also depicts how well the two identified cluster groups are performing on each section.

Section 1 averages (Management Policies and Systems) show that as an industry all the airlines averaged only a score 40%, while the group consisting of the top scoring airlines scored an average 60%, the second group of the lower performing carriers only averaged a score of 15%. This is quite a disparity and indicates how important this section is to the whole CER. Without management systems and policies there is no stage set for the CER and associated Environmental Management Systems (EMS). A major problem identified in this section is the difficulty of integrating past, present and future goals into the CER. This is a format issue, as airlines are finding it hard to present all the data and relate their environmental work and performance with the goals and objectives the company is or has set for itself.

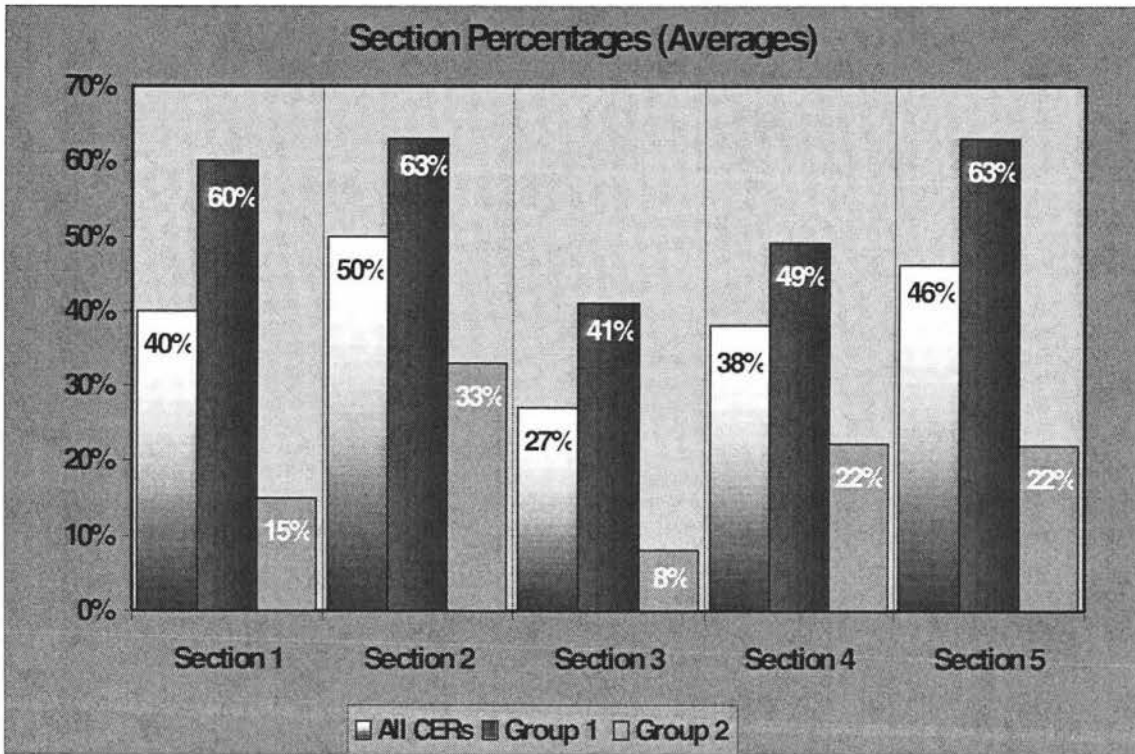
The Section 2 (Input/Output Inventory) average scores show that as a group the airlines averaged a score of 50%. Group 1 averaged 63%, while Group 2 averaged 33%. This section was completed with more detail than the first section. Airlines are quite good at disclosing environmental figures relating to such issues as noise, emissions and waste. Many of the reports focused on input/output figures and neglected the management systems behind the inventory, which is illustrated in the scoring patterns of Section 1 and Section 2. Airlines are finding it difficult to record all the input/output data relevant to their business. Quantitative methods for collecting this data are continually being developed and improved. Many airlines debate many of the collection methods, particularly with regards to noise and emission data. Most figures are only given from the airlines major operating areas and are generally not company wide.

The airline CERs averaged a score of 27% for the Finance Section. Group 1 averaged 41% and Group 2 averaged 8%. This was by far the worst scoring section. Airlines are not integrating their financial information within their CER. Most have quite separate annual and environmental reports, as indicated by the scoring patterns in this section. Many are pushing for the integration of these two reports. The scoring pattern of this section indicates that airlines have a long way to go in this area. This relates to the difficulty with Environmental Cost Accounting and the fact that this field is an emerging tool that is only now being developed fully.

Section 4, which scored airlines on their relationship with stakeholders, saw the airlines as an entire group averaged a score 38%, while Group 1 scored 49% and Group 2 scored 22%. This was another poorly scoring section. Airlines indicate that they communicate with stakeholders (particularly in airline policies), but little actual detail is given in the CERs. This is an important section for companies, as environmental and social concerns cannot be acted on in isolation. Stakeholders need to be involved in the process.

The final section (Sustainable Development) saw the airlines as a full group averaged a score of 46%, while the top 4 airlines in Group 1 averaged a score of 63% and Group 2 scored only an average of 22%. This was a surprising score, as Sustainable Development is traditionally a difficult section. Generally, airlines are acting globally. By their very nature, they are an international business and many of their environmental impacts, concerns and actions are conducted on a global basis. Airlines do not necessarily use the word "sustainable", but it is clear in the scoring patterns of this section that airlines are moving in these circles. Airlines are thinking of the future and are committed to some form of *sustainable development*. The section scoring may also be slightly skewed because of the CER design and layout question that is incorporated in this section. Most airlines scored well in this question.

The analysis of the section averages shows that, as a group, the airlines fail to pass 50% in any of the sections, indicating that they have much distance to cover. Group 1 consisting of the top 4 scoring airlines passed the 50% mark in all sections except Section 3 and Section 4. This Group is doing very well and has much less to improve than the second group, which languished in the 20% and 30% regions for all but one of the sections. Group 2 did particularly poorly in the Finance section (8%), as did Group 1 which scored only 41%.

Graph 13: Section Percentage Scores.

Tables 20, 21 and 22 found on the next page, based on the information given in the graphs above, show that generally airlines are performing best in Input/Output Inventory. Surprisingly, Sustainable Development scored consistently in the top sections. As predicted, airlines are doing very poorly in the Finance section. Stakeholder Relations ranks around the third place, while Sustainable Development ranks around fourth.

There is a large performance gap between the two clusters of reporting airlines which has an effect of dragging the total industry averages downward, as it is clear that SAS, BA, KLM and Lufthansa have very good CERs. Finnair, Iberia and Air France are new to the reporting arena, which shows in their scoring patterns both as individuals and as seen in the Group 2 averages. Nonetheless, the separating of the airlines into two clusters still shows that all airlines are stumbling on the same sections. Finance and Stakeholder Relations are the main sections where all airlines need to concentrate their future CER efforts. Surprisingly, Management Systems is also a section that needs improvement.

The next chapter will discuss each section in much more detail, revealing exactly where in each section airlines are performing or stumbling.

Table 20: Section Rankings for the “All CERs” Grouping.

Framework Sections	Ranking	Percentage Score
Section 2: Input/Output Inventory	1	50%
Section 5: Sustainable Development	2	46%
Section 1: Mgmt Policies and Systems	3	40%
Section 4: Stakeholder Relations	4	38%
Section 3: Finance	5	27%

Table 21: Section Rankings for Group 1.

Framework Sections	Ranking	Percentage Score
Section 5: Sustainable Development	1=	63%
Section 2: Input/Output Inventory	1=	63%
Section 1: Mgmt Policies and Systems	3	60%
Section 4: Stakeholder Relations	4	49%
Section 5: Finance	5	41%

Table 22: Section Rankings for Group 2.

Framework Sections	Ranking	Percentage Score
Section 2: Input/Output Inventory	1	33%
Section 5: Sustainable Development	2=	22%
Section 4: Stakeholder Relations	2=	22%
Section 1: Mgmt Policies and Systems	4	15%
Section 3: Finance	5	8%

Major Themes and Findings

- Airlines are scoring well in the Input/Output Inventory section. This is an indication of the effort airlines are going to collect data relating to their operations and environmental impacts.
- Surprisingly, airlines have scored well on the Sustainable Development section. This indicates that airlines have visions of the future and are working towards some form of social and environmental performance that is closely related (but not explicitly) to the issues surrounding sustainability.
- Airlines are scoring very poorly on Finance and Stakeholder Relations. Airlines are not integrating financial data with environmental data. Airlines explicitly state the importance of stakeholder relations and communication, but this is not followed through in the CERs.
- Airlines are neglecting the importance of Management Systems and Policies. Airlines need to detail more information regarding these systems. A difficulty seems to be in integrating policies and objectives (past, current and future) into the CER content and discussion of environmental programs and performance.

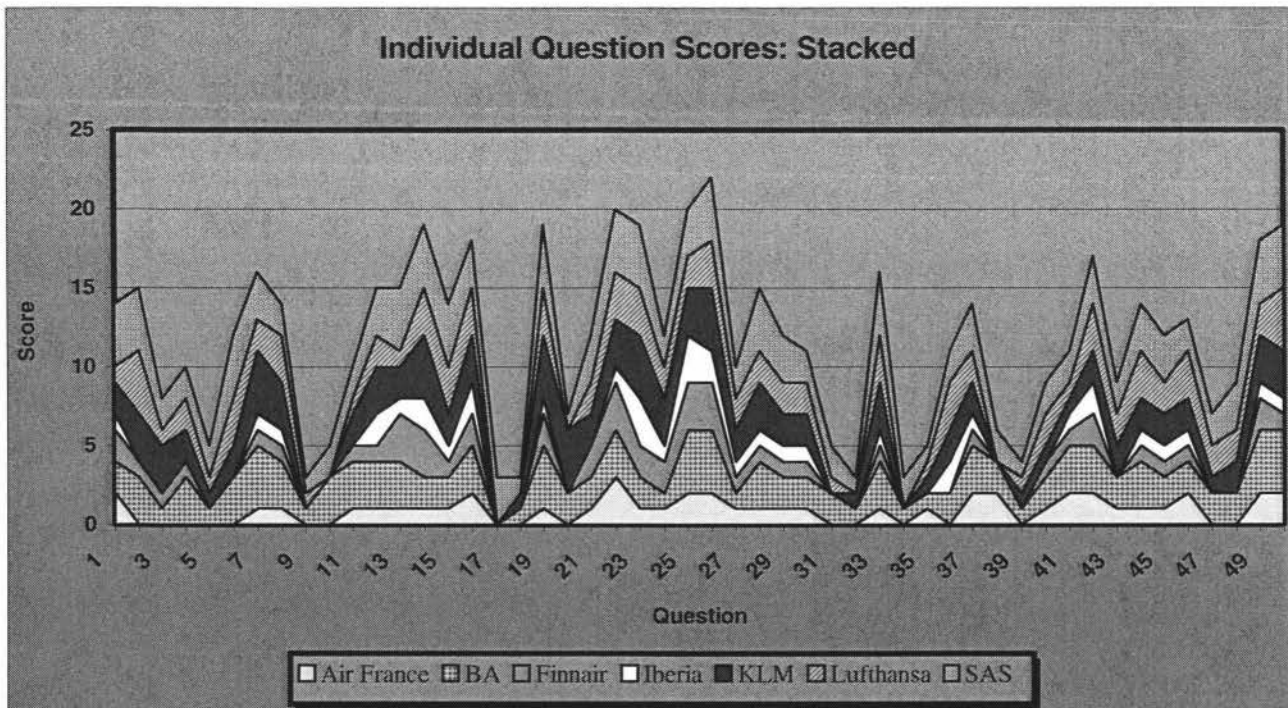
11.6 Individual Question Analysis

This section provides specific analysis of the CERs. Each of the 50 questions that make up the framework will be discussed in isolation (refer to Appendix E for a full copy of the framework). The analysis of the individual questions provides the rationale behind the aggregate scoring patterns that have already been discussed to date. The format follows the 5 sections of the framework in order, starting with the questions in the Management Policies and Systems, followed by Input/Output Inventory, Finance, Stakeholder Relations and Sustainable Development. To begin the discussion, the general trends surrounding the 50 questions and their scoring patterns will be analysed.

Question Scoring Trends

Airlines are scoring similar scores on the same questions. This reveals that the airlines are all doing well on the easier tasks and struggling on the more difficult issues. Graph 14 depicts the trend across all 50 questions of the UNEP/SustainAbility framework. The graph illustrates that all the airlines follow a similar scoring pattern on most questions. The graph also shows that SAS, BA, Lufthansa and KLM have higher scoring peaks than the lower scoring cluster of Air France, Finnair and Iberia. The lower cluster group is not scoring on several questions, where the higher scoring group rarely fails to score.

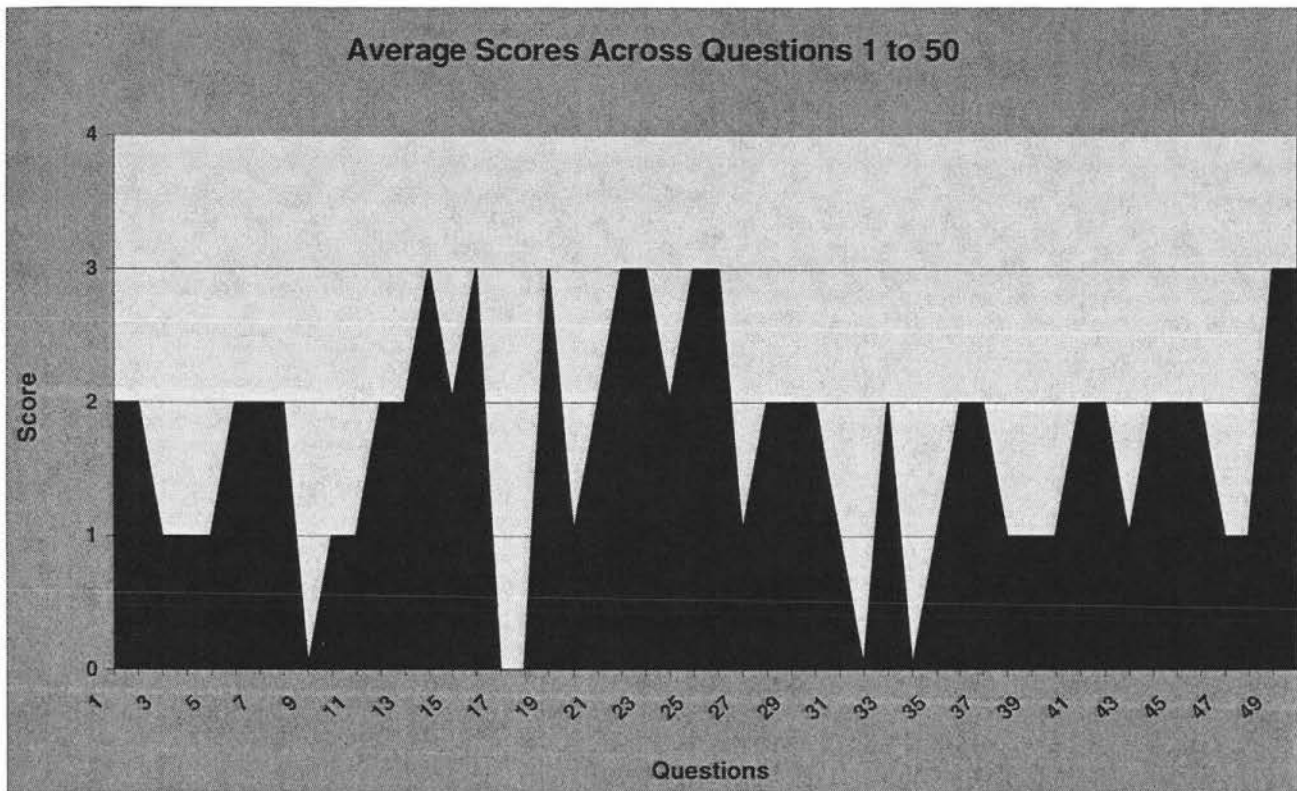
Graph 14: Question Scores Depicted on a Stacked Area Graph.



The seven CERs have had a mixed performance on the 50 questions in the UNEP/SustainAbility framework. Some questions have been undertaken very well, however as an industry, some of the 50 questions were not completed well at all.

Graph 15 depicts the average scores for each of the 50 questions. The average scores were taken from the individual scores of the seven CERs in the study. The figures reveal that airlines as an industry scored an average of two and above (50% and above) for the questions depicted in Box 3 and below 50% in Box 4.

Graph 15: Average Scores for Questions 1 to 50.



The airlines, as an industry, are scoring very well on energy consumption, eco-efficiency, risk management, waste management, air emissions, noise and odours, transportation, charitable contributions, report design and visions and future trends questions (refer to Box 3). These issues tend to be the impacts that are most obvious in the airline industry, such as emissions and noise. Many of the questions are averaging around the 50% mark, indicating that there is still a lot of room for performance improvements. Those airlines that scored 50%, while this represents a pass mark, need to improve. However, Box 3 clearly shows that the CERs are scoring 50% or more on more than 60% of the framework questions. This is a good sign for the industry as a whole and shows that the grouping is doing well. However, as this group only makes up a small percentage of the airline industry, and are the only airlines publishing CERs, it is clear that the entire industry is well behind these first mover carriers.

However, the UNEP/SustainAbility framework scored the airline CERs with less than an average of 50% for many of the questions. These low scoring questions are shown in Box 4. This box shows that the lowest scoring questions were awards, Health and Safety, accidents and emergency response, environmental liabilities and Environmental Cost Accounting. The questions on which environmental reports scored 25%, were Environmental Management Systems, management responsibility, environmental auditing, verification, reporting policy, land contamination, local communities, investors, suppliers and contractors, science and education, global development issues and global operating standards. Regardless of the scores in Box 4, all the questions are scoring very low average scores. These are the difficult issues and airlines, as a group, are not coping with them at all well. These issues require development by the airlines publishing CERs.

Box 3: Average Scores of 50% and Above. (% Score).

- Question 1: Top Management Statements (50%)
- Question 2: Environmental Policy (50%)
- Question 6: Goals and Targets (50%)
- Question 7: Legal Compliance (50%)
- Question 8: Research and Development (50%)
- Question 12: Corporate Context (50%)
- Question 13: Material Use (50%)
- Question 14: Energy Consumption (75%)
- Question 15: Water Consumption (50%)
- Question 16: Eco-Efficiency (75%)
- Question 19: Risk Management and EIA's (75%)
- Question 21: Stewardship of Local Habitats (50%)
- Question 22: Waste Minimisation and Management (75%)
- Question 23: Air Emissions (75%)
- Question 24: Water Effluents (50%)
- Question 25: Noise and Odours (75%)
- Question 26: Transportation (75%)
- Question 28: Environmental Impacts (50%)
- Question 29: Product Stewardship (50%)
- Question 30: Packaging (50%)
- Question 33: Market Solutions (50%)
- Question 35: Charitable Contributions (80%)

- Question 36: Employees (50%)
- Question 37: Politicians (50%)
- Question 41: Customers and Consumers (50%)
- Question 42: Environment Groups (50%)
- Question 44: Other (50%)
- Question 45: Technology Cooperation (50%)
- Question 46: Global Environment (50%)
- Question 49: Report Design (75%)
- Question 50: Visions, Scenarios, Future Trends (75%)

Box 4: Average Scores of Below 50% (% Score).

- Question 3: Environmental Management Systems (25%)
- Question 4: Management Responsibility and Accountability (25%)
- Question 5: Environmental Auditing (25%)
- Question 9: Awards (10%)
- Question 10: Verification (25%)
- Question 11: Reporting Policy (25%)
- Question 17: Health and Safety (10%)
- Question 18: Accidents and Emergency Response (10%)
- Question 20: Land Contamination and Remediation (25%)
- Question 27: Life Cycle Design (25%)
- Question 32: Environmental Liabilities (10%)
- Question 34: Environmental Cost Accounting (10%)
- Question 38: Local Communities (25%)
- Question 39: Investors (25%)
- Question 40: Suppliers and Contractors (25%)
- Question 43: Science and Education (25%)
- Question 47: Global Development Issues (25%)
- Question 48: Global Operating Standards (25%)

Major Themes and Findings

- Airlines are scoring similar points on the same questions. The stacked graph reveals that airlines are doing well on easier questions and stumbling on the harder issues.
- The airlines as a group score well on questions to do with energy consumption, eco-efficiency, risk management, waste management, air emissions, noise and odours, transportation, charitable contributions, report design and visions and future trends questions.
- Many of the stronger reporting areas relate to major environmental issues facing airlines. This is a good sign, indicating that airlines are tackling the major problems and issues facing the industry such as noise, emissions and waste.
- The airlines as a group need to work on questions relating to Environmental Management Systems, management responsibility, environmental auditing, verification, reporting policy, land contamination, local communities, investors, suppliers and contractors, science and education, global development issues and global operating standards.
- There are many questions where the airlines scored between 25% and 50%. The companies must improve in these areas. The average scores however do not give credit to the airlines scoring well. The low scoring cluster of airlines (Finnair, Iberia and Air France) is certainly dragging the averages down.

The next section of the report will discuss each of the 50 framework questions in isolation in order to discuss further the reasons behind the scoring patterns.

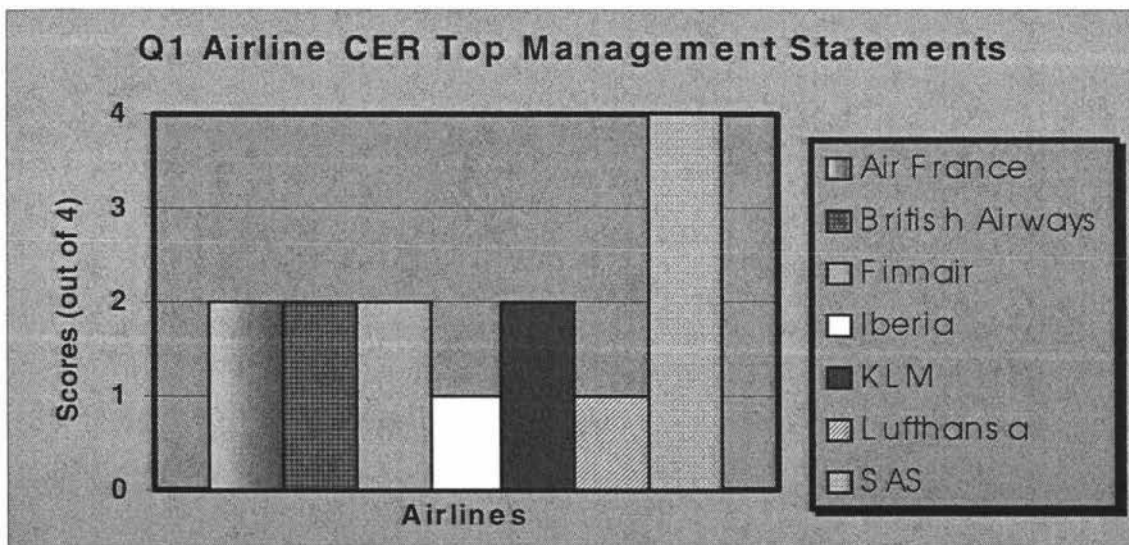
Management Policies and Systems

Top Management Statements

An indication of how seriously an airline takes its CER can be measured in the statement from the top management. The average score amongst the reporting airlines is two points out of a highest score of four points. As stated previously, an airline must benchmark itself against industry standards and must commit to the *triple bottom line* and *sustainable development*. However, the average score of two points indicates that the CER management statement, while honest and detailed, fails to commit the airlines core businesses (flying, maintenance and catering) to any form of *sustainable development*.

Graph 16 shows that SAS scored the highest possible four points, while languishing on the bottom are Lufthansa and Iberia. Only SAS committed itself to some movement towards *sustainable development* and understanding of the economic, social and environmental bottom lines.

Graph 16: Comparison of Airline CER Top Management Statement Scores.



Major Themes and Findings

- A trend to come out of the statements was that all airlines are concerned about the environment and take into account environmental impacts when operating.
- All airlines accept the fact that they pollute the environment and will continue to do so while transport is based on the combustion of fossil fuels.

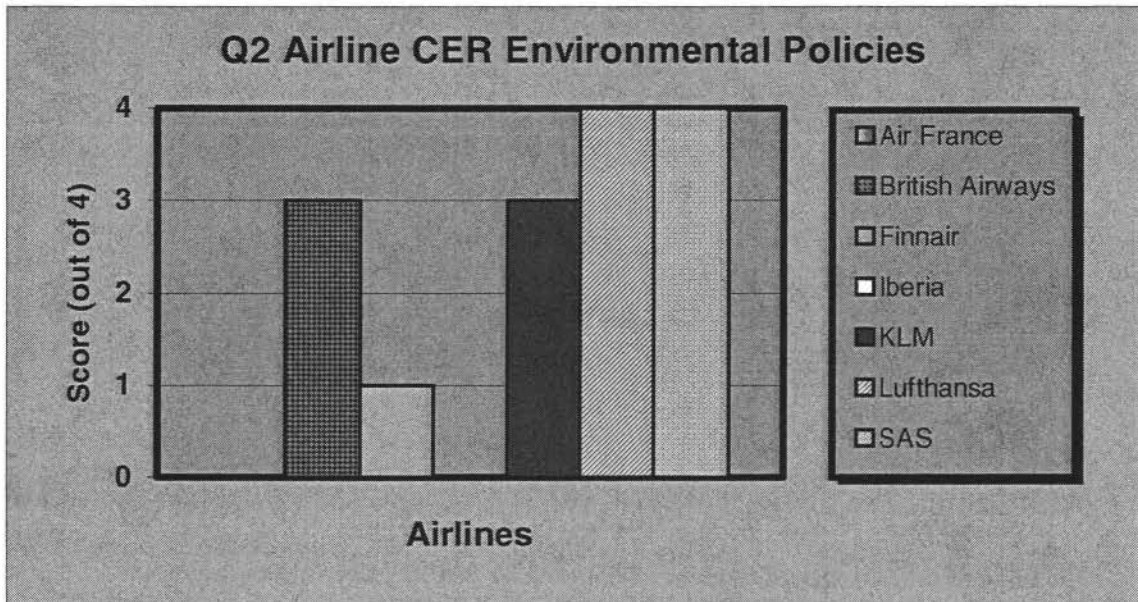
- Furthermore, all airlines stated that they will attempt to minimise environmental impacts but at the same time, many of the CEOs used the statement as a forum to defend the planned expansion of many of their hub airports.
- All airlines (except SAS) fail to commit the core businesses (flying, maintenance and catering etc) to any form of *sustainable development*.
- The lower scoring statements often were guilty of defending the indefensible by stating that aviation does not have a large environmental impact as currently thought
- The critique of top management statements has found that airlines have not made the leap from eco-efficiency and cost saving motives to true *sustainable development*. There exists a large gap between top management support and the support required for steps towards *sustainable development* and the use of the *triple bottom line* in auditing and measuring airline performance.
- Instead of *sustainable development*, airlines are focused on *responsible development*, there is a difference, one is sustainable the other is not. A good trend coming out of the statements is the fact that many CEOs recognise the fact that the whole environmental performance process is a continuous system.

Environmental Policy

Environmental policies are vital for a CER. They lay the foundation for any company's environmental program and a CER needs to state these policies and discuss the company's progress towards them. Graph 17 shows a mixed performance with regards to airlines and their environmental policy. A range of zero to four points shows that some airlines have a sound policy, while some are not doing so well. However, the average is above two, which means overall the airlines in the study are above halfway on the SustainAbility reporting parameter scale. SAS and Lufthansa both scored the maximum of four points, although the SAS policy includes a more thorough reference to sustainability. At the other end of the continuum is the Air France CER which has no environmental policy whatsoever.

BA and KLM both scored three points because they did not go the extra step and align the policies with *sustainable development* and the *triple bottom line*. Finnair scored one point because it only set general environmental objectives.

Graph 17: Comparison of Environmental Policy Scores.



Major Themes and Findings

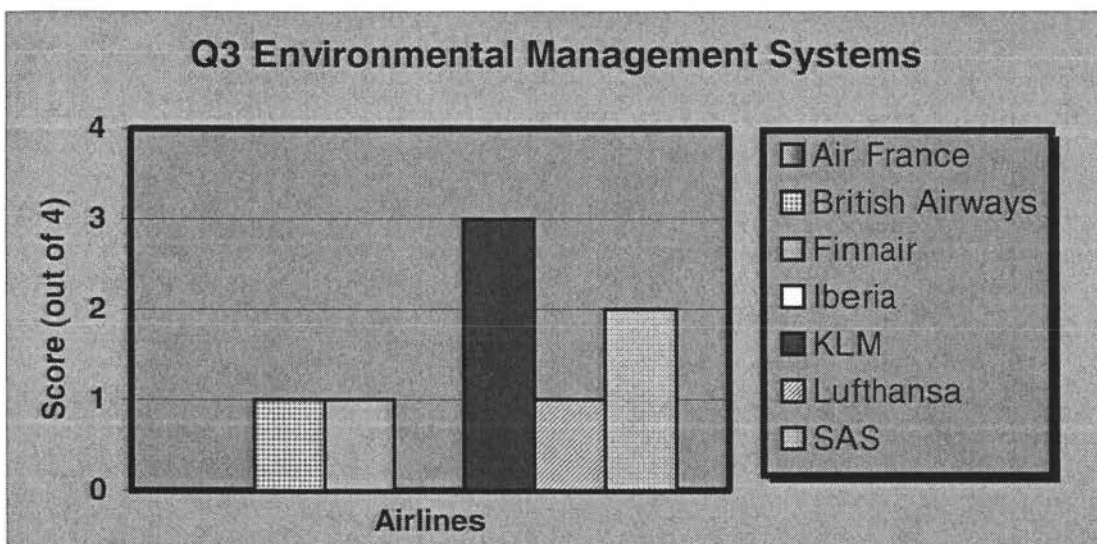
- Most CERs have measurable environmental objectives covering most aspects of the business. However, benchmarking performance is not common.
- A trend to emerge from the policies is that airlines are not generally committing to *sustainable development* and only intend on minimising where economically feasible its environmental impacts.
- Only SAS and Lufthansa truly mention their commitments to *sustainable development*.
- All airlines are resigned to the fact that they will pollute and most are not taking a full life cycle approach.
- Several airlines fail to link their environmental policies to the actions and operations of its suppliers and distributors.

Environmental Management Systems

Environmental Management Systems (EMS) form the very basis of any environmental program in a company. It is vital that the CER discusses the airlines management systems and makes reference to any formal certification such as ISO 14001 and EMAS. The scores for this section are very low, with a highest score of only three and a low of zero. KLM and SAS had the better sections and were the only airline's commitments to certifying the entire company in the medium to short term. Although BA has certified departments it did not give much detail in the CER about the EMS and categorically stated it has no intention in the short term of working towards a company wide EMS.

Graph 18 illustrates the scores for this section below. Lufthansa and Finnair score only one because only one department mentions an EMS and no other major detail is given. Iberia and Air France make no mention of an EMS and scored zero accordingly.

Graph 18: Comparisons of Environmental Management Scores.



Major Themes and Findings

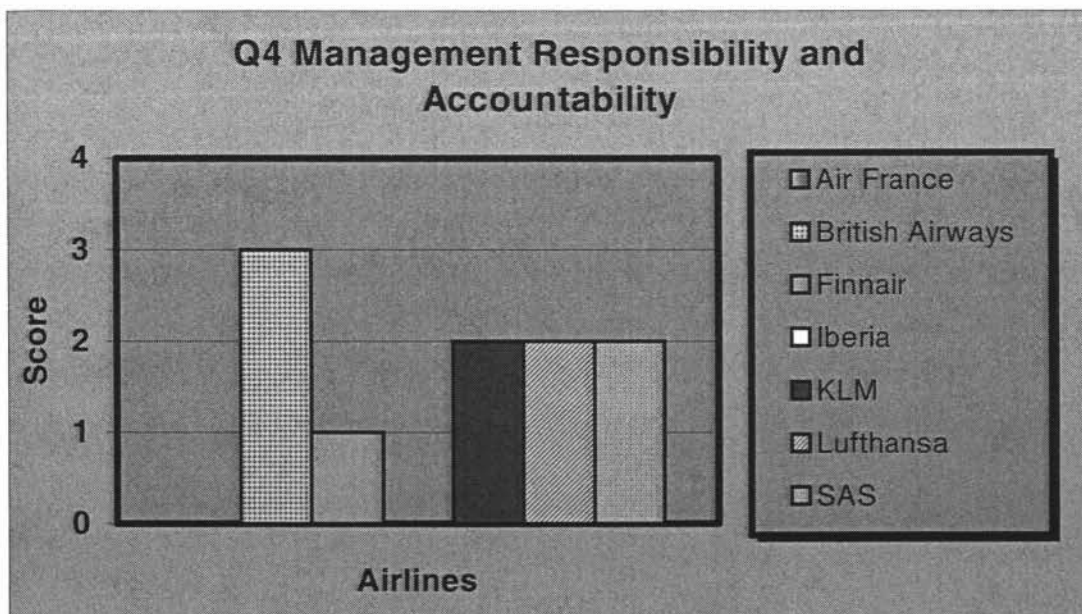
- The airlines that have an EMS generally do not have one that covers the entire organisation. Only SAS and KLM are committed to a company wide EMS.
- Several carriers have departments certified (or working towards certifications) such as BA and Lufthansa.
- To score the top marks in the Survey and to ensure a comprehensive and sustainable EMS exists, it must cover all of the airlines operations and decisions making processes. This is not the case in the majority of airlines.

Management Responsibility and Accountability

CERs must show the reader who is responsible for the environmental performance of the company. The trends to emerge from this section are that airlines are failing to provide descriptions of responsibilities and fail to deliver on the evaluation against external and internal standards. Only BA provides a detailed explanation good enough to score three points, and no airline moves to the next level by incorporating *triple bottom line* policies into the development, implementation and renewal of environmental policies. Airlines are good at describing their environmental structure and most cover all the company's business units. Most airlines have a policy stating that all staff are responsible for safeguarding the environment, and all provide names and contact details of those involved in the various airline environmental organisations. BA scored the highest points because it goes into great detail explaining the responsibilities of staff, managers and environmental director, where no other CER does.

Graph 19 shows in graph form the results of the section regarding Management Responsibility and Accountability. Airlines are also organising their environmental program around a separate division, headed by a manager who is responsible for the environmental work of that department. Another trend to emerge in several airlines including Lufthansa and BA, is the complicated nature of the organisational structure that is required to fully integrate environmental policies into all of a companies various business units and departments. Air France and Iberia score no points because they have no relevant management responsibility material.

Graph 19: Management Responsibility and Accountability.



Major Themes and Findings

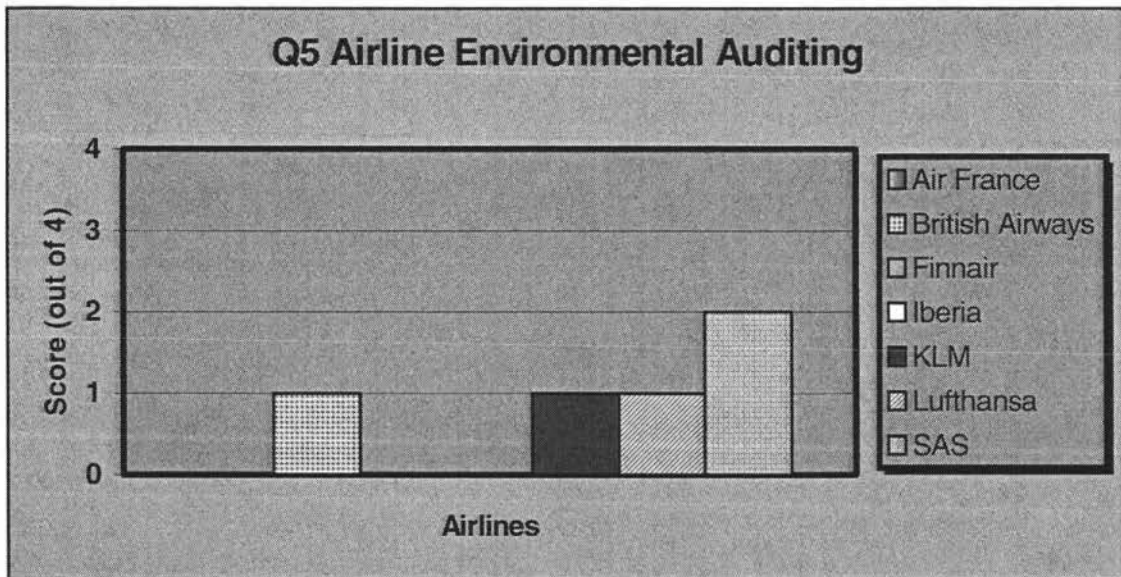
- The trends to emerge from this section are that airlines are failing to provide descriptions of responsibilities and fail to deliver on the evaluation against external and internal standards
- BA scored the highest score because it goes into detail explaining the responsibilities of staff, managers and environmental director, where no other CER does.
- Another trend to emerge in several airlines including Lufthansa and BA, is the complicated nature of organisational structure that is required to fully integrate environmental policies into all of a companies various business units and departments.

Environmental Auditing

Public disclosure of environmental audits is a controversial issue. Most companies are auditing their performance in some business areas, particularly as part of an established EMS. The airlines are not tackling this issue very well at all. Only SAS and KLM were truly committed to implementing an organisation wide auditing system as part of an overall EMS. BA currently audits only selected operations, while Lufthansa and KLM are developing an auditing system for some or all of the companies business units. Air France, Finnair and Iberia make no mention of this topic in their CERs, although Finnair is working towards ISO 14001 in its catering unit.

Graph 20 shows that SAS scored the highest marks (2), followed by BA, KLM and Lufthansa on one point.

Graph 20: Environmental Auditing Results.



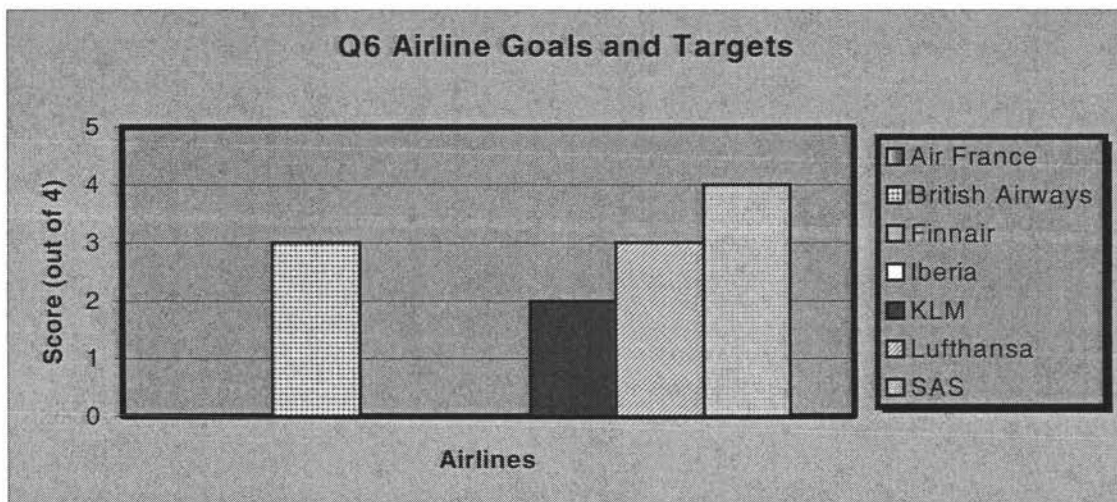
Major Themes and Findings

- Most airlines do not have any formal auditing system. The airlines that have an auditing system only audit selective operations. The link between EMS and the environmental audit is missing. A formal EMS must have a company wide audit. Only KLM and SAS are moving in this area.
- While many environmental policies state that the airline will analyse its operations, a formal audit system is not used to achieve it. SAS scored top marks at two points, while KLM, Lufthansa and BA score only one point. Iberia, Finnair and Air France score zero marks.

Goals and Targets

Goals and targets are necessary for a company to achieve successful performance results. The CER should integrate these targets into the company's environmental discussion showing the company's progress, whether the progress is good or bad. As Graph 21 shows SAS scored top marks while several airlines including Iberia, Finnair and Air France failed to score any points because their CERs did not have any environmental goals or objectives. BA had a good format and was very detailed in its goals and progress reports. While Lufthansa scored three marks, it was a lower three than BA because of the detail BA gave in its CER. KLM only scored a two because the format of the CER made goal identification within the CER difficult for the reader.

Graph 21: Environmental Goals and Targets.



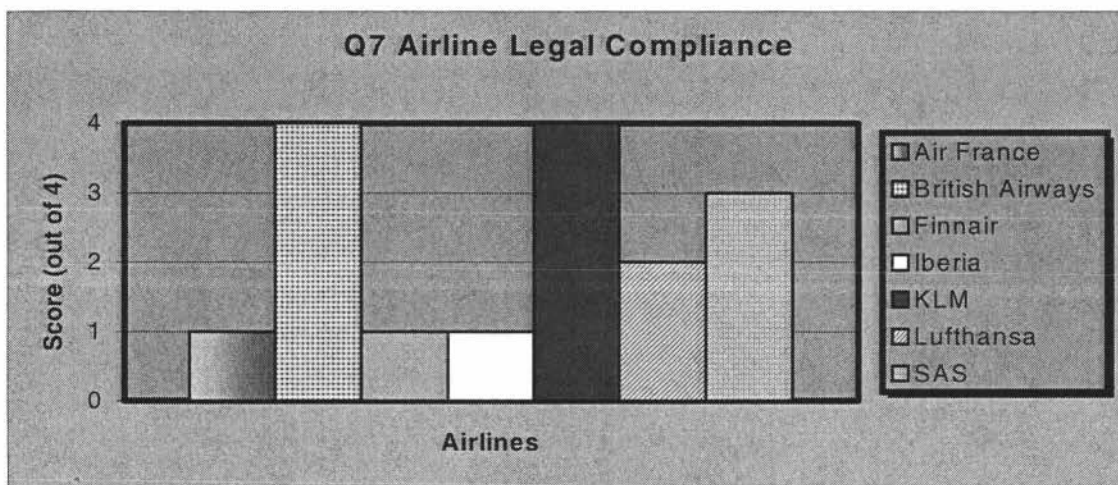
Major Themes and Findings

- The format of many CERs makes the objectives and targets hard to find and identify. The best format seems to be placing goals in the relevant CER sections rather than in one stand-alone section.
- The airlines that scored above two points had detailed goals that covered the whole business and were detailed and SMART. Only SAS is moving towards objectives that include sustainability issues.
- Goal progress is difficult to identify in many CERs; the table format seems to be the best method of illustrating progress.

Legal Compliance

This is a fundamental responsibility of all companies. Without legal compliance content in a CER, it would be very difficult for a company to stage any sort of public credibility. As Graph 22 illustrates, airlines are not dealing with compliance very well in their CERs, although all airlines scored in this section. BA and KLM scored the maximum points because they not only detailed compliance issues and strategies but revealed, unashamedly, the various environmental incidents and breaches that occurred during the year.

Graph 22: Airline CER Legal Compliance.



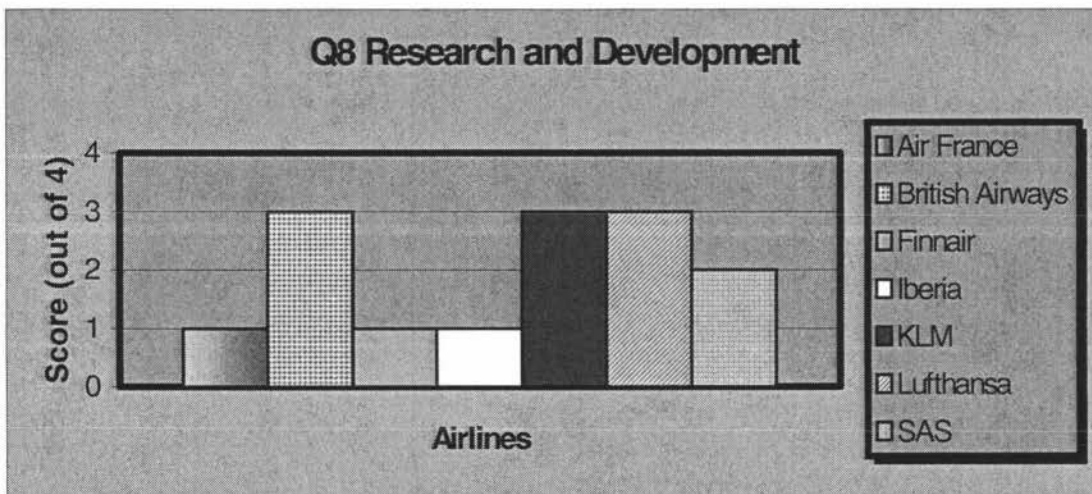
Major Themes and Findings

- Only BA and KLM scored high marks due to the comprehensiveness and transparency regarding compliance issues. All airlines scored something which indicates all are working hard to comply at the very least with compulsory legislative regulations.
- Most CERs do not have separate compliance sections but integrate such information throughout the CER. For clarity and ease of use, airlines might consider a separate section dealing with compliance, legal and environmental breaches. Airlines are not publishing quantifiable data regarding compliance issues.
- Noise compliance is reasonably well covered by most CERs, probably because this is an obvious environmental problem and quite easy for airlines to document and deal with.
- Future compliance strategies are neglected.

Research and Development

If a company is to rise to some of the environmental challenges facing business, they must be involved in Research and Development (R&D). KLM, BA and Lufthansa scored the highest marks because of their detailed accounts of research being conducted and because the research is being undertaken in the full life cycle of the companies. SAS is close behind but does not make the grade because their R&D accounts are quite brief and miss the links with the environmental policies of the company. The remaining airlines score points because all of them are conducting some research but there is no apparent formal system. Graph 23 illustrates the scores for research and development. Lufthansa, KLM and BA score top marks of three points, followed by SAS (2) and Finnair, Iberia and Air France on one point.

Graph 23: Research and Development.



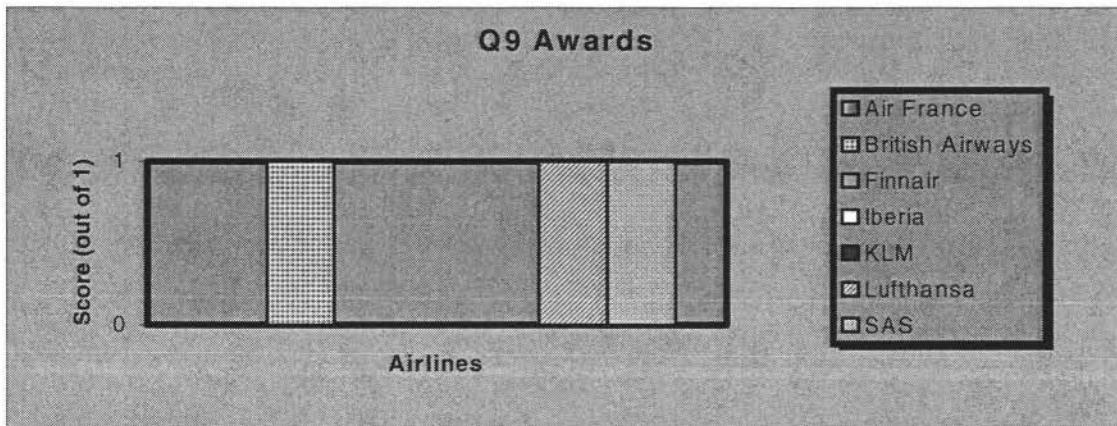
Major Themes and Findings

- No explicit links are made in CERs between environmental policies and R&D activities. All airlines, at a very minimum, are conducting research, mainly into noise issues. The top four airlines are researching most areas of an airlines business and discuss their activities well in the CERs.
- Airlines are working with other airlines and several outside groups on environmental research. Only BA details some of its costs and investments into research.
- R&D not dealt with well in the CERs. R&D should be discussed separately as well as in the various sections within a CER. R&D discussion in the CERs is generally random. No airlines link R&D with sustainability issues.

Awards

Awards stimulate environmental participation and awareness. Companies can gain credibility if they have internal and external awards. Only BA, SAS and Lufthansa have won, sponsor or award awards. Only Lufthansa and BA have revealed in their CERs of an internal award system motivating staff to participate in and developing innovative environmental ideas. Graph 24 illustrates these findings.

Graph 24: Award Scores.



Major Themes and Findings

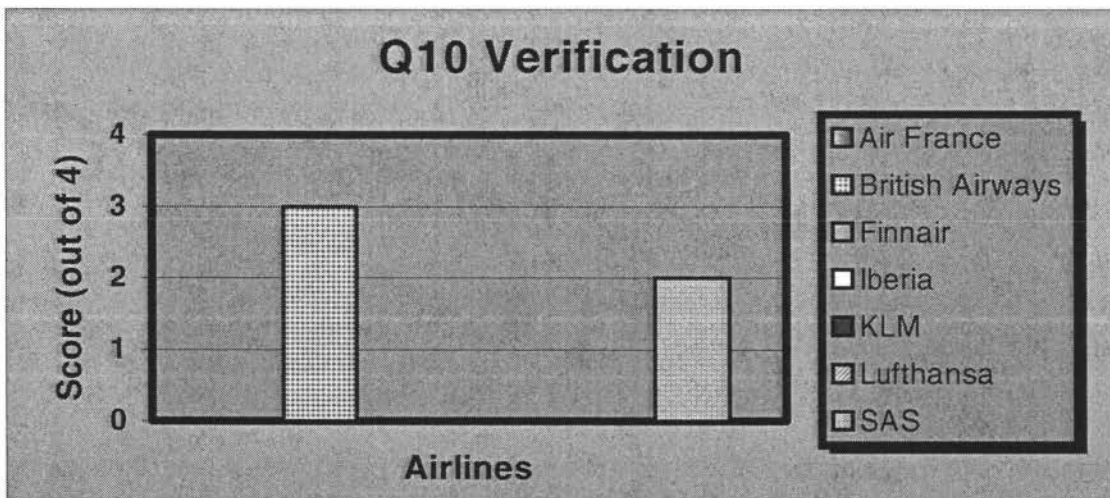
- Only BA and Lufthansa have an internal award system.
- SAS has external award systems.

Verification

An external party verifies company annual reports by law. This gives credibility to the document. Environmental reports should be no different. Only BA and SAS have had their respective CERs audited and verified by a third party. BA scored higher marks than SAS because not only did Aspinwall audit the report for correctness it also made comments about the environmental performance of the company and where the company could improve its performance and reporting processes.

Deloitte Touche AB simply stated that the information presented by SAS was correct and the methods for collecting the data were also correct. No comment was made about where the company could improve. For airlines to score four marks, the audit must be made available in a separate report. Graph 25 shows that the BA verification section scored three points, while the briefer SAS statement scored only two. No other report had a verification statement.

Graph 25: CER Verification Scores.



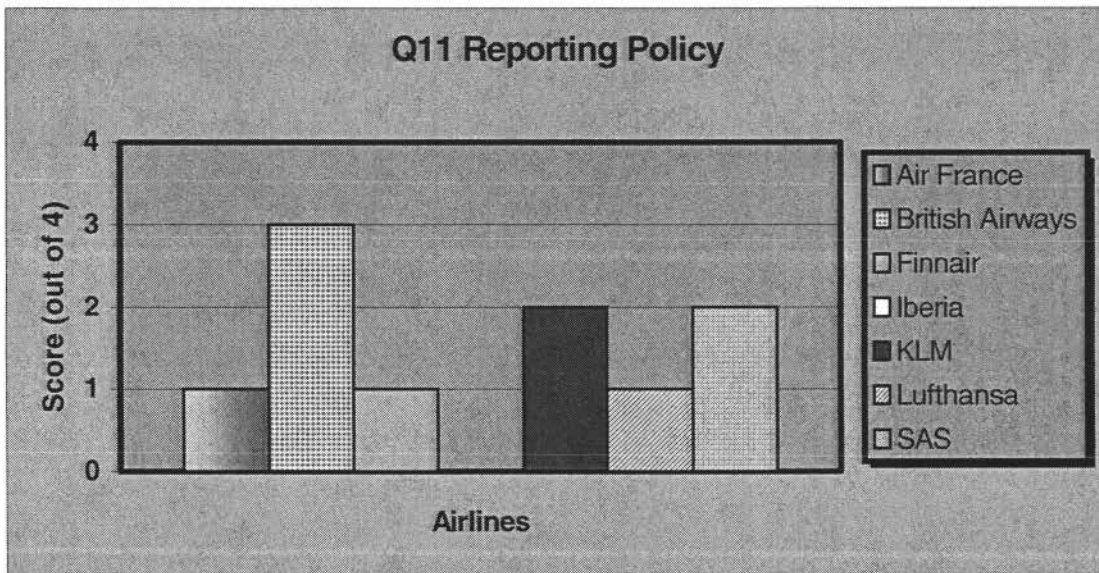
Major Themes and Findings

- The BA verification is very thorough and objective scoring three points.
- The SAS statement was too brief to score any more than two points.
- To score top marks the verification has to be a separate report.
- No other airline report has been externally verified.

Reporting Policy

Reporting policy refers to the company's reporting intentions. Stakeholders need to know why companies are reporting and when companies intend on publishing them. There are an abundance of external standards and frameworks for such documents; companies should refer to any such standard if it is being used as a tool for a CER development. BA scores the top mark of three because, although the reporting policy is rather brief and difficult to find, the airline measures itself against an external reporting standard. KLM and SAS have much more detailed and dedicated policies, but the airlines fail to use an external reporting policy. Finnair and Lufthansa have brief policies and hence score one; Iberia has none and therefore scores zero. Graph 26 illustrates these findings.

Graph 26: Reporting Policy Scores.



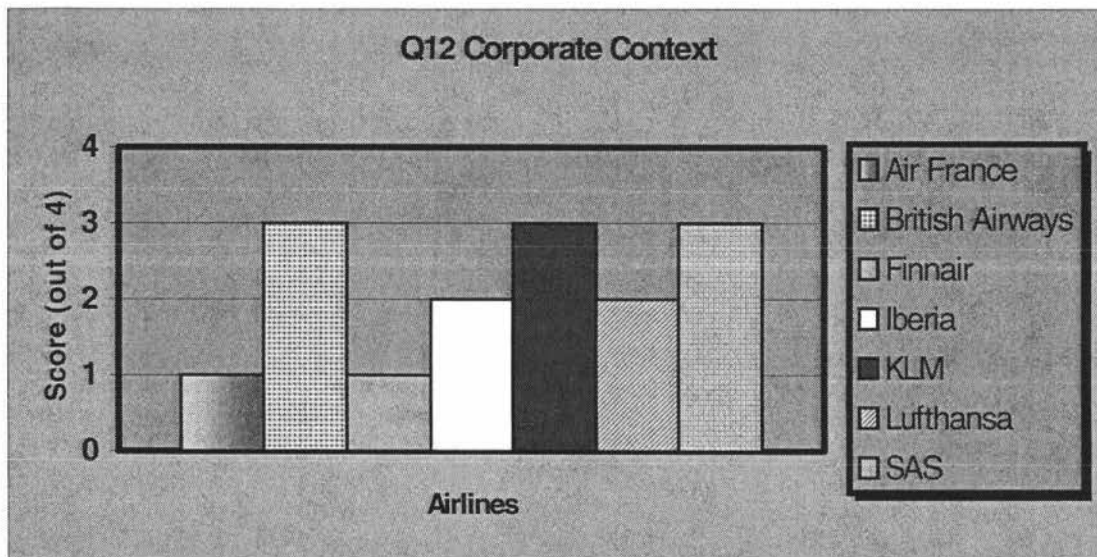
Major Themes and Findings:

- Only the BA CER makes a link to an external reporting standard.
- SAS and KLM have separate reporting policy statements, which makes it easier for a reader to identify the airlines reporting policy.
- Generally, airline-reporting policy is scattered throughout the CER, in sections such as CEO statements and CER introductions, making a definite policy hard to find.

Corporate Context

Contextual information such as financial figures and ratios should be given in a CER to give the CER a context. Too often environmental reports and annual reports are kept quite separate. CERs need more contextual information integrated into them. Airlines have all scored well in this section when compared to the performance in other CER issues. BA, SAS and KLM all scored three marks because they linked environmental impacts with key group statistics and operations. All companies provided corporate context data to varying extent. Refer to Graph 27 for the airline CER scores.

Graph 27: Corporate Context Scores.



Major Themes and Findings

- Most airlines provide some corporate contextual figures.
- Three airlines provide environmental data within this context. BA has an excellent summary of environmental impacts caused by its operations. KLM and SAS, while good, are not as detailed as the BA summary.
- Airlines are not linking essential group statistics with sustainability and *triple bottom line* issues.

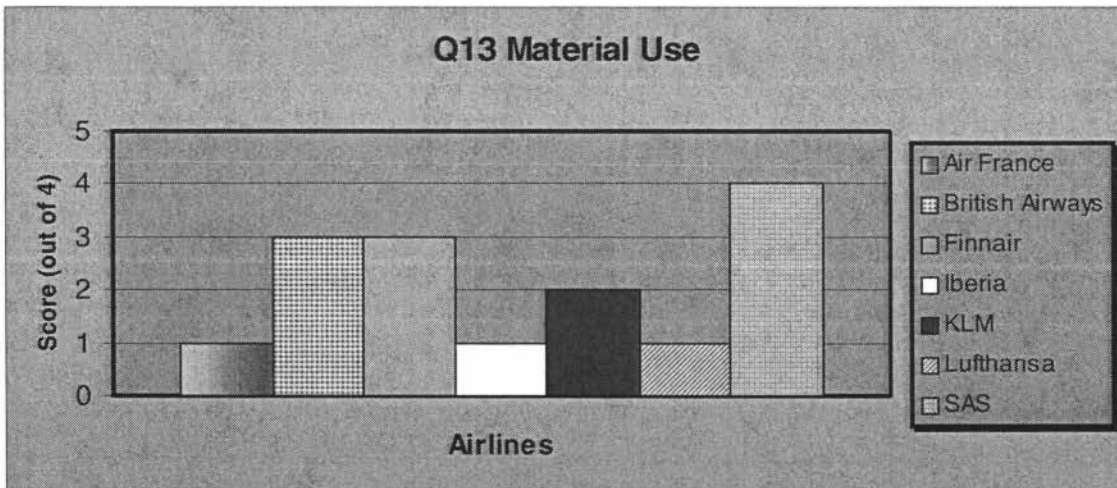
Input/Output Inventory

Material Use

The CERs should include an inventory of environmentally significant materials used, including renewable and non-renewable resources. The graphs below shows that SAS has scored the top marks because of its use of an environmental balance sheet (something that no other airline used). The balance sheet allowed a logical discussion of the materials used in all of the companies operations. Generally the airlines discussed recycling and substituted materials but little discussion revolved around use of non-renewable resources. Airlines admitted they depend on natural resources and all are committed to reducing this dependence.

Airlines are developing systems for assessing material use and ensuring all materials are selected on an environmental impact basis, however while recycling and substitution are discussed no major discussion revolves around the unsustainable material use (fuels etc).

Graph 28: Material Use Scores.



Major Themes and Findings

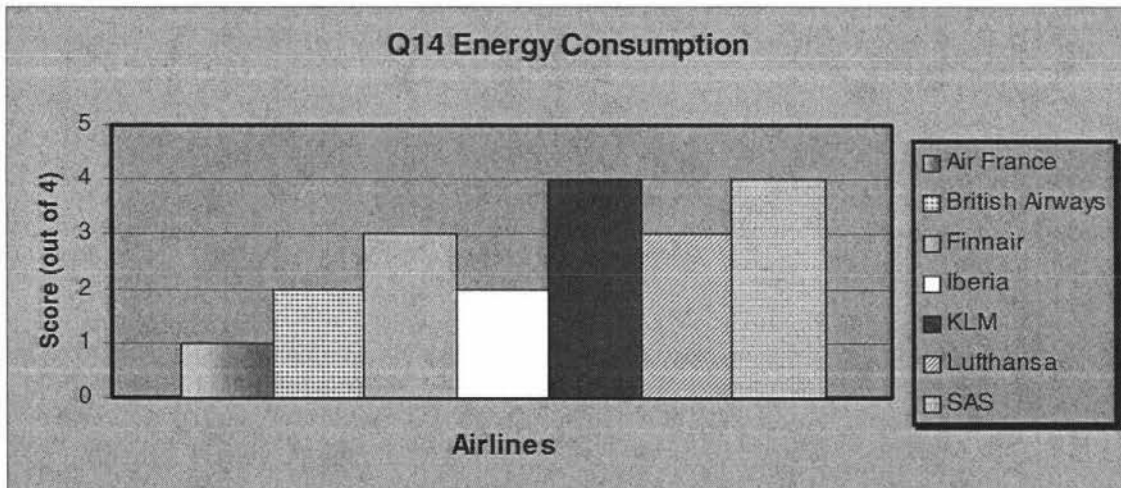
- SAS scored the highest marks because of the comprehensive use of an environmental balance sheet.
- Airlines are pushing for recycling, reuse and use of sustainable materials, however non-renewable resources used for their core business (fuels etc) are not discussed so far as wanting to reduce their use.

Energy Consumption

Most of the world's environmental problems relate to energy consumption. Thus, this information is vital to any CER. KLM and SAS score top marks because they provide a multitude of comprehensive data regarding all facets of energy use. They score top marks because they have systems dedicated to reduce energy use and they work with third parties to increase energy efficiency. Policies and company achievements are also very detailed. Again, the SAS balance sheets provide excellent evidence of energy use and efficiency systems and gains. SAS also benchmarks itself against other companies, which is an important facet of the question. Energy conservation is an integral part of these companies culture and service life cycle.

The other airlines often do not cover all of their operations, indicating the difficulty in collecting all the relevant data. The lower scoring airlines simply did not provide enough data and discussion. Refer to Graph 29 for specific results.

Graph 29: Energy Comparison Scores.



Major Themes and Findings

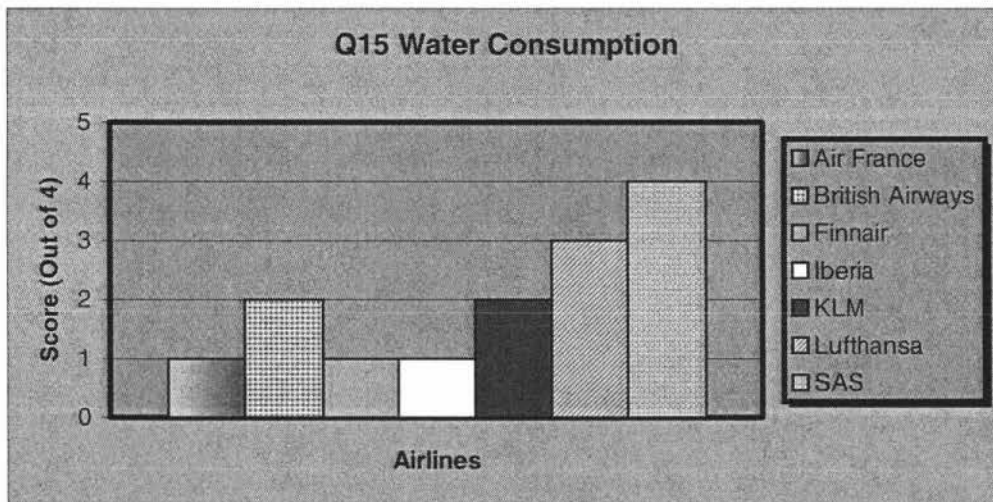
- The top scoring airlines have dedicated systems for identifying energy efficiency gains. Most are very pro-active due to the cost saving tied in with reducing energy consumption.
- The higher scoring airlines benchmark their energy use and have company-wide systems. The lower scoring airlines may only focus on a several operations (flying operations, electricity consumption at one particular facility).
- Lower scoring airlines did not provide enough information, although all subjects are dedicated to the subject.

Water Consumption

Water quality and consumption are pressing environmental issues. Water use is therefore of interest to a company's stakeholders. The lower scoring airlines have very scant details and only have figures for a few operations (i.e. just ground operations). Some admit that reducing water consumption has reached a plateau and is a difficult figure to decrease with an increase in yearly operations. Continuous improvement in this area is not a priority for most airlines due to the correlation between operational growth and water consumption growth. Metering is quite common for airlines to identify areas of high consumption, although not all operations have this facility.

The higher scoring airlines are committed to continuous improvements, reducing consumption, and have company wide water consumption commitments. Whether airlines can deliver is another question. SAS scores the top marks because of the detail given in the environmental balance sheets.

Graph 30: Water Consumption Scores.



Major Themes and Findings

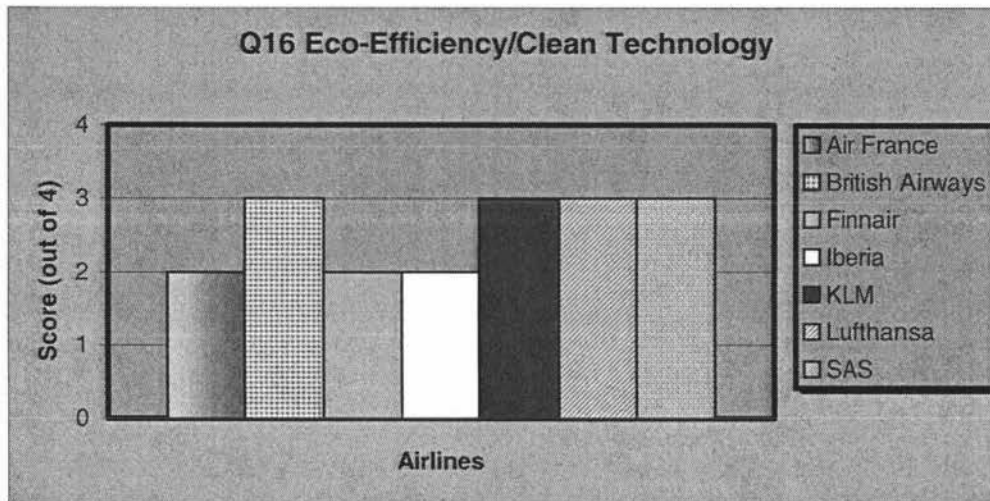
- Water consumption linked to increases in operational activities. Very difficult to reduce.
- Most data is very scant and does not cover all of the companies operations. Metering is used but not widespread.
- The airlines that score top marks have company-wide systems (part of an EMS), have detailed data and are committed to reduction and continuous improvements.

Eco-Efficiency/Clean Technology

Clean technology is often seen as one of the answers to reduce businesses environmental impacts. If a company is spending resources on clean technology and eco-efficiency then this should be discussed in a CER. This section was completed well by the reporting airlines but mainly refers to a company's efforts regarding noise and fuel efficiency (i.e. new aircraft). Airlines are also pro-active regarding clean technology for waste and material minimisation. The airlines that did not score very well failed to link these eco-efficiency gains with goals and targets.

Generally, all airlines are very committed to new technology as tools to increase environmental performance. The higher scoring airlines linked these with goals and targets and linked the technology with environmental impacts.

Graph 31: Eco-Efficiency Scores.



Major Themes and Findings

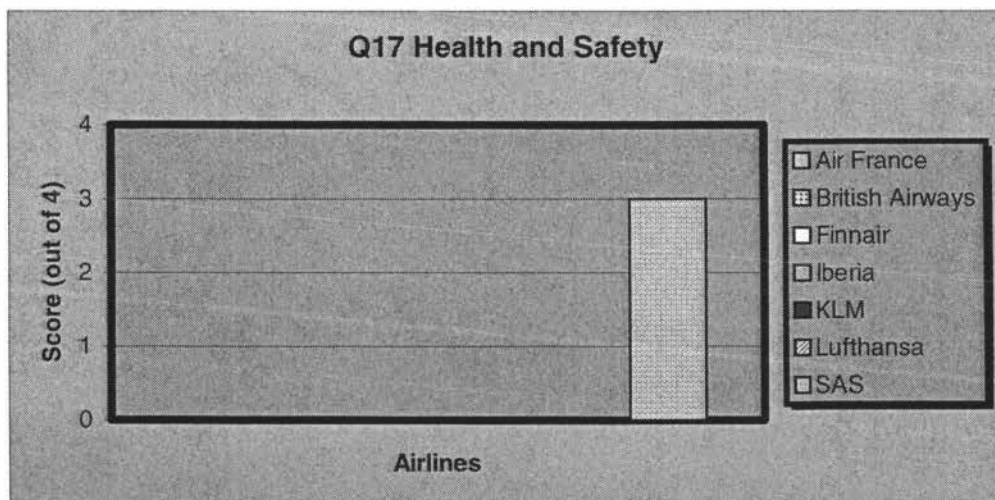
- The airlines are all very keen to use clean technology to reduce environmental impacts. This mainly refers to quiet and clean aircraft and waste minimisation technology.
- The scores generally reflect the detail to which the airlines discuss this question in their CERs as all are committed to the idea of eco-efficiency.
- Only the top scoring airlines have linked the technology with goals and provide in-depth discussions regarding their programs and initiatives.

Health & Safety

Environmental concerns are often integrated into Health and Safety matters. It would seem logical that something that harms the environment also harms a company's stakeholders. However, not many companies integrate the two issues. Only SAS has a section regarding Health and Safety within its CER. The other airlines do not link environmental performance with their Health and Safety work. Some airlines discuss Health and Safety in their environmental policies (i.e. providing a safe working environment), but little details are subsequently given.

Health and Safety is an integral part of the SAS business system and there are systems in place regarding Health and Safety improvements within the organisation. The company does not benchmark its performance and hence cannot score top marks.

Graph 32: Health and Safety Scores.



Major Themes and Findings

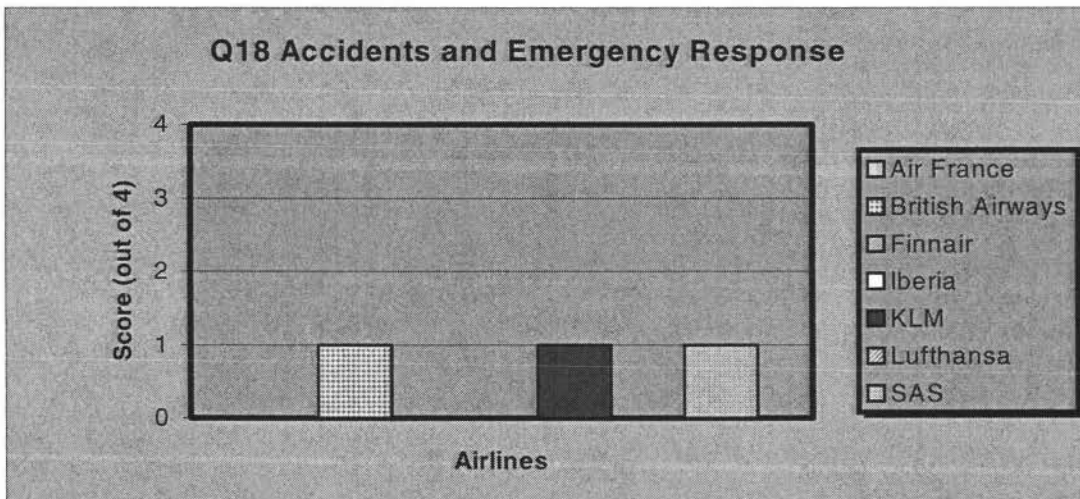
- Only SAS scored on this topic. No other airline gives details in the CER regarding Health and Safety. While airlines have policies regarding a safe working environment for employees few details are subsequently given.
- SAS has systems to improve Health and Safety and is an integral part of the business.

Accidents and Emergency Response

Environmental accidents are the concern of most. Stakeholders want to know how companies are going to deal with accidents and emergencies and want to know what the actual risks are. However, this was another section totally ignored by several CERs. Only BA, KLM and SAS have any such discussions regarding accident and emergency response. The scoring airlines give examples of environmental incidents and discuss the plans they have to deal with subsequent emergencies. Legislation is also referred to in detailing the company's liabilities regarding emergency response.

This is not a section that was competed well. No major details are given and the issues are not consolidated in one section within the CER.

Graph 33: Accidents and Emergency Response Scores.



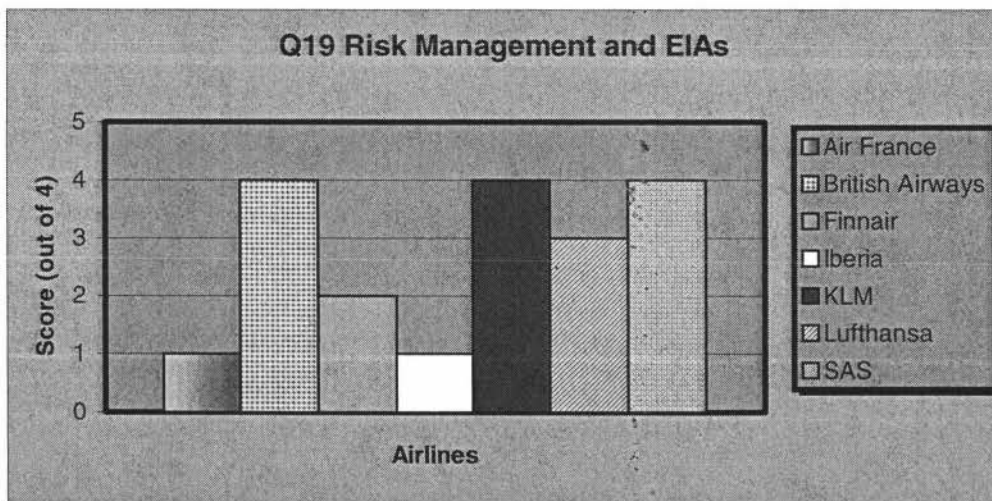
Major Themes and Findings

- A poor section for the CERs. Data (when there is some) is scattered throughout the CER and is scant in detail.
- Only selective emergency contingencies are discussed.

Risk Management & EIAs

Environmental Impacts Assessments (EIAs) are generally neglected by organisations. Generally, EIAs are carried out only for new projects and not for day to day activities. Stakeholders want to know when reading a CER what the company's risks are and how they are being managed. Again the major leaders SAS, KLM, and BA have scored the top marks because they have in-depth discussions in their respective CERs regarding Environmental Impact Assessments and risk management. These airlines provide relevant policies and management responsibilities regarding risk and impact assessments. Most of the new operations and projects are conducted with impact assessments. All the airlines have policies stating that they operate with the environment in mind. KLM makes the point that such assessments are a part of the company's EMS. SAS has similar systems for continuous improvements and assessments. Case studies are often given to highlight this risk management approach. The lower scoring airlines all comment about impact assessments but few details are given.

Graph 34: Risk Management and EIA Scores.



Major Themes and Findings

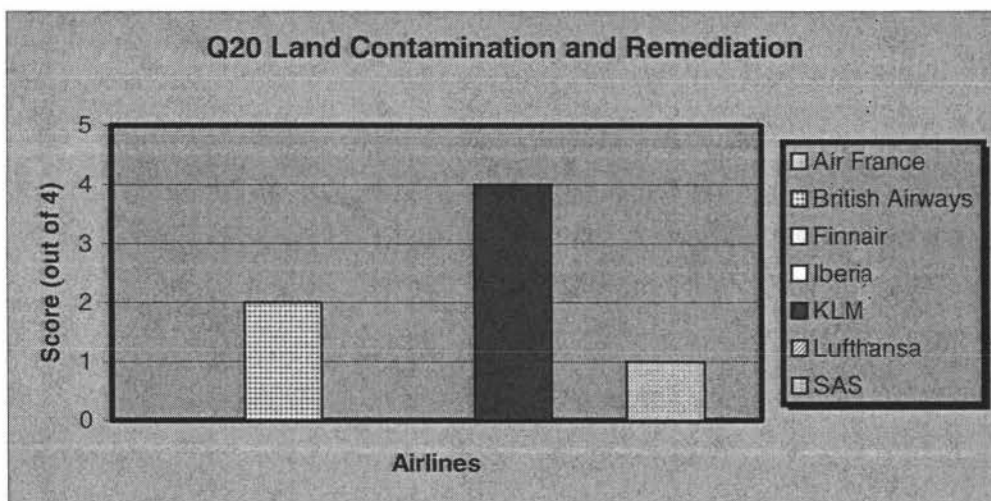
- All airlines operate with the environment in mind. Most assessments refer to new projects, buildings and operations.
- Airlines striving for an EMS find that EIAs are a part of ISO 14001 certification.
- Case studies are used for examples of the EIA.
- Lower scoring airlines provide scant details, although all airlines show some level of concern regarding risk management and EIAs.

Land Contamination and Remediation

This is a highly sensitive issue. Legal issues and the costs surrounding this issue make it difficult for companies to disclose this sort of information. However, sustainability is about transparency and accountability. Organisations should be discussing these issues.

However, this is another section not completed well by the majority of airlines. KLM scored the top marks because it has a dedicated “soil” section within its CER detailing land contamination issues and remediation actions. KLM has a formal system in place regarding this issue and is an integral part of the KLM management system. The company is investigating and continually remediating sites in accordance with the law and voluntary agreements. BA and SAS score lower marks due to the brevity of this issue within its CER. Without doubt, the airlines have systems in place; however, they are not communicated very well. The other CERs did not mention this issue.

Graph 35: Land Contamination and Remediation Scores.



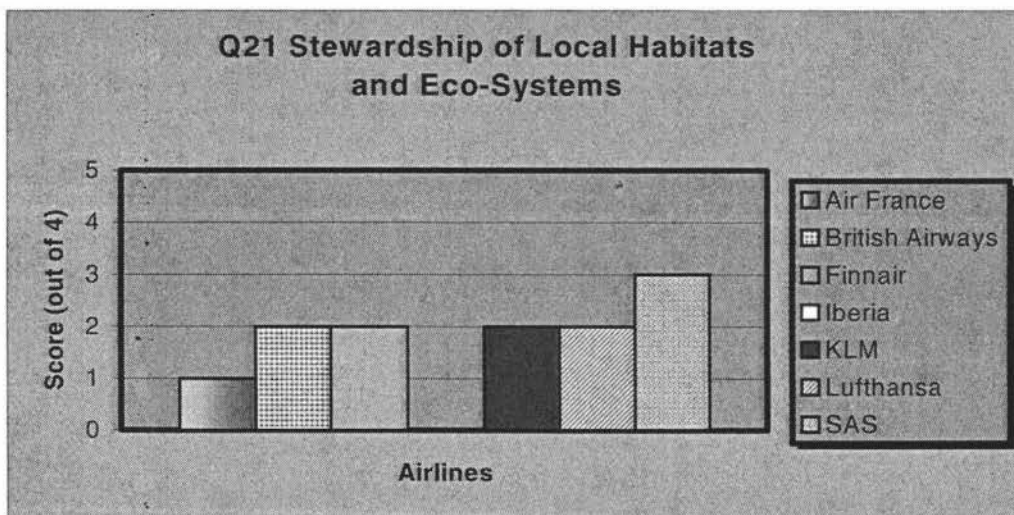
Major Themes and Findings

- KLM has a formal and continuous improvement system regarding investigation of soil contamination and remediating sites.
- The other scoring airlines have very few details, although both have formal land contamination systems in place. The information is just not communicated well.

Stewardship of Local Habitats and Eco-Systems

Airports and airlines affect local habitats and eco-systems due to the size of the operations and the resources and land they require. All CERs must indicate potential impacts on local species and discuss remedies. This issue on average was not covered that well by the airlines. SAS again scores top marks because it discusses protection of eco-systems but like all the other scoring reports does not have a dedicated section relating to this issue. Most of the airlines have policies relating to the protection of the environment and give some examples. Airlines like BA also have intense tourism and conservation campaigns.

Graph 36: Stewardship Scores.



Major Themes and Findings

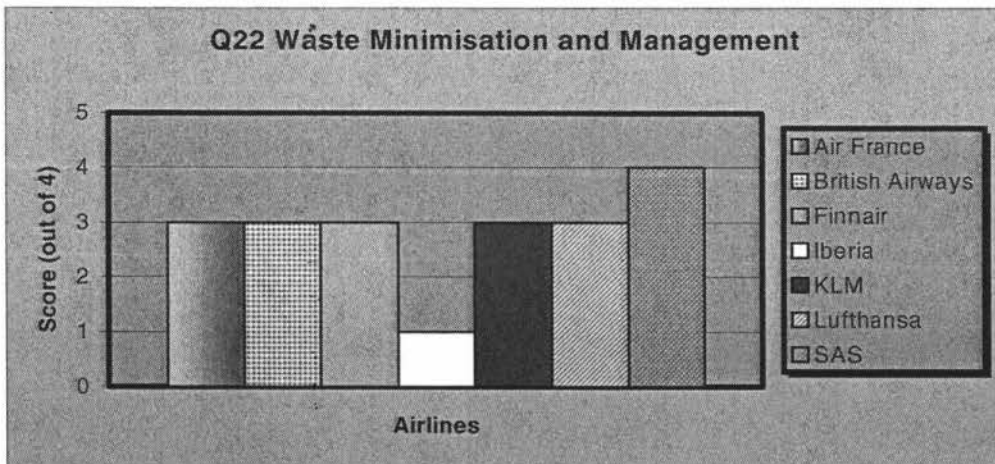
- All airlines that scored points are dedicated to the protection of the environment and local flora and fauna. Much anecdotal evidence is given regarding the airlines caring for the environment. However, there is no dedicated section pertaining to this issue.
- The airlines need to develop upon their policies and case studies into a separate discussion section.
- BA has a dedicated tourism and conservation section.

Waste Minimisation and Management

The CER should cover company-wide waste outputs. Recycling, reuse and substitution must be discussed. Stakeholders want to know about waste management and companies should be proud to disclose information on such issues as recycling and reuse efforts.

The airlines scored quite highly on this question. SAS scores top marks again, but several airlines are following on three points. The airlines are very dedicated to minimising waste and general waste management, probably because of the direct cost savings efficient waste management can bring an airline. The top scoring airlines all have dedicated systems to reduce waste through recycled material use, product reuse and substitution with environmentally friendly products. Generally, all the airlines have systems that cover the entire airline's operations. New technology and innovations seem to play a major role in achieving lower waste. The disclosure of waste is very detailed as well, providing the reader with plenty of quantifiable data. The SAS balance sheet is the best example of this, showing all waste and reduction of waste company-wide. An issue to emerge is the fact that airlines maybe hiding behind the outsourcing of services to reduce their "own" environmental impacts. Airlines are now outsourcing many high waste functions like maintenance and catering. SAS scored top marks because it works for best practice standards.

Graph 37: Waste Minimisation Scores.



Major Themes and Findings

- Very detailed disclosures from all company operations. Airlines are committed to reducing waste. The high scorers have very thorough waste management systems.
- Committed to reuse, recycling and product substitution and use of new technology. Hiding behind outsourcing to avoid responsibility. The SAS balance sheet approach seems to be the most thorough presentation of data.

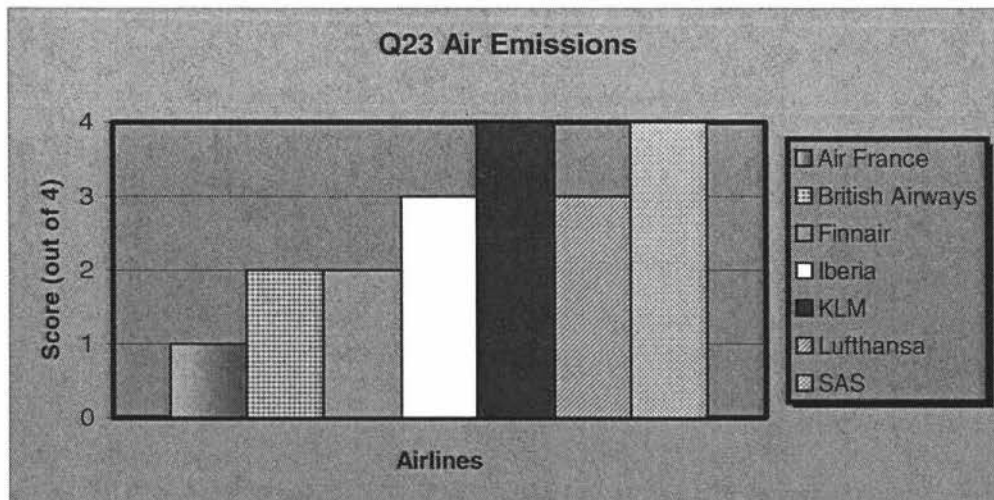
Air Emissions

Air emission issues were well covered amongst the airline CERs. This is probably due to the pressures facing companies producing greenhouse emissions. Airlines give detailed information and research being conducted into air emissions from both air and landside activities. All airlines are committed to new aircraft and equipment with lower emissions. BA and Lufthansa have car-pooling and cycling initiatives for its staff including loan schemes for the purchase of public transport tickets. The high scores reflect this commitment to reducing air emissions. The high scoring airlines also dedicate space to solvent emissions and reducing their use.

Airlines are also conducting research into new procedures to reduce emissions and are highly organised in the area. The reports also put the issue into a global perspective, mainly to show how little the industry actually contributes to the greenhouse effect. The major scoring airlines give very detailed data about emissions company-wide; they give objectives and detailed discussion of the progress towards these objectives. Reduced emissions normally mean reduced fuel use and therefore cost savings for the airlines, hence the motivation for this issue.

Airlines are using battery-powered vehicles where possible, particularly for vehicles on the airside of the operations. SAS and KLM score top marks because they benchmark their performance with respect to emissions with either competing airlines or government standards. Again, the SAS balance sheets provide an excellent format for this type of analysis.

Graph 38: Air Emissions Scores.



Major Themes and Findings

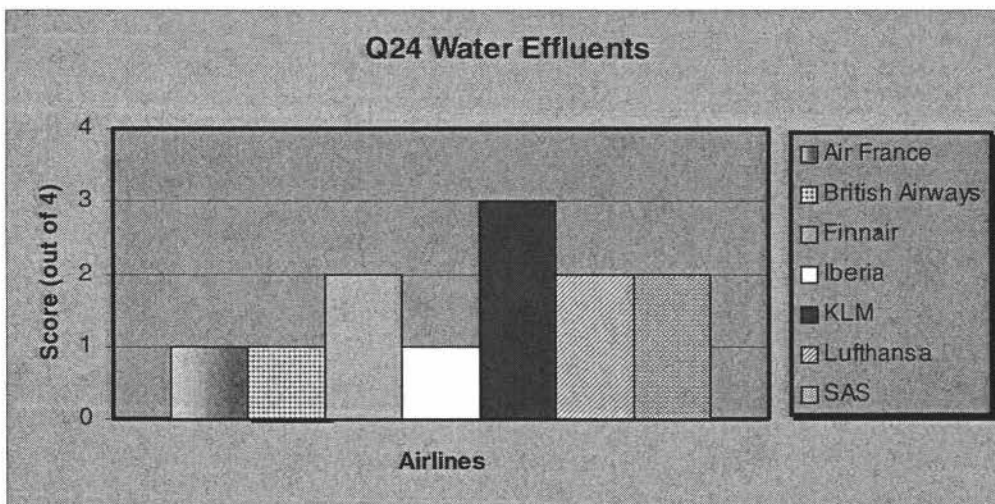
- A very thorough account by the top scoring airlines. Very dedicated to reducing emissions from all activities. Plenty of quantifiable data from all operations both on the ground and in the air.
- Emission reducing per revenue passenger mile because of efficiency gains but overall emissions are increasing company-wide (generally).
- Use of new technology, new aircraft and battery powered vehicles as well as promotion and development of public transport.
- Dedicated to research on emissions and involvement in working groups and international committees.
- Potential from reduced emissions to reduce costs.
- Top scorers benchmark themselves against external standards.

Water Effluents

The CER should disclose all water emissions including water treatment facilities and systems. This section overall was not completed well by the reporting airlines. The data provided by most of the airlines was brief and incomplete. While there are indications of water effluent systems, the lack of detail relegates most of the airlines to low scores. The KLM CER has a separate section on wastewater, which paints a very complete picture, including quantifiable data, objectives and programs. The other CERs do not have this detail.

All the airlines treat their wastewater and have various permits for water effluent disposal; the major point is that the airlines do not discuss this data in the depth that is required by the framework.

Graph 39: Water Effluent Scores.



Major Themes and Findings

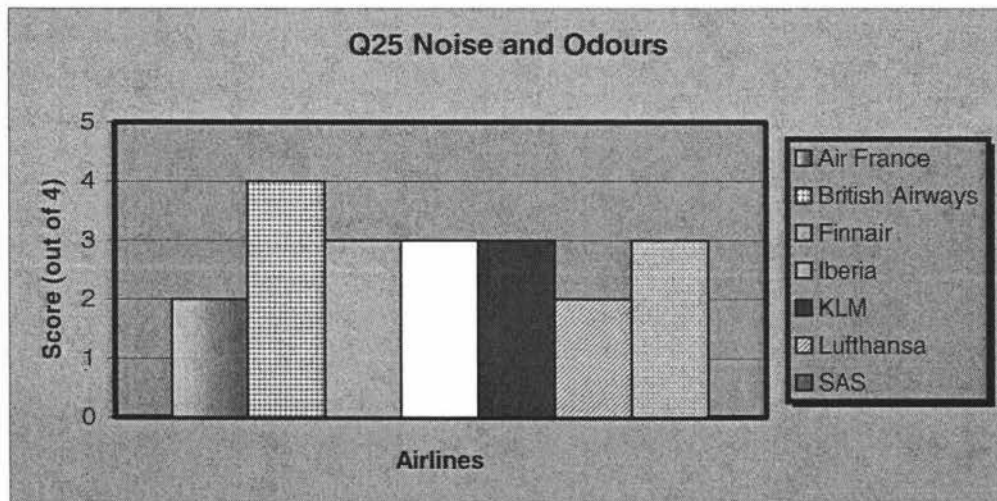
- Only KLM had a dedicated in-depth wastewater section giving quantifiable data across all company operations.
- The lower scoring companies had quantifiable data but it was not company-wide.
- While all companies dealt with the issue, the lack of detail and comprehensiveness relegated the CERs to low scores.

Noise and Odours

Noise issues are the most controversial environmental impact for airlines and hence it plays a major role in all of the CERs. All CERs did reasonably well in this section with BA scoring the top marks, closely followed by several other CERs including Finnair, Iberia, KLM and SAS. Lufthansa did not do so well due to the sporadic nature of the data, which was spread throughout the CER, rather than consolidated in one section. All airlines are investing in new aircraft, vehicles and procedures to reduce noise in all aspects of the business. All the companies are involved in major research projects into noise, particularly due to the fact many European airports have noise curfews and fines.

BA had the most comprehensive noise section, but all airlines gave quantifiable data regarding aircraft noise and airside equipment noise levels. Several airlines also gave details of the fines they incurred for airport noise breaches. Noise levels are generally only reported at hub airports, other airport noise levels are not reported on. The only major negative point to come out of the question was that odours were not covered at all by the airlines. Airlines are dedicated to the issue of noise and are working hard to reduce noise impacts.

Graph 40: Noise and Odours.



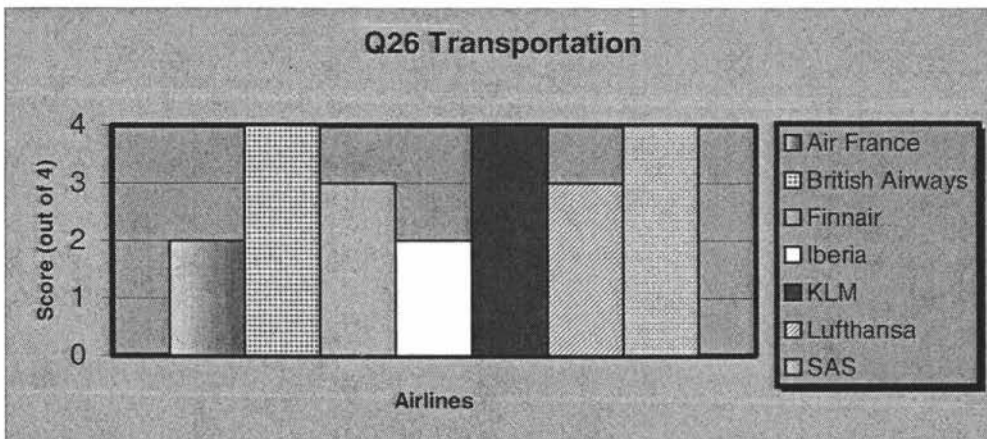
Major Themes and Findings

- Airlines are dedicated to noise issues, but miss out odour problems completely. Airlines are investing in new aircraft, research, equipment and procedures to curb noise.
- Airport noise is generally only recorded and disclosed in the CER from the airline's hub airports, missing out the operations at other airports around the globe.
- All CERs gave excellent noise data and noise discussions.

Transportation

This was a difficult question to apply to an airline because their major business is transportation. In this context, this question is really a general reflection of the entire airline's business and not just the transportation side (as in say a manufacturing firm with a production base and some transportation operations). The airlines that scored the top marks are progressing well on reducing their transport-related impacts and often benchmark their progress with either the competition or government standards and regulations. The lower scoring airlines have formal systems in place to reduce environmental impacts related to transportation. Not much else can be said regarding this question, the scoring protocols are not very precise and perhaps are redundant in an airline context. Framework problems (such as this) will be discussed at the end of the CER critique.

Graph 41: Transportation Scores.



Major Themes and Findings

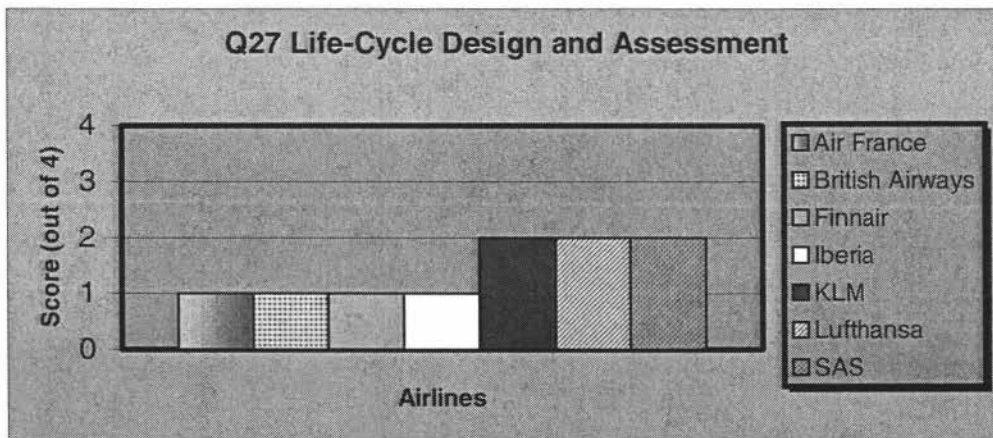
- A difficult question to answer for a transport industry as the entire CER deals with transport related environmental impacts. Transport for airlines is not a side business like in a manufacturing/distributing firm.
- The scores are therefore a reflection of the airlines general performance regarding the reduction and minimisation of transport related environmental impacts.

Life-Cycle Design

This is a new issue for businesses interested in their environmental performance and is very difficult to apply, but is an integral part of any sustainability journey. Life Cycle Design or Life Cycle Analysis (LCA) is not a well-covered issue within the CERs as it is a system that takes into account environmental impacts in a “cradle to grave” approach. Currently, airlines only think of environmental impacts in a static and contemporary mindset. LCA requires companies to think from the conception of a product or service to its completion or use.

Airlines generally have no formal LCA systems operating on a day to day basis. The airlines that scored top marks have general LCA systems for new projects and construction operations (i.e. BA and the new Terminal 5 project). All of the participating airlines believe that they act with the environment in mind, but this is not manifested in any sort of formal LCA system. While there is some evidence of assessments of this kind occurring there is very little detail given. LCA is definitely in its infancy within this industry, although there is evidence within the CERs of its emerging prominence from just a tool for new projects to a tool for all company operations.

Graph 42: Life-Cycle Design Scores.



Major Themes and Findings

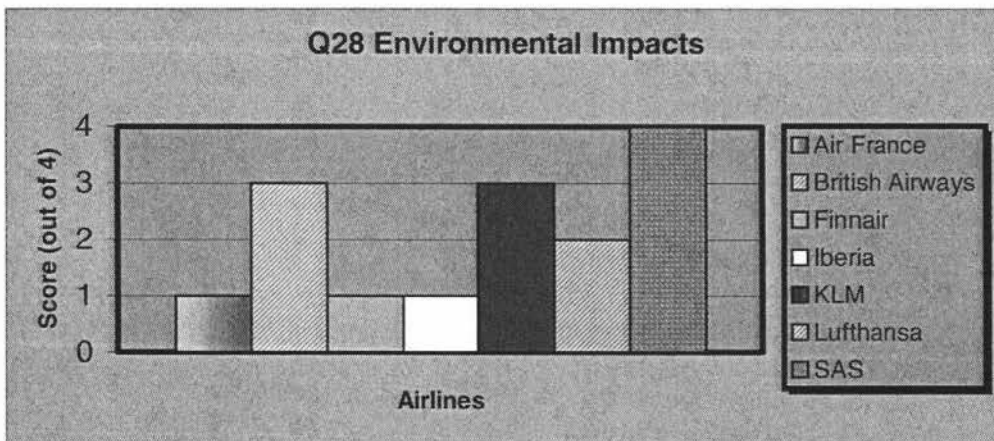
- Not a well answered question.
- Airlines tend to conduct assessments sporadically and for mainly new projects.
- Not a mainstream tool, very little detail given in the CERs.

Environmental Impacts

Most companies focus on emissions and waste instead of the impacts on the environment that these issues create. Companies must track their impacts and discuss them in the context with their environmental emissions and problems. This question had a range of scores across the airlines. SAS scored top marks with its use of the environmental balance sheets and impact assessments, systems that the other airlines are not utilising. Airlines all discuss their environmental impacts on a micro and macro scale, however the top scoring CERs tend to devote large amounts of time to research, discussion and impact assessment. The lower scoring CERs were brief and provided little evidence of thought out discussions of individual environmental impacts associated with their own operations. The main environmental impacts discussed are noise, emissions, waste and for the top scorers tourism.

Only SAS benchmarks its performance, while the general trend has been for the other players not to do this.

Graph 43: Environmental Impacts



Major Themes and Findings

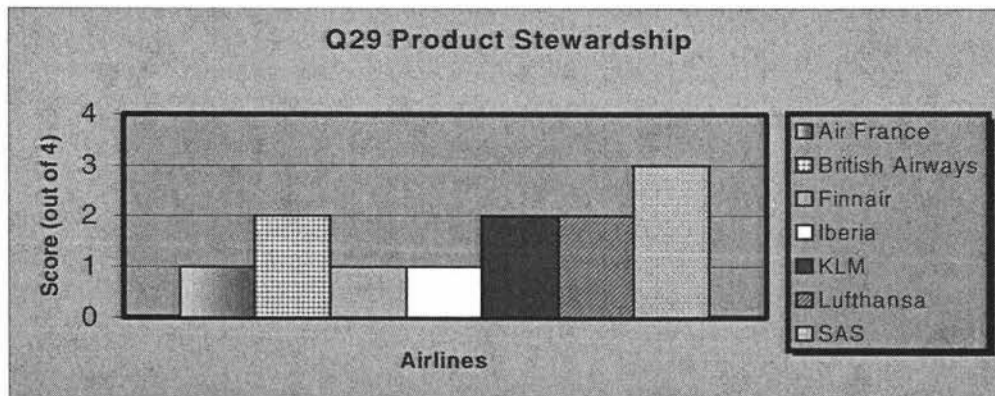
- SAS scored the highest marks due to its use of quantified environmental balance sheets and benchmarking.
- The top scorers all devote much time to noise, emissions and waste.
- Research into environmental impacts is strongest with the top 4 airlines.
- The lower scorers simply did not provide the depth required for a higher score.

Product Stewardship

Product stewardship is aimed at manufacturing businesses and is a difficult issue for intangible products (i.e. airline passenger services) to deal with and score well under. However, *service* stewardship is important, but the scoring system nonetheless is biased towards *product* stewardship. Questions relating to service stewardship need to be developed for an airline specific CER framework. However, airlines can apply “product stewardship” to the purchase of products such as aircraft, landside equipment etc. Service industries can then find themselves falling under both service and product stewardship responsibilities. The issues surrounding product stewardship are not covered by the airlines in any detail, as shown by the scores depicted in Graph 44.

SAS again top scored because of the airlines social and environmental responsibility, commitments to sustainability and use of continuous improvement systems to improve environmental performance. SAS is continually assessing its “impact on society”. No other airline was this comprehensive. Generally, airlines are practising good stewardship both in a service and in a product context. The higher scoring airlines are committed to recycling, reuse and substitution in businesses like catering, flight training and maintenance and reducing impacts of the service component (i.e. cleaner aircraft etc).

Graph 44: Product Stewardship Scores.



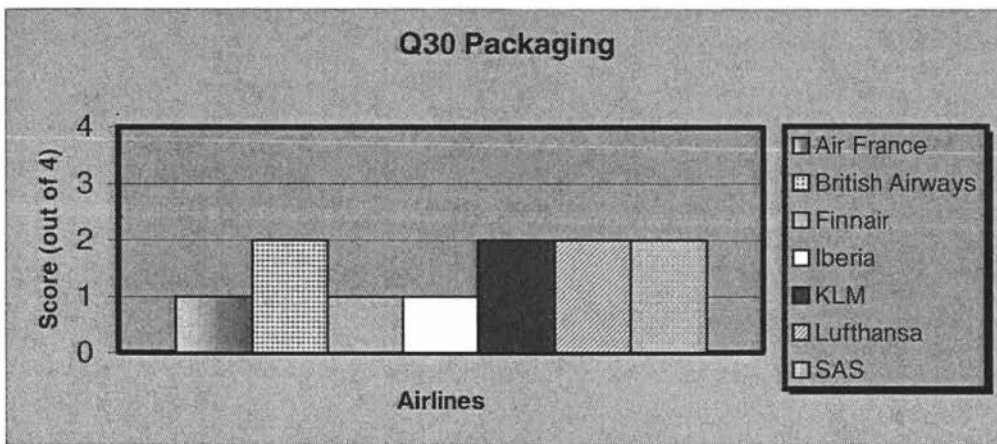
Major Themes and Findings

- A difficult question to apply to airlines in its current structure. Needs to be more service orientated. However, airlines purchase products such as aircraft and the framework therefore still applies.
- However, airlines that have comprehensive environmental management practices both in a service and product (catering etc) score well nonetheless. The fact these airlines publish a report demonstrate their environmental stewardship.
- Airlines that recycle, reuse, have continuous improvement systems, have LCA and are socially (and environmentally) accountable score well in this section.

Packaging

Airlines are responsible for, and produce and abundance of packaging, particularly in their office, workshop and catering operations. Airlines do not do very well in the question however. Only BA has a small section dedicated to packaging. However, all of the airlines are committed to product substitution. Substitution is based on such issues as the amount of packaging it has and the type of fibers and processes it is made from. All the airlines recycle and reuse to varying extents and airlines such as KLM, SAS and BA are committed to reducing packaging. The difference in scores seems to be the amount of data provided as all airlines clearly show they are committed to a reduction in the use of resources.

Graph 45: Packaging Scores.



Major Themes and Findings

- All airlines are recycling and reusing to varying degrees. The higher scoring airlines are substituting products based on such issues as packaging.
- The top four airlines are certainly working in such areas as catering concerning the reduction of material use/recycling etc.
- The low scorers are working in this general direction. However little data is provided to score higher marks.

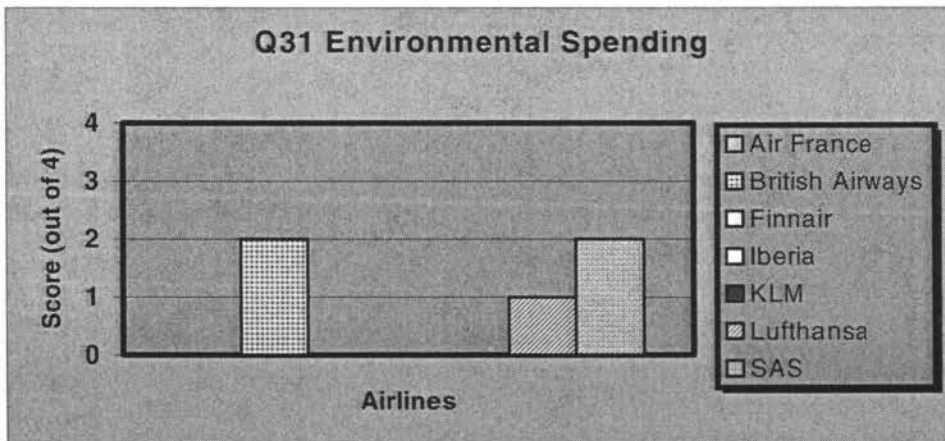
Finance

Environmental Spending

Many European countries have mandatory laws regarding reporting on environmental costs. However, it would seem beneficial for a company to disclose its environmental spending, if it were indeed spending anything. Only SAS, BA and Lufthansa scored in this section. SAS top scored on two points because the CER always backed up its environmental work and programs with spending statistics. BA had a detailed table of the money it had spent on environmental initiatives, fines and savings incurred. However, this graph was only a selection of figures and was by no means complete. Lufthansa briefly discusses environmental spending.

Generally, airlines are not detailing this sort of information thoroughly in their CERs but keep expenditure and money issues for the annual reports, keeping the CER and annual reports quite separate in terms of content. Airlines are not detailing current or projected capital costs, operating costs and savings in the detail that is require by the framework.

Graph 46: Environmental Spending Scores.



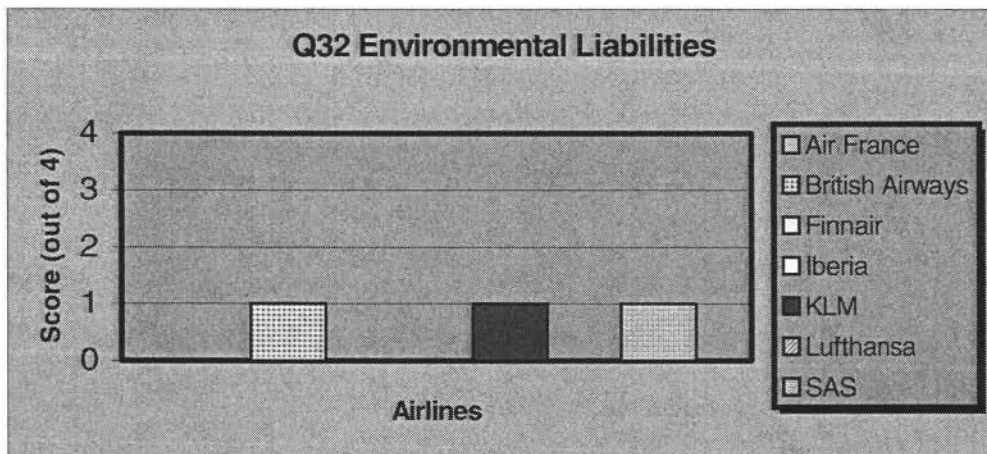
Major Themes and Findings

- Only a few airlines are disclosing financial data, and the data given is generally not complete or accessible. SAS and BA are the only airlines close to achieving top marks due to their semi-detailed financial data. No airline is dealing in projected spending etc.
- Airlines are keeping their financial reports and CERs quite separate.

Environmental Liabilities

This is a difficult issue to assess. What monetary value does a company place on pollution? How much does an environmental accident cost? What is an environmental liability? The answers to these questions will often differ from company to company, industry to industry and from society to society, if indeed they can be accounted for at all. Environmental liabilities are also not often able to be assessed using current accounting practices (Environmental Cost Accounting is a very new field). Nonetheless, companies must discuss current and future liabilities. This is information that investors and the financial sector are particularly interested in. Companies with high environmental liabilities are now unattractive investments. Again, this section was completed very poorly, only SAS, KLM and BA rate on the scoring system. These airlines discuss their liabilities, but in no great depth. Legislation is discussed by most airlines but no liabilities are identified with their potential costs and the processes and products involved. Projected liabilities are totally avoided.

Graph 47: Environmental Liability Scores.



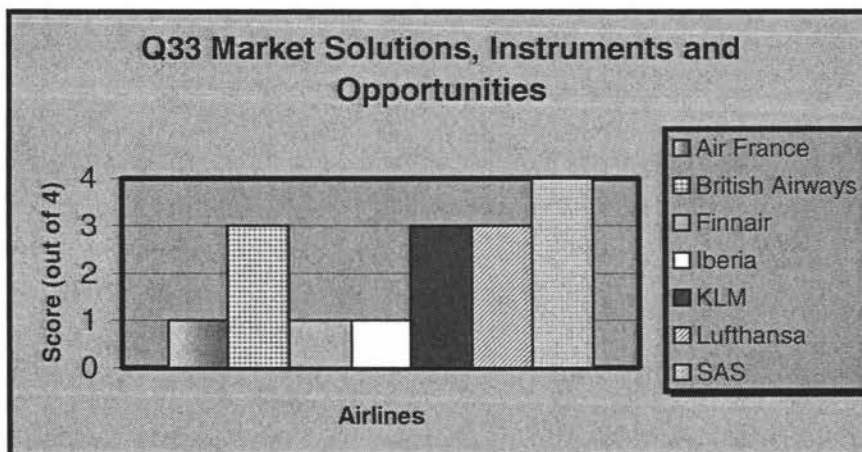
Major Themes and Findings

- Only brief discussions by the scoring airlines. Not attempted by most, and those that did were not detailed to score any higher.
- Current liabilities, costs and the products and services involved as well as projected liabilities are not in general covered.
- Several airlines discuss legislation they are complying with and the environmental incidents incurred during the reporting period.

Market Solutions, Instruments and Opportunities

Economic solutions such as taxes and fines are being used to deter environmental impacts. CERs should discuss this issue, coupled with any fines and taxes it has incurred. This was one of the highest scoring questions in the section. Airlines that scored well are heavily involved in research, industry initiatives, awards and environmental programs. SAS scored the top marks because it publicly benchmarks its performance against industry leaders. The major scoring airlines detail the taxes and fines they are paying and often state that they are against environmental charges such as airport emission charges (BA and Finnair for example). Generally, the airlines are reporting on their environmental initiatives on a global scale, but they are often limited to home hub systems.

Graph 48: Market Solution Scores.



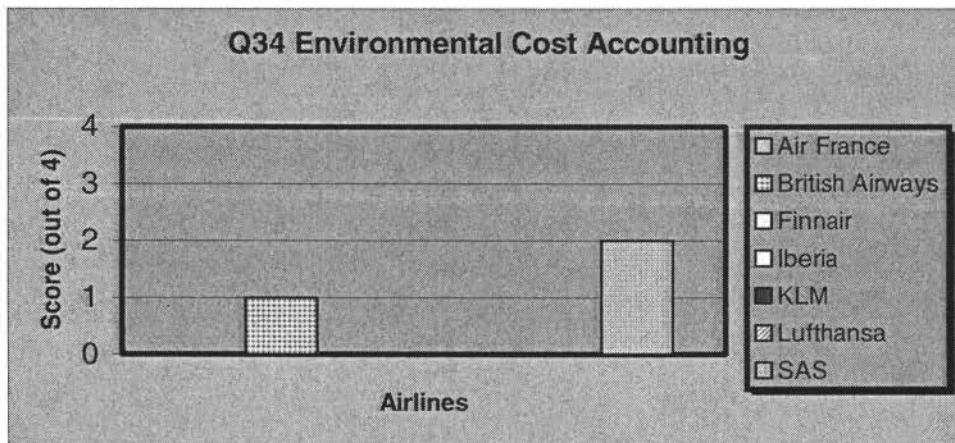
Major Themes and Findings

- The airlines that scored well are reporting fines and taxes they incur and express their opinions regarding them.
- SAS is the only regular benchmarker of its own environmental performance.
- The airlines are reporting on all their initiatives. Most only discuss (in any detail) their operations at the major hub systems. This may be because of the severity of the impacts at these sites and the liability airlines face at their home airports.

Environmental Cost Accounting

Environmental Cost Accounting (ECA) is a method for internalising environmental costs. Currently, not many companies actually pay for polluting. These costs are external to the company. ECA is traditionally an area in which companies do not perform well. CERs must disclose ECA calculations and allocation of external costs. Environmental Cost Accounting was a very poor scoring question with only SAS and BA scoring any points. The reasons for this are simple, airlines in general are not using ECA in their CERs and the airlines that use ECA do not discuss it in much detail. SAS and BA are the only carriers that are developing environmental accounting methods and discuss the issue in the CER.

Graph 49: Environmental Cost Accounting Scores.



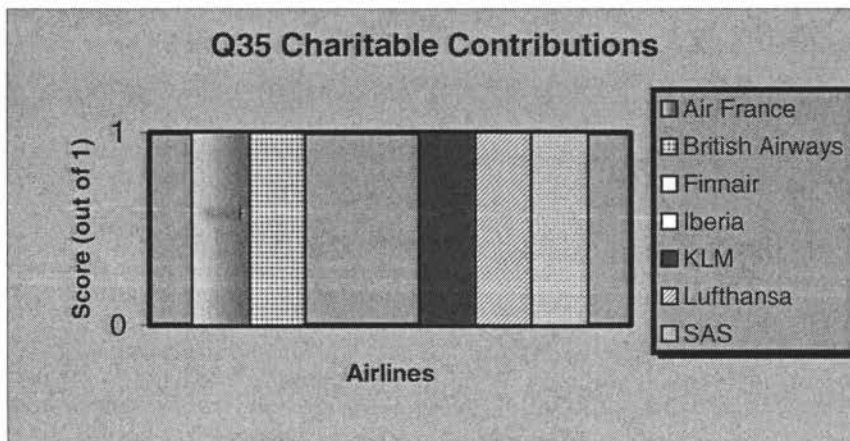
Major Themes and Findings

- Only BA and SAS are developing ECA, and they report this in their CERs. The other airlines avoid this topic. Not done at all well.
- While airlines discuss environmental costs, these are not integrated into mainstream financial statements within the CER (or maybe at all).

Charitable Contributions

Most companies give donations and sponsorship. CERs are the ideal format for this sort of information to be disclosed in. Only Iberia and Finnair failed to score the maximum of one point in this question. The other carriers publish in their respective CERs the donations and charity work they do. Often the carriers will donate seats on a flight to a charity or like BA will donate money from such efforts as office recycling programs. Several carriers such as BA also conduct conservation and tourism charity work.

Graph 50: Charitable Contribution Scores.



Major Themes and Findings

- Only Finnair and Iberia miss out in this question. The remaining carriers freely publish their charity work and donations.
- Popular donations include free air travel and money.

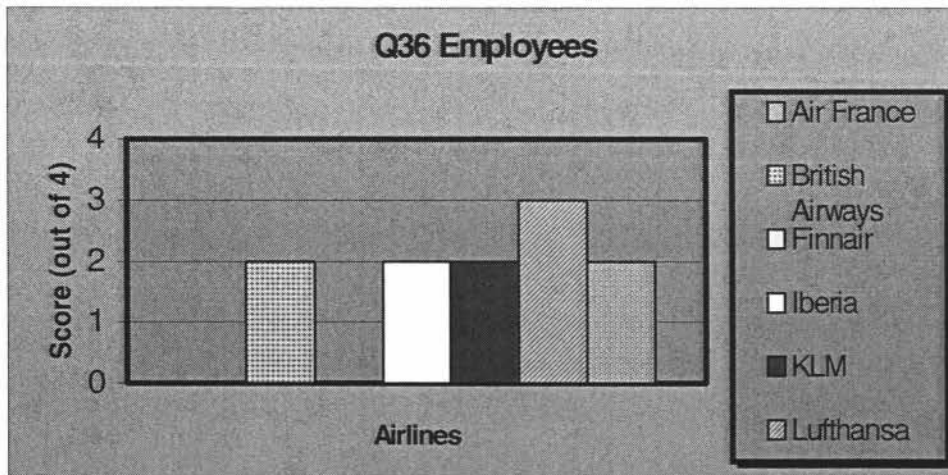
Stakeholder Relations

Employees

Many of the airlines showed that they had reasonably comprehensive relationships with their staff. Most agree that, without staff involvement, Environmental Management Systems will inevitably fail. Most of the scoring airlines trained their staff regularly on various induction and refresher courses. Several airlines also used internal “green” award systems to encourage staff in this area. Lufthansa, the top scorer provides staff with major training programs for all managers, aircrew and catering staff. The scoring airlines also had environmental policies referring to the need for staff interaction in the whole environmental management system including the requirement for comprehensive training. BA in particular gave the numbers of staff being trained and had goals relating to further staff training numbers for the next period.

The only negatives to come out of the question, apart from the non-scoring airlines, was that the training tended to be biased towards management and professional positions and the coverage in the CERs is quite brief. It is obvious that the airlines understand the importance and the need for a good relationship with employees. However, this needs to be developed more in the CERs by disclosing staff training numbers, benchmarking company performance with industry standards and a more detailed discussion of the relationship the company has with its employees.

Graph 51: Employee Scores.



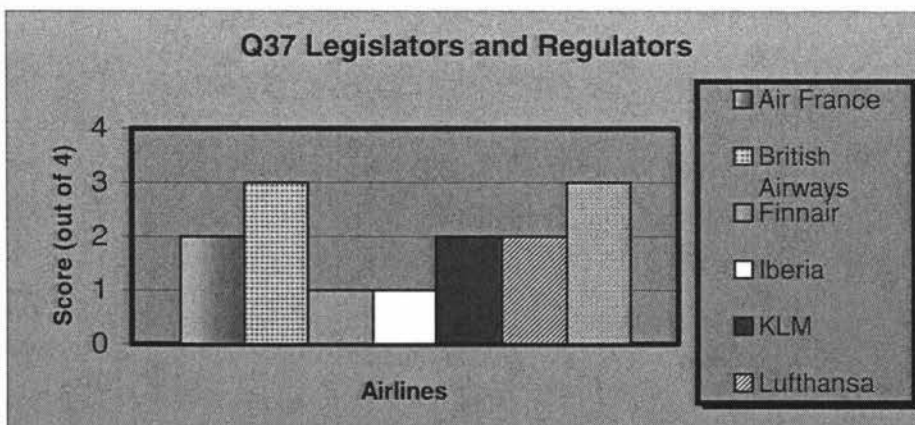
Major Themes and Findings

- Airlines understand the importance of good relations with employees. This is not always discussed in detail within the CERs, although the scoring airlines had environmental policies stating as much.
- Airlines are heavily involved in staff training, awards and incentives, although this is biased towards management and professional positions.
- Airlines need to quantify the training numbers, benchmark their performance and discuss employee relations in greater depth.

Politicians, Legislators and Regulators

This question was the highest scoring in the section. This indicates the importance placed on regulations, legislation, and the need to comply with them and to be involved in the process of developing them. All airlines showed capacity for working with industry bodies, legislators and NGOs, particularly for noise and emission issues. BA works closely with such stakeholders on tourism and conservation issues as well. Airlines also showed their concern for the environment by participating in several different voluntary agreements relating to mainly noise and aircraft emission levels. No airlines scored four points because no airline benchmarked its relations with industry standards, although this seems quite a difficult task to accomplish. SAS had a very clear section on this stakeholder relationship; the remainder of the CERs had details scattered throughout the CER. This points to the need for a consolidation of such material, as is the case for issues such as legislation and environmental permits.

Graph 52: Politicians, Legislators and Regulator Scores.



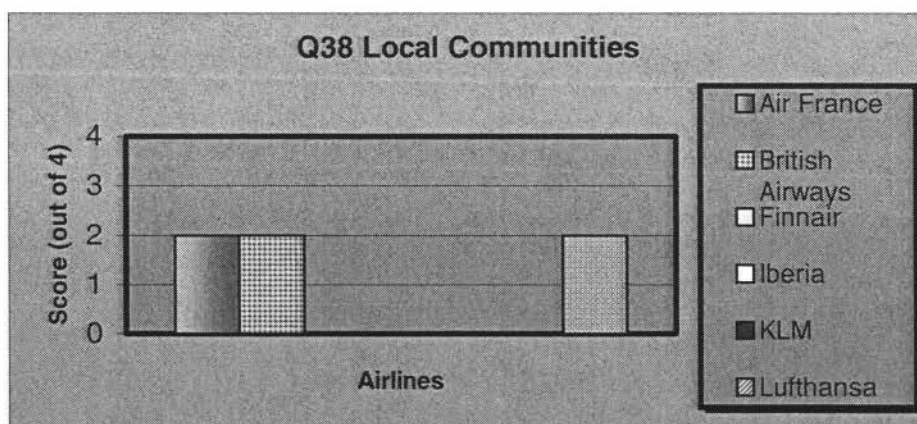
Major Themes and Findings

- All airlines had relationships with legislators, regulators, industry groups and NGOs to varying levels.
- Many airlines participate in voluntary agreements.
- Most of the discussion refers to noise and emission issues.
- This issue requires a separate section with detail, and maybe including some industry benchmarking.

Local Communities

While airlines indicated the importance of communication and dialogue with local stakeholders (in environmental policies), very few followed through with any real content in the CERs. The community consultation airlines are involved with generally concerns aircraft noise issues. Expansion of hub airports seems to be on the agenda for most of the reporting airlines and all were therefore quick to point out the extensive consultations in progress with affected local communities. This issue, like most in this section tends to be brief and unconsolidated; the reader has to really search for the material. All airlines agree to “openness” and the importance of dialogue, however little evidence is given in the CERs, as shown by only SAS, Air France and BA scoring in this round. For airlines to score higher marks, they needed give details of the dialogue between the parties in all company operations. A separate section would also help facilitate better scoring patterns.

Graph 53: Local Community Scores.



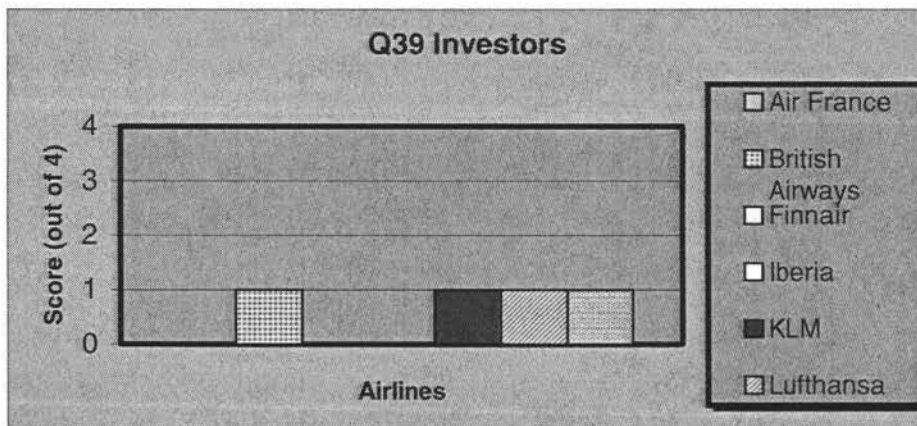
Major Themes and Findings

- Only SAS, Air France and BA score in this section, mainly detailing dialogues with local communities and noise issues (generally through new airport expansion plans).
- Airlines are committed to dialogue and openness with stakeholders in environmental policies, this is not followed through with detail in the CERs.

Investors

Environmental impacts and liabilities are valuable pieces of information for investors. Companies with high environmental impacts and liabilities are not an attractive investment option. CERs should be targeted for this group of readers. However, this was another question that was completed poorly by the reporting airlines, which is puzzling, as one of the main target audiences for a CER surely must be the investor. However, this finding is congruent with similar themes emerging from the critique of the CERs in the Finance section of the framework: CERs and financial information are not well integrated. This included details of investor relations. Only general information is provided by the airlines that mention investors at all in their CERs. Airlines need to provide detailed discussions of dialogue with investors including feedback on challenges, economic priorities and the development of new tools for company rating and benchmarking.

Graph 54: Investor Scores.



Major Themes and Findings

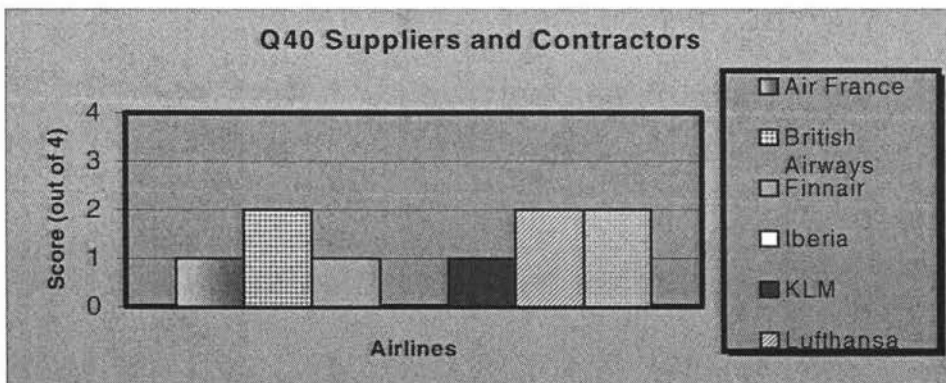
- No major details relating to investor relations are released. This is similar to the financial trends that have emerged in the former section; CERs and financial data are kept quite separate.
- The scoring airlines keep the discussion very brief. Airlines need to provide more detail about this relationship including current and future challenges and priorities.

Suppliers and Contractors

This question forms part of the life cycle approach to environmental management. Companies must extend their sphere of influence to cover the environmental impacts and concerns of its suppliers and contractors. Environmental management must be a partnership, as sustainability cannot be achieved in isolation. This section was an improvement on the last few questions in this section. Almost all airlines have a policy of promoting environmental concerns and issues within their “sphere of influence”; this often includes suppliers and contractors. The airlines are certainly large enough to place pressure on these companies to conform to airline company environmental policies.

The critique revealed that while almost all airlines stipulate some environmental performance standards with suppliers and contractors, this only extended to a few selected partners. Airlines are also outsourcing many functions, which seems to mean that they are no longer responsible for the environmental impacts now that the operations are outside of the company. This is only indicated in a few rare examples. Most believe that they are responsible within the “sphere of influence”, wherever that may extend to. This section was still light in content and mainly referred to working with aircraft manufacturers and catering services. It did not extend company-wide. Again environmental policies were not followed through with evidence and appropriate content. Airlines need to discuss this relationship in greater depth including challenges, priorities and benchmarking.

Graph 55: Suppliers and Contractor Scores.



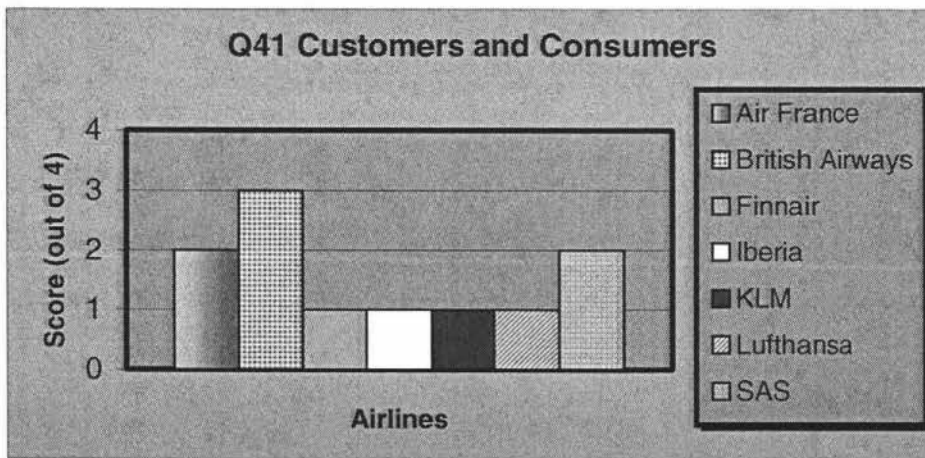
Major Themes and Findings

- All airlines have policies relating to this relationship and working with suppliers to meet environmental performance criteria. This issue mainly refers to working with aircraft suppliers and building contractors etc. It does not seem to be an all-inclusive relationship with all suppliers and contractors. CERs require greater depth and need to indicate challenges and priorities within these relationships.

Customers and Consumers

Environmental performance is seen as a way of reassuring and meeting the expectations of customers and consumers. A CER is an excellent way of revealing to a company's stakeholders its pro-active stance on the environment. BA scored the highest in this section because it discussed the relationship with its customers in relative detail and the airline also uses consumer attitude surveys (which the company did poorly in this period). BA also has a strong customer relationship in terms of tourism and conservation and trying to make consumers aware of the environmental issues surrounding these activities. All the airlines have some sort of consultation with customers and the scoring patterns indicate the depth to which this dialogue takes place. Generally, the CERs show little detail about this issue, although most have policies relating to openness and communication. KLM and SAS are quite strong in their "social responsibility" ideals, although not enough detail is provided specifically about customers. Generally, all airlines provide data to customers regarding environmental ideas and initiatives in an effort to promote an increased sense of environmental awareness. To score better marks the framework simply wants the CERs to include more discussion of this relationship including the challenges and priorities facing the relationship.

Graph 56: Customers and Consumer Scores.



Major Themes and Findings

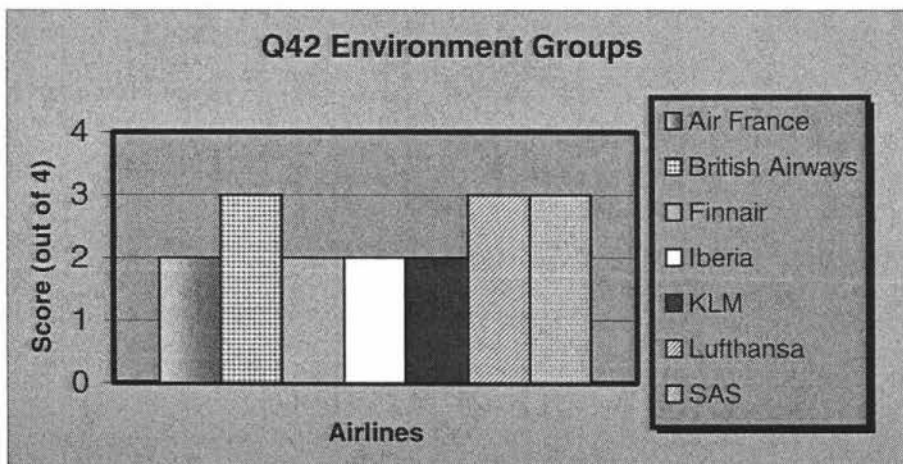
- All airlines have some sort of dialogue with their customers. Most have policies regarding openness and communication.
- BA conducts surveys with its customers. KLM and SAS are big on social responsibility.
- Airlines need to discuss this relationship in more detail including the challenges and priorities facing it.

Environmental Groups

Companies are now well versed in the idea of the need to turn environmental groups into valued company stakeholders. A CER should therefore disclose a company's involvement with any environmental group. The airlines as a group performed well on this question relating to the relationships with environmental groups. All airlines are working with some kind of environmental group, whether it is environmental industry groups, NGOs or environmental government agencies. All airlines seem to have relationships with ICAO and the UN and all are involved in various discussion forums regarding airline environmental impacts. The degree of involvement and discussion in the CERs is reflected in the scoring performance of the reporting airlines.

The higher scoring airlines are working with various regional or international NGOs, which is a major step for groups that often used to be on opposite sides of the fence. To score better marks the lower scoring airlines needed to provide more detail concerning challenges and priorities in the relationship. All airlines need to somehow benchmark their performance and discuss their relationship in a global and company-wide perspective.

Graph 57: Environmental Group Scores.



Major Themes and Findings

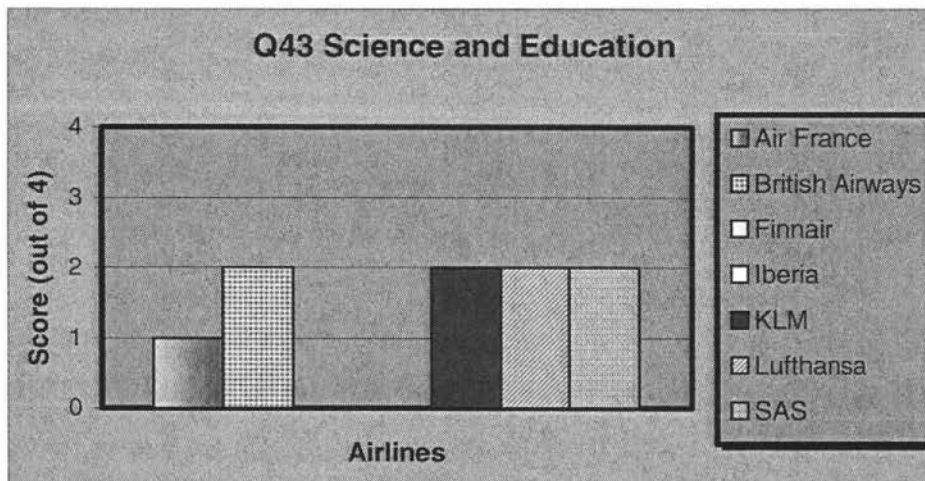
- All airlines are working with some kind of environmental group. All are working with industry environmental groups and international bodies like the UN, IATA and ICAO.
- The higher scoring airlines tend to be working with regional and international NGOs.
- To score higher marks more discussion is required; often the CERs are quite brief when discussing these issues.

Science and Education

Airlines are quite proactive in terms of research and development into such issues as reducing noise, emissions and waste, so it comes as little surprise that most of the CERs score in this section. The airlines that scored two points tend to provide more evidence relating to training, research and dialogue with these groups. Lufthansa, BA, SAS and KLM in particular discuss in detail its research and training activities, although the link with these stakeholder groups is often missing. The education and research is certainly there, the CERs need to develop more the discussions relating to science and education stakeholders.

To score good marks on this question the framework simply suggests airlines provide full information on interactive dialogue, covering all countries the airline works in, including the priorities and challenges the company is facing with these stakeholders.

Graph 58: Science and Education Scores.



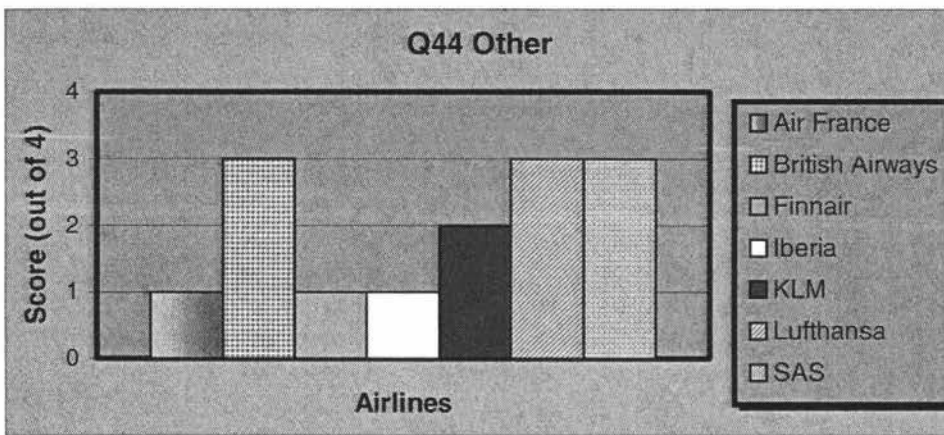
Major Themes and Findings

- KLM, SAS, Lufthansa and BA all have strong research and training relationships with these stakeholders. More discussion is required.
- To score better marks the CERs need to include benchmarking, challenges and priorities in the discussion.

Other

For the airlines, the “other” category refers to such stakeholders as alliance partners, research partners, industry groups and tourism and travel groups. BA has strong links with conservation and tourism groups and SAS indicates it is working with its “Star Alliance” partners on environmental issues. The high scoring airlines are all working with these groups including alliance partners. This indicates that environmental compatibility is importance for making these partnerships work. Airlines are obviously extending their “sphere of influence” to partner carriers. The lower scoring carriers do not provide enough detail in their CERs to score better marks in this section.

Graph 59: Other Scores.



Major Themes and Findings

- Airlines are working with alliance partners to ensure environmental compatibility within the partnerships.
- Several carriers, such as BA and Lufthansa, also work with tourism and conservation groups.
- Like most questions in this section, the commitment is there, however the details are not.

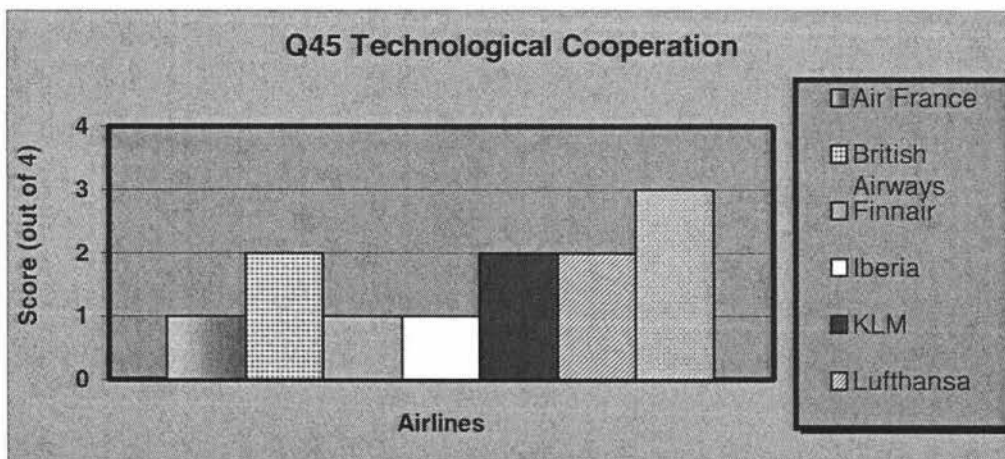
Sustainable Development

Technology Co-operation

The 1992 Earth Summit identified Technology Cooperation as an important step in promoting *sustainable development*. This is an essential area for successful CERs in the future, airlines should sharing technology and disclosing the information. All airlines are sharing technology, particularly with alliance partners. The airlines give some examples of where they are sharing technology, particularly with operational joint ventures such as airport expansion plans and research into environmental impacts. SAS discusses its projects in major detail within its CER; the other airlines do not share this detail.

Research projects tend to be the main area of technology cooperation with third parties such as scientists and industry groups. It is not a major issue in the CERs and needs to be developed more.

Graph 60: Technology Scores.



Major Themes and Findings

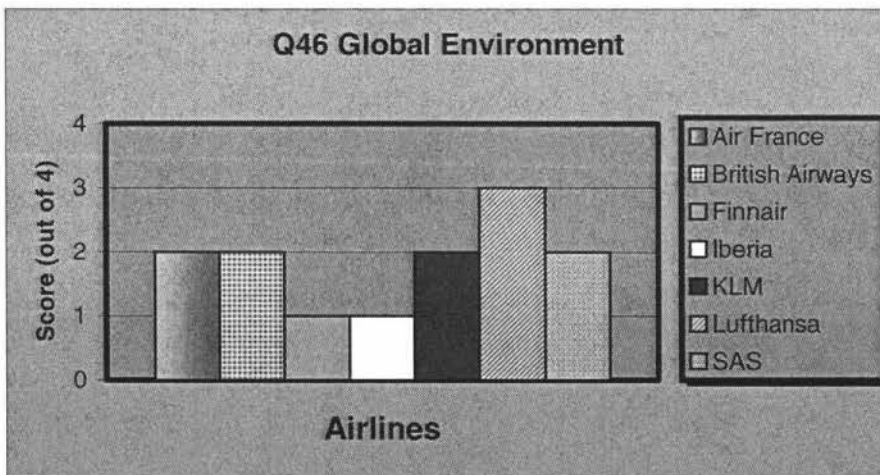
- All airlines share technology to some extent. The sharing mainly refers to joint ventures and research operations with third parties including alliance partners and industry groups.
- Airlines need to discuss this issue in greater depth.

Global Environment

Companies that have operations that affect the environment on a global scale should be making special mention of the fact in the CER. Airlines are an international business, and surprisingly all airlines show concern for the global environment. Many CERs link airline environmental impacts with the global issues, particularly aircraft emissions and the greenhouse effect. Lufthansa has many case studies within its CER linking its operations with global issues, including emissions and noise. While airlines are developing environmental indicators, this area is still in its infancy. Lufthansa, BA and SAS seem to be the leaders in this area.

While all airlines have scored in this section, there is plenty of room for improvement. Airlines need to publish a full range of global environmental indicators and link fully their operations with these issues. Current efforts are confined only to a few impacts. However, it is good to discover that all airlines are scoring in this field. To score the top marks, airlines have to benchmark themselves against industry and global standards. BA has benchmarked its complete environmental performance against the International Chamber of Commerce's (ICC) Charter for Sustainable Development, which is a good start. The airline had mixed results against this standard, similar to the findings of this Survey.

Graph 61: Global Environment Scores.



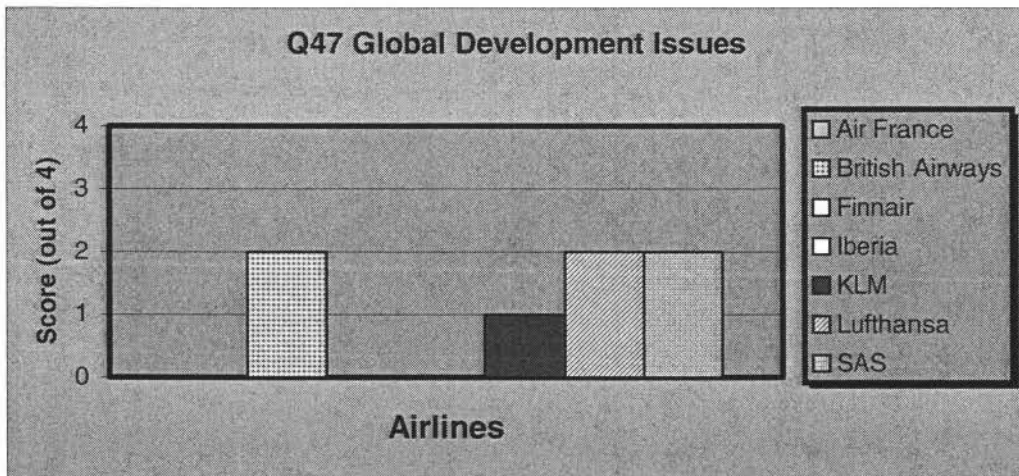
Major Themes and Findings

- All airlines have case studies placing their operational impacts into a global perspective.
- Lufthansa has very detailed discussions of research and global environmental issues.
- More work into benchmarking and global environmental indicators are required.

Global Development Issues

Issues such as population growth, resource requirements, respect for cultural diversity and promoting global health are all issues that come under the banner of global development. Few businesses have addressed these issues regarding their business and the effects it has on global development issues. Companies should be involved in global development projects, particularly on a local level where the companies operations have direct effects on the environment and local society. Only the high scoring cluster of airlines scored in this section, including BA, Lufthansa, KLM and SAS. Airlines need to show how they can contribute to the growing needs of the developing world. This issue is tough and the scores reflect this difficulty. BA in particular, through its Tourism and Conservation efforts has discussions relating to global development issues and environmental development. Like in the previous section, the airlines that scored well linked their operations and impacts to development issues. KLM and SAS in particular have reasonably strong social accountability sections, which were broadly relevant to this section. Overall, the CER content relating to this issue was not strong. Most information was scattered throughout the documents making it difficult to paint a complete picture of the airlines interests in global development issues.

Graph 62: Global Development Scores.



Major Themes and Findings

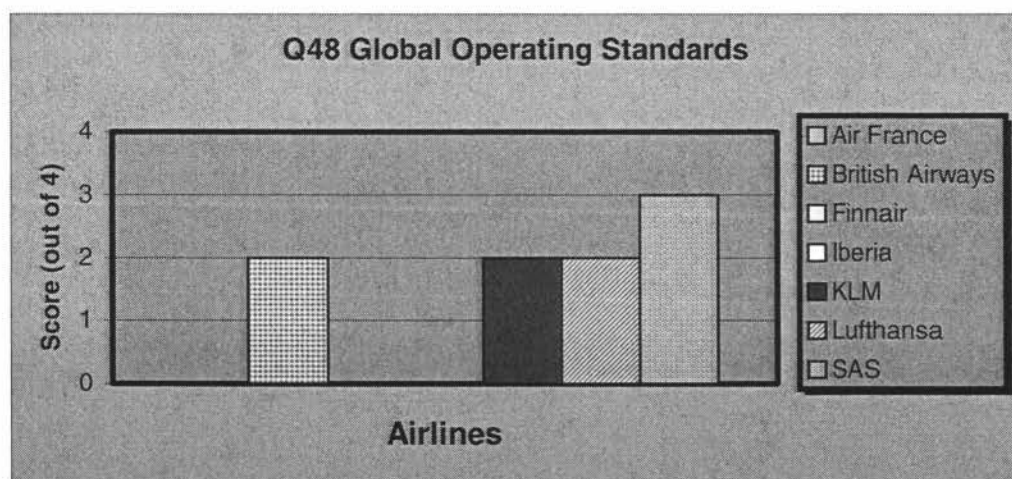
- Not a strong section, mainly suffering from unconsolidated discussions spread throughout the documents. Most of the airlines are concerned with global development and social accountability, but need to link their operations with these issues.
- BA had particularly strong links through its conservation and tourism initiatives to stimulate economic growth in poor countries while protecting the environment.

Global Operating Standards

Global businesses should have global environmental operating standards that do not change, regardless of the apparent weakness of some countries environmental laws and regulations. Many multi-nationals have adopted best practice global operating standards. CERs should indicate the adoption and development of such standards. KLM, SAS, BA and Lufthansa seem to be the only carriers that are consistently scoring in this section. Global Operating Standards is another tough issue for airlines and several of the carriers did not even register in this question. The scoring airlines are operating with global standards, often set through groups like ICAO and IATA. The reason why these airlines scored so well had to do with the airlines trying to achieve ISO 14001 certification in all or some of the airlines operations.

Major global standards had to do with emissions and noise levels, major global issues in themselves. To score higher marks more discussion is required and more commitment to global standards across all company operations is required. It seems that the presentation of the data does not reflect the quality of the airlines interest in sustainability issues. To score better marks the framework suggests that airlines discuss strategies for the future and benchmark their performance against these standards.

Graph 63: Global Operating Standard Scores.



Major Themes and Findings

- The scoring airlines have moved towards global operating standards particularly with noise and emission issues. Many of the carriers are working towards the global ISO 14001 standard to varying degrees.
- Industry groups such as IATA or ICAO often develop operating standards.

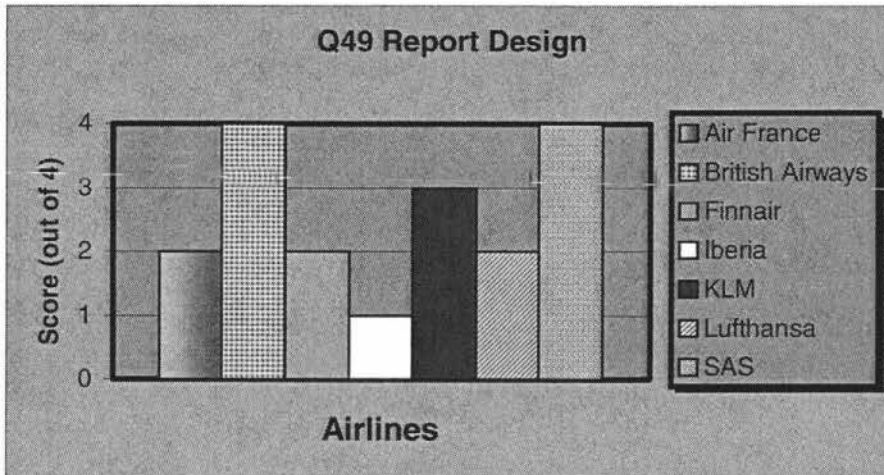
- Airlines need to communicate their involvement with global operating standards in more detail. The operating standards that airlines are adhering to are not generally company-wide; they mainly refer to selected issues such as noise and emissions.

Report Design

CERs should effectively communicate to the reader the organisation's environmental performance and work. CER design is therefore of utmost importance if it is to be achieved. Indicators of a good CER are easily understood graphs and discussions, use of colours and fonts, recycled paper and use of vegetable inks. The best report formats were from BA and SAS. The documents are very clear and concise and are set out in chapters relating to each environmental impact. The top scoring reports integrated goals and objectives into each section. SAS and BA in particular showed the progress on each goal over the period.

The SAS environmental balance sheets were the best way to depict and analyse environmental data. The Lufthansa report was difficult to read as each chapter was dedicated to different businesses within the Lufthansa Air Group rather than by environmental impacts like the other CERs. This probably relates to the sheer size of the Lufthansa Group and the difficulty the former format might pose for the airline. However, in-depth discussions could be reported across a company-wide context when the reports are separated by each individual environmental issue.

To score four marks the CERs needed to be "excellent" and available on the Internet, which included the report from SAS. All airlines had some environmental information on the net, varying from extracts to full copies of the environmental report. To score three points the reports had to have clear links to other forms of reporting. This included annual reports, other company publications, CD-ROMS etc. The reports that scored two points reported information clearly and in an understandable format. Only Iberia scored one point. The CER scores generally reflect the scope, quality and comprehensiveness of the reports.

Graph 64: Report Design Scores.

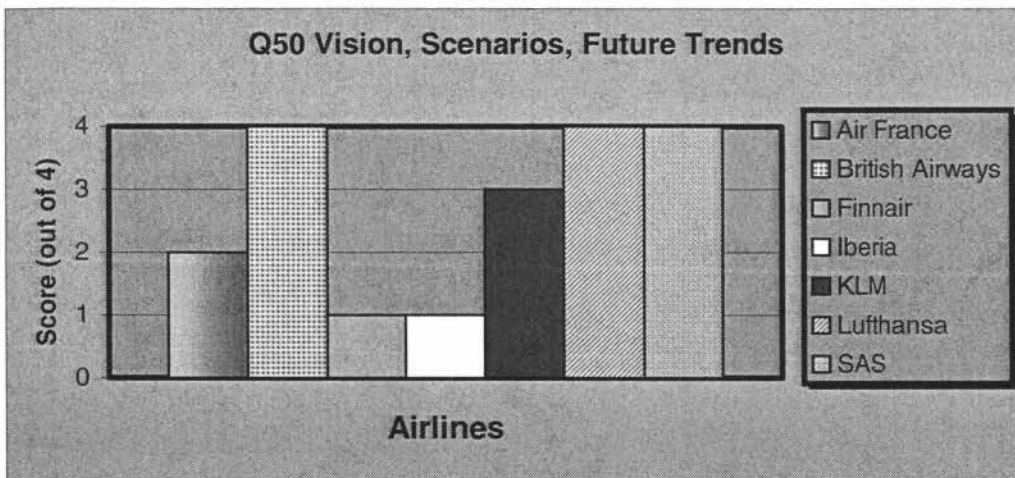
General Themes and Findings

- SAS and BA had the best reports because of their format, comprehensiveness and quality.
- The good reports integrated goals and policies with its discussions, often showing how much progress has been made on various objectives in previous and current periods of time.
- The SAS environmental balance sheets seem to be the best method of presenting and comparing environmental data.
- The Lufthansa format was difficult to extract information from, despite its comprehensive content.
- Most companies have environmental data (to varying levels) on the Internet or in other mediums or company publications.

Visions, Scenarios, Future Trends

Corporate strategy linked to *sustainable development* is an essential area in the framework. Companies must have visions of the future and be working towards them. Stakeholders want to share in this vision and it must be communicated to them via the CER. To score maximum points the airlines had to have detailed discussions relating to the future and linked them into corporate strategies. Lower scoring airlines discussed only a few issues linked to only selected business units. The main issues where airlines are developing strategies for future trends are noise and emission environmental impacts. All airlines are working very hard in these areas. Generally the airlines are all looking towards the future and planning with respect to scenarios they believe will develop. The fact that the airlines are develop CERs, when 90% of the airline industry are not, points to the foresight and vision these airlines have. While SAS is the only carrier that truly mentions *sustainable development* within its CER, all airlines are certainly on the same journey, some are simply more advanced than others are. The scores in this section (and indeed the scores from the whole Survey) may reflect the stage at which airlines are currently placed on the journey towards some sort of *sustainable development*.

Graph 65: Visions, Scenarios, and Future Trend Scores.



Major Themes and Findings

- All airlines have visions and scenarios for the future. The scores reflect the degree to which these are integrated into the airline's operations.
- Airlines that publish a CER display an obvious interest in the future.
- The higher scoring airlines have detailed discussions of the future and link them into the company's business plans of the future. The lower scorers did not do this as comprehensively.

11.7 Airline CER Critique Conclusions

The research question and objective relating to the critique of airline CERs (using the UNEP and SustainAbility framework) aimed to discover the trends developing in contemporary European airline CERs. These trends will show where airlines need to improve and where airlines are doing well. The overall goal of the framework is to develop sustainable companies; the critique will show how far away these airlines are from achieving this status. The research rationale was based around the idea that very little industry specific data was available. This research, by answering the base question and objective provides the information to fill this current gap in the airline industry.

The major findings of the CER critique are...

- Overall, the critique of the environmental reports from the seven European airlines revealed that, as a group, the airline CERs are amongst the best in the world. SAS, British Airways and KLM in particular, have CERs that are world benchmarks. While there was a definite split between the group into two clusters, industry and company comparisons showed that the airline CERs included some global leaders and none that matched the lowest international standards.
- The high scoring cluster includes SAS, BA, KLM and Lufthansa and the lower grouping included Finnair, Air France and Iberia. The low scorers suffer from a lack of detail, although the beginnings are there for very good CERs in the future. The high scorers did everything relatively well. While there were some areas that all airlines neglected as an industry, the high scorers generally had comprehensive CERs covering all operations in detail. The reason why the first cluster often missed the top marks was that they missed the link to *sustainable development* and the *triple bottom line*. To perform well under the UNEP/SustainAbility framework, companies must link their CERs with these issues. SAS scored the best marks because it is the only company that is really beginning to align itself with economic, environmental and social responsibilities and the issues surrounding *sustainable development*. Therein lies the challenge for all of the companies. Airlines must incorporate these issues into the business systems and CERs of the future.
- The lower scoring airlines must take heart from the fact that only around 10% of airlines are reporting, thus any effort beyond the norm is extra-ordinary. Generally, the lower scoring airlines are in the early stages of CER development. It would be interesting to analyse the lower scoring airline CERs with the earlier CERs from the more advanced and developed airlines. It could be argued that the scores would be similar. The point is that airlines must work together on a journey that has no end. Sustainability is a continuous process of self-improvement. Lower scorers should look to the high scoring CERs as benchmarks, but at the same time all airlines producing CERs should strive for innovative and remain forward moving. Higher scoring airlines must not step backwards, but must continue to move forward.

- It is difficult to be the first mover in *sustainable development* and in the publication of CERs. However, it is clear from all of the CERs that the airlines are committed to pro-active environmental and social (to a lesser extent) responsibility.
- Airlines are generally scoring with similar patterns indicating that the airlines are tackling easy issues first and not performing well on the harder issues. While this is a natural phenomenon, it is important that airlines work on the harder issues, which generally have to do with their core business of flying operations.
- Airlines scored very poorly in the Finance section of the UNEP/SustainAbility framework. There is a clear need for the integration of financial and environmental data within CERs. While there is some crossover of data, generally airlines are keeping company annual reports and environmental reports separate. The argument is that the *triple bottom line* of economic, social and environmental responsibility should be accounted for together. Not just in a report sense but in an organisational sense as well. Airlines need to work on internalising environmental and social costs as part of the economic bottom line. Environmental and social cost accounting methods need to be developed and discussed in CERs.
- A positive to come out of the research was that airlines are operating and *thinking* on a global scale. *Sustainable development*, while not often mentioned in the reports, scored well using the UNEP/SustainAbility framework. Aviation is a global business and its environmental effects have major global implications. This group of airlines has recognised this and their CERs depict a group of companies operating and thinking on a global scale. Airlines must continue working in this mindset with international bodies to reduce environmental impacts and to promote global developmental issues such as population growth, resource requirements and health requirements.
- A section where airlines scored poorly was “Stakeholder Relations”. Most of the airlines have strong policies committing them to communication with all stakeholders. However very little data is provided in the CERs to back this up. While most companies communicate and operate with the environment in mind when developing new projects, very little communication is reported with stakeholders on a day to day basis for normal operations. Stakeholders must have a voice that can be heard, not just for new projects like new terminal and runways, but for day to day issues as well.
- Airlines are doing particularly well with the collection of data for the Input/Output section in the UNEP framework. Reducing inputs and processes as well as reducing outputs means saving money for companies. Airlines need to continue to collect data and find new ways of keeping inventories of its input and outputs. The SAS environmental balance sheets should be the way all airlines present and analyse this data. They are clear, precise and disclose all the data without hiding anything. Airlines need to move towards Life-Cycle Analysis; the environmental balance sheets are a good tool to achieve LCA and present this information in a CER.

- Surprisingly, the Management Policies and Systems section did not score very well. Without systems, policies and objectives companies cannot expect successful results and improved environmental management. CERs are failing to integrate policies and goals with environmental issues and work. CERs must show how airlines are performing against past, present and future goals. SAS and BA are the best at this by disclosing in their CERs a table of environmental goals matched against company progress.
- Specifically, airlines are doing very well regarding eco-efficiency, waste management, noise, transportation, emissions, report design and future visions. The reason why airlines score so well is the in-depth analysis and disclosure of information regarding these issues. To score well a company must bare and disclose all within a CER. These issues are also the major problems and issues surrounding the industry, it is therefore unsurprising that the companies are spending more resources on them. Airlines have excellent data collection methods and are spending collectively large sums on developing data collection methodologies for such issues as noise, waste and emissions. Airlines maybe motivated to collect this data because of the fines and infringements forced upon carriers at several airports in Europe relating to waste, emissions and noise. Collecting input/output data empowers companies to reduce these figures by giving something for them to aim for.
- Specific areas that need work are company-wide Environmental Management Systems (EMS) and environmental auditing. Airlines need formal systems to assess the company and all of its operations. Current CERs depict most airlines only developing formal EMS for some of the company's operations. Formal certification systems such as ISO 14001 and EMAS must be adopted, not only by a few departments, but also by the whole organisation. Without systems and audits, companies cannot progress.
- Other issues where carriers are under performing are management accountability, Health and Safety, accidents and emergency response and Environmental Cost Accounting. CERs do not define accountability in the detail stakeholders require. SAS and BA have the best accountability sections and define to the person who is ultimately responsible for the company's environmental performance. Health and Safety, it would seem, is totally related to a company's environmental impacts and performance. If the company is harming the environment then it is also affecting stakeholder Health and Safety (including employees). However, CERs totally neglect this issue. Airlines undoubtedly have emergency plans and response actions. Airlines need to expand upon the risks facing stakeholders and the plans the airlines have at reducing this risk and containing an emergency. Current CERs lack any detail regarding this issue. Environmental Cost Accounting (ECA) relates to the finance issues already discussed in this section. Airlines are not accounting on the *triple bottom line*. Environmental costs are not internalised or accounted for in the company and its CER. While a developing accounting field, ECA is a trend of the future and

must be picked up by companies wanting to remain viable in the next century. Airlines must also develop ECA and publish the figures in a CER.

- A prominent issue revealed in the critique was the inadequacies for airlines and their CERs when scored using the *UNEP/SustainAbility 50 Reporting Ingredients*. Aviation-specific frameworks are required to assess airline CERs fairly. A bias towards the manufacturing sector has certainly reduced the score of the lower scoring CERs. With an aviation-specific framework (employing appropriate aviation-related indicators), it is the belief of the author that the scoring of many CERs would have been more favourable. Issues such as “packaging”, “transportation”, “product stewardship”, and “LCA” favour manufacturing company CERs. Having stated that, airlines must work with frameworks that are designed to improve CERs. There is a multitude of expertise and assistance in the CER field and airlines might want to tap into such help in the future.
- Airline CERs would be improved if the report was set out by environmental issue and not by each strategic business unit. Each environmental impact must be contained in a separate section and be discussed in a company wide context. It is difficult to read and gain a company-wide context with CERs that are divided by business unit rather than by environmental impact because
- Airlines must continue to progress with their EMSs and CERs. CERs must be an integral part of a company-wide EMS. CERs allow companies to document environmental performance and create benchmarks for future advancement on environmental initiatives. The foundations are certainly there for future success. The goal however must be *sustainable development*, an area that is currently neglected by most companies.

12. Final Conclusions

The research questions and objectives have resulted in two related pieces of research. Although they differ in methodology, the research projects are closely intertwined in their purpose and in their expected conclusions. The first methodology employed was a Survey of the Environmental Managers from the airlines already identified in the cluster of carriers that make up the *European Phenomenon*. The second part of the project was a critique of the Corporate Environmental Reports (CER) of these airlines, using the *UNEP/SustainAbility 50 Reporting Ingredients* as the framework. Conclusions have already been reported regarding each of these separate research projects. This discussion aims to link the outcomes from the Survey and the Report critiques with major insights from the literature review. The diagram on page 29 summarizes this process.

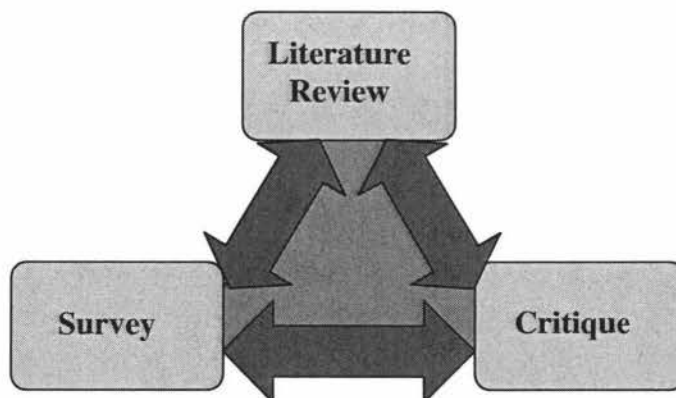
The areas of overlap between these three areas are likely to produce new insights into the process of company environmental reporting, and answers to some significant questions: What are the similarities between CER quality and the CER journey? Are there any barriers that are common to poorer CER performance? What unexpected results surface? Are there any new insights? While individual airlines cannot be revealed from the analysis of the Survey, such questions can be answered in an aggregate and generic context to discover general industry trends. The illustration below gives an overview of the conclusion process, incorporating the literature review, the Survey and the critique.

The aim of the research was: to discover and compare the trends developing in the European airline CERs and to document the environmental journey these airlines undergo during the development and publication of an environmental report. To achieve these goals, the following research questions had to be answered:

1. What are the European airlines reporting on and how do the CERs measure up against the UNEP/SustainAbility reporting framework?
2. What are the processes, issues, drivers and steps in the CER journey?

The Survey and the CER critique have successfully answered these questions and met the objectives of the research.

Illustration 2: An Overview of the Research Conclusion Process.



The major findings of the literature review, the Survey and the CER critique are summarised below.

Company Attributes for CER Publication

- The Survey found that the size of the airline has no bearing on its likelihood for publishing an environmental report.
- All of the participating airlines, no matter what their size, are able to publish a CER. The CER critique also showed that airline size has no bearing on CER quality. The top four CERs came from SAS, BA, KLM and Lufthansa. These airlines range from relatively small to extremely large.
- The lowest scorers were Air France, Finnair and Iberia. Again, these airlines range in size. CER quality is more likely to be related to the quality of human resources in the company (environmental expertise), company commitment and culture and time spent at publishing CERs.

CER Quality and Content Trends

- The Survey revealed that senior leadership from within the airline was an important *driver* for the success behind CER.
- The critique of the CERs discovered that airlines generally follow similar trends in terms of reporting content. This indicates that the airlines are tackling 'easy' issues first and not performing well on the harder issues. However, the Survey certainly pointed to a continuous cycle of self-improvement, which means that the harder issues are being tackled, albeit slowly.
- The airlines that used GRI, UNEP, or their own system also had high scoring CERs. The airlines using external aids (frameworks) definitely perform better when assessing their CERs under a framework such as UNEP/SustainAbility.
- The airlines that did not use a framework or a formal EMS had the lower scoring CERs. Without an external frame of reference, developing a CER is obviously much harder.
- There is a clear link between CER frameworks/EMS frameworks and CER quality and improved environmental performance. The Survey demonstrated that airlines found improved environmental benefits from the publication of a CER as well as improved and more focused EMSs.
- The Survey revealed that airlines have been publishing environmental information in their company annual reports since the 1980s. However, separate CERs are a 1990s

phenomenon. The critique of the airline CERs also found that the higher scorers had been publishing environmental reports for longer periods than the airlines that were new to the process.

- It would seem only natural that the longer a company spends at something the better the organisation would become at the task. CER is no exception to the rule.

Reporting Framework Problems

- The Survey and the CER critique both concluded that airlines need an aviation-specific framework from which to formulate and review future CERs. The critiques of the CERs revealed many instances where the UNEP/SustainAbility framework did not quite “fit” the airline industry’s reporting needs. This comment was also made by several of the survey respondents.
- Many of the CERs would score better marks under a service-based scoring system. The critique found that issues such as the distinction between inputs/processes and outputs to be different for service industries as opposed to traditional manufacturing based industries.
- Aviation is a global business and vital to the world’s economies. The literature review, the Survey and the critique have vividly illustrated the need for aviation-specific tools in the fields of CER and environmental/sustainability management. Aviation-related reporting tools which focus upon the specific reporting needs of airlines might also encourage non-reporting airlines to begin an *environmental journey* of their own.

Consumer, Stakeholder and Legislative “Drivers”

- From the Survey, it was discovered that consumers, customers and stakeholders have the most “power” in terms of influencing airlines to become more environmentally responsible.
- However, the CER critique found that the section relating to *Stakeholder Relationships* in the UNEP/SustainAbility framework had mixed results when benchmarked against the airline reports. Airlines state clearly the importance of stakeholder relations both in the Survey and within their environmental policies (found in the CERs). However, the actual stakeholder content in the reports was found to be lacking in detail and substance. This emphasis on stakeholder relations in the survey does not often measure up in the airline CERs.
- Despite the survey results and despite the communication policies in the CERs, on a day to day basis, stakeholders are generally left out of the “loop”. However, airlines

were good at including stakeholders in consultations relating to new or special development projects.

- The Survey found that the airlines are “driven” to publish reports by several factors, including consumer, stakeholder and NGO pressure and legislation. The CER content certainly confirms this to some extent. Airlines are quick to disclose their legal compliance activities and their stakeholder communication policies.
- Legislation ranked third in the Survey as a significant CER “driver”. This finding casts some doubt on arguments that compulsory CER legislation might reduce company innovation in this area. It is clear that environmental legislation in Europe has had the opposite effect. European CERs generally are the best in the world, as shown in CER critique. However, in the CERs, many airlines seem to begrudge many legislative efforts such as emission and noise taxes. Despite the negativity, the airlines are complying with legislation and their environmental performance is accordingly the best in the world.
- The airline CERs also scored well in regard to the legislation questions in the critique. The airlines are very orientated towards compliance and many carriers operating in Scandinavia also face compulsory CER legislation. It is clear from both research projects that airlines are responding well to tough environmental legislation, including compulsory CER regulations in some countries.
- The Survey participants did not see voluntary initiatives as effective CER drivers. The regard for the environment and the proactive policies introduced at a governmental and European Union (EU) level clearly influence the quality of the CERs and force companies to sharpen up their environmental performance.

Competitive Drivers

- The *European Phenomenon* may also be a result of competition. The Survey indicated that competition between existing rival airlines also forces companies improve their environmental performance. Many CERs compare the environmental performance of competing airlines with their own environmental record. Competition is certainly alive and well within the realm of Corporate Environmental Reporting. Both the Survey and the critique have discussed this idea of competition. The CER is certainly a competitive method used to achieve market differentiation.
- The CER critique and the literature review definitely show that the airline CERs are some of the best in the world. The literature also shows that Australasian CERs are well below the standards set in Europe. The competition amongst European carriers, spurred on by stakeholders that differentiate between carriers in terms of environmental and social performance, creates a continuous spiral of environmental improvements.

- Airlines in the Southern Hemisphere have the chance to capitalise on the experiences of the European airlines before environmental responsibility is forced upon carriers in Australasia and Asia. Carriers based in the Southern Hemisphere, but which operate in Europe, must be able to compete on all levels with the European airlines.
- To compete in markets where consumers and stakeholders differentiate carriers on their environmental and social performance they must also have environmental records that are just as good as the European carriers. This means publishing CERs and beginning the environmental journey.

Airline Alliances

- The Survey also discovered that airline alliance partners must be compatible, both culturally and physically. Alliances are a growing phenomenon. Airlines that are not in an alliance cannot retain any sort of competitive advantage against the carriers experiencing the *critical mass* and *economies of scale* advantages that airline partnerships can create.
- Compatibility between venture partners also refers to *environmental compatibility*. Airlines must share the same level of concern for the environment if an alliance is to work. For *synergies* to exist within the partnership, an alliance must be based on similar company beliefs and attitudes; this must include environmental management.
- Airlines are certainly working with and sharing environmental technology with partner airlines to ensure a harmonious and homogeneous alliance. The CER critique also found that some airlines are reporting this cooperation within their CERs.
- The importance of environmental compatibility amongst alliance partners has been clearly discussed in the Survey. This theme also emerges from the critique. Alliance cooperation falls under the general theme of Life Cycle Analysis (LCA). This means that environmental responsibility extends to the entire “sphere of influence” of the company. The CERs clearly show that airlines are working with many stakeholders, as LCA becomes a contemporary addition to the business of environmental management.

Internal “Drivers”

- The main internal drivers were staff and the Environment Department, followed closely by the Executive Management and the Board of Directors. This indicates the importance of staff involvement in any change of corporate culture. The content of the CERs confirms this survey finding. Airlines are heavily involved in team work and employee participation.

- There seems to be a link with high scoring CERs and internal staff relationships. Generally, the airlines that scored well were the ones who involved staff in every aspect of environmental management. From staff involvement in all levels of decision making to award systems for “green innovations”, the companies with good CERs and good EMS are the ones that have strong teamwork and staff involvement.
- The Environment Department is crucial to any change towards environmental responsibility. As a main *driver* of the CER process, they are the catalyst and the experts in the area.
- Shareholders were the next internal *driver* of the CER process, which is surprising because it was believed from readings in the literature review that shareholders played a bigger part in the process. However, this finding does coincide with the findings in the CER critique. Airlines did not provide adequate information within the CER for shareholders and investors. This indicates that CERs and company annual reports are still kept relatively separate.

The CER Benefits

- All airlines have experienced improved public relations since publishing a CER. However, only one airline found that it created any new marketing advantage and no airlines reported any increase in passenger numbers and revenues. As a marketing tool, all the CERs scored well under the design and layout question. The CERs are glossy and are good looking publications, many of which are available on CD-ROM or the Internet.
- Only 29% of airlines reported eco-efficiency gains after publishing a CER. However, it is proven in the critique, that in many cases EMSs do result in cost savings. The CERs were full of examples where the EMS had identified costs savings. There is a definite link between CER and a more effective EMS resulting in improved environmental performance. The CER critique shows that airlines are scoring reasonably well on the questions relating to Input/Output Inventory.
- The Input/Output Inventory section was one of the higher scoring sections in the CER critique. Airlines recognise that environmental performance can mean cost savings. By keeping inputs to a minimum, reducing waste and making the processes as efficient as possible airlines are saving money and improving their environmental performance.
- The airlines with formal EMSs scored the better marks. Their information was more comprehensive and detailed and their environmental programs far more convincing and generally more successful.
- Both of the research projects show that CER and EMS result in improved environmental performance whether it is monetary savings, better public relations or

a quality CER. No airline experienced any disadvantage from publishing a CER, contrary to the literature review findings.

- CERs are good for improving stakeholder relationships. It was found in the Marketing Section of the Survey that the majority of carriers market themselves as companies that care for the environment. The same airlines also use their CERs as marketing tools. Similar findings were discussed in the literature review.
- Consumers that are concerned for the environment should be able to choose airlines that are more environmentally and/or socially responsible than other carriers. Airlines differentiate themselves from other carriers on such variables as social and environmental responsibility. It is only fair that these differences are then marketed to stakeholders.

CER Barriers

- The Survey discovered that over 70% of carriers face a barrier of some kind. Unfortunately, the actual barrier is very airline or situation specific. There is no single barrier faced by the majority of airlines.
- Airlines in the Survey that stated they encountered any level of staff resistance to environmental reporting generally had the poorer scoring CER in the critique.
- Airlines that did not encounter any barriers and had the full support of internal and external stakeholders produced some of the best CERs in the critique.
- The top scorers in the CER critique indicated in the survey that the airline found that collection of data to be the greatest barrier. This result may indicate the extensive work the top performers are conducting on the collection and recording of data relating to the Input/Output Inventory of the company. Physical collection of such data is obviously difficult, but not impossible, for a business working on a global scale.
- The SAS environmental balance sheets should be the way all airlines present and analyse Input/Output data. They are clear, precise and disclose all the data without hiding anything. Airlines need to move towards Life-Cycle Analysis; the environmental balance sheets are a good tool to achieve LCA and present this information in a CER.
- The general journey between the first and most recent CERs tends to be a decrease in resource constraints as the value of the CER becomes apparent to management and accordingly, resources start to become available for the annual project. Value-adding projects tend to have no problems receiving funding. The best CERs certainly had the most funding and accordingly were the most comprehensive.

- Despite literature review findings to the contrary, no airline indicated in the Survey that they had trouble from external financial or legal sources. Concerns were communicated in the review of the literature regarding legal liabilities and precedents created from the disclosure of sensitive environmental data. Airlines have not seen this problem as an issue in any of their CERs. Airlines have disclosed sensitive environmental data within the CERs. The CER critique found that many airlines fully disclosed environmental emission data, liabilities, fines and prosecutions. This is not a major threat to airlines operating in this environment.

CER Scoring Patterns

- Generally, airlines scored very poorly in the Finance Section of the UNEP/SustainAbility framework. There is a clear need for the integration of financial and environmental data within CERs. While there is some crossover of data, generally airlines are keeping company annual reports and environmental reports separate. The Survey results indicated that the majority of carriers would not integrate financial figures with the environmental and social “bottom lines”. This confirms the critique’s findings.
- Current CERs lack any detail regarding this issue. Environmental Cost Accounting (ECA) relates to the finance issues already discussed in this section. Airlines are not accounting on the *triple bottom line*. Environmental costs are not internalised or accounted for in the company and its CER. Airlines must also develop ECA and publish the figures in a CER.
- Airlines are expanding the scope of their CERs. One airline is moving towards Life Cycle Analysis; others are increasing the detailed data and the range of the document. CERs are also moving to the web, if they are not there already, and all airlines are committed to progressing with their CERs, as part of their individual CER journeys. Several airlines are committed to external EMS certification.
- External auditing is also an integral part of this certification; some airlines are committed to third party verification. Several of the airlines involved in the research have already had their CERs verified by external auditors. However, the CER critique discovered that airlines are in the process of developing external auditing systems.
- It is clear from the Survey that despite the low performance in several areas of the critique, the airlines are committed to continuous improvement and will be working on the issues that require attention.

Being *green* means staying in the *black*, both on an economic, environmental and social bottom line. Being sustainable makes good economic sense, waste and unsustainable consumption are the enemies of business, this is clear. CERs are more than just a PR document; they are a working, living entity and are an integral part of a continuous cycle of self-improvement. CERs improve EMSs and environmental performance, improve

communication and encourage teamwork. The next step for business is not to isolate the CER as a separate entity but to integrate the CER and all it stands for into the day-to-day business of running an airline. CERs must be integrated into company annual reports and put into the context of accounting for the *triple bottom line*.

The airlines in the Survey represent the majority of airlines publishing reports. Their environmental reports are an indication and a reflection of their commitment to environmental issues and a general reflection of the class of their Environmental Management Systems. These are the first movers and the benchmarks for any airline entering the CER journey, a journey that must be heading the industry towards some form of sustainable aviation.

The research has achieved what it set out to do. It has reviewed the environmental reports of those airlines that are a part of the *European Phenomenon*. This has revealed current and future reporting trends and reporting shortcomings. The environmental Survey has documented the environmental journey the European airlines have experienced during the CER process. The barriers to CER have been identified, the drivers forcing companies to publish reports have been revealed. The advantages and disadvantages to CER have been discussed and the respondents have indicated future trends and company intentions. From this discussion, recommendations can be made for the airlines that took part in the research, for airlines that want to begin an environmental journey of their own and for future research directions and issues that require more research.

13. Recommendations

13.1 Recommendations for Airlines

- Non-reporting airlines should begin developing the systems needed to publish and disclose environmental data. Airlines that are not reporting on their environmental and social responsibilities should take note of the trends developing in Europe. Environmental performance will be a competitive advantage of the future in Australasia. As environmental issues become more obvious, airlines can expect calls from stakeholder groups for environmental disclosure and environmental responsibility.
- Airlines must be environmentally compatible with alliance members. Environmental and social compatibility could play a major role in the success of the alliance to capture organisational *synergies*. Alliances must continue to work together and improve the net environmental performance of the entire partnership.
- To operate effectively in the European market, a market that differentiates carriers on their transparency and environmental and social performance, airlines must improve their environmental image. Australasian airlines must begin an environmental journey of their own in order to compete effectively with the environmentally advanced carriers in the next century.
- An airline wanting an effective Environmental Management System and good a CER must also have a strong and effective Environment Department. Airlines considering following European trends should establish a unit with the power and authority to operate effectively on a company-wide basis. Start small and improve. Airlines all need to start somewhere. The airlines that are performing well in this research certainly did not start out the environmental journey with the same level of success.
- Airlines should be aiming towards achieving an external EMS standard. It is clear that a company-wide EMS results in the most effective improvements in environmental performance and improvements in CERs.
- Airlines should have their CERs externally verified to gain credibility.
- Airlines need to include stakeholders in all company operations. Dialogue should not stay relegated to special projects but to all of a company's operations.
- Airlines wanting to start an environmental journey of their own should measure their performance with the airlines that make up the European phenomenon. These airlines are industry and world leaders.

- Legislation is an effective method for “driving” the environmental performance of the airlines. In a New Zealand context, it would seem from the research that an active role from the government is required to force companies to improve their environmental performance.
- The New Zealand government should look at compulsory environmental reporting and should be pushing companies towards third party certified Environmental Management Systems. These are the keys to remain competitive internationally.
- Markets will close for New Zealand airlines that do not have comply with the environmental and social concerns of large markets, such as Europe and North America. New Zealand carriers must develop their own EMSs and CERs.
- Companies should not see environmental issues as a liability. They clearly provide companies with a competitive advantage.
- Low scoring airlines in the CER critique need to continue on their individual environmental journeys. Most of these airlines suffer from a lack of detail. *Sustainable development* requires full transparency, all airlines publishing CERs need to continue increasing the scope of their reports, which is a natural progression of the environmental management cycle.
- Most airlines neglect *sustainable development* in their CERs. As stated previously the airlines need to account on the *triple bottom line*. Sustainability cuts to the core business of the airline industry; air travel. Airlines that have effective strategic management systems will realize that sustainable aviation must be the end goal.
- In order to achieve sustainable aviation, airlines must integrate their environmental and social responsibilities into their economic accounting practices. This means developing ECA and LCA practices.
- The European airlines in the study should refer to all of the UNEP/SustainAbility questions where the industry scores were below 50%. These issues should be priorities for future environmental initiatives. There were many issues where the carriers did well. The European airlines must ensure that they do not move backwards on these questions. The performance levels achieved in the critique must form the benchmarks for the next year. Continuous and ambitious goals must be set.
- Airlines that do not currently publish CERs and who have less advanced Environmental Management Systems, will require human resources that are knowledgeable in these areas. It is clear from the research that human resources are the key behind the success of the *European Phenomenon*.
- Airlines wanting to establish an EMS and CER need to include the entire company in the process. The research indicates that environmental management and CERs are most successful when lead by the employees, closely supported unanimously by

Executive Management, the Board and the Environment Department. Employees must be apart of the solution; they must *own* the environmental performance of the company. Employees want a company they can be proud of. The environmental journey must be a team effort. Companies should utilise awards and incentives for staff participation and activity.

- Clear lines of environmental accountability and responsibility seem to be a key for successful environmental management. The environmental performance of the company is a concern of each employee; they must have the power to make changes they see on a day to day and on an operational basis. Companies must have clear lines of accountability and responsibility regarding environmental management.
- For non-reporting airlines, this research forms a good base and solid foundation into airline environmental management and general CER trends.
- Airlines should copy the SAS “Environmental Balance Sheet” approach to the Input/Output requirements of a CER.
- Airlines should expect to encounter barriers when developing CERs and EMSs. This is a normal part of any project in any organisation. The major barriers relate to the cost of the projects and the difficulty in establishing Environmental Management Systems and data collection. This research illustrates what airlines can expect.
- Airlines need guidance on these matters from aviation industry groups like ICAO, IATA and the AEF. These organisations need to research the trends developing amongst their own members.

The airlines in this study are the majority of airlines publishing reports. Their environmental reports are an indication and a reflection of their commitment to environmental issues and a general reflection of the class of their Environmental Management Systems. These are the first movers and the benchmarks for any airline entering the CER journey, a journey that must be heading the industry towards some form of sustainable aviation.

13.2 Recommendations for Further Research

- Airlines require aviation-specific EMS and CER tools. This area requires more research. Aviation-related sustainability indicators are required to cater for the unique characteristics of the airline industry and its environmental impacts and issues.
- Research into airline CERs needs to be ongoing. The CERs from these companies need to be critiqued on an annual basis. The GRI should be available in the year 2000 for use on a project of this nature. The GRI should be assessed for its viability as a CER/sustainability tool for the aviation sector.
- Airlines need to focus on the *triple bottom line* and the issues surrounding sustainability. External costs such as pollution need to be internalised. Environmental Cost Accounting and Life Cycle Analysis tools need to be developed and researched for the airline industry. Further research into these issues is required.

14. References

1. Azzone, G. Brophy, M. Noci, G. Welford, R. Young, W. (1997). *A Stakeholders View of Environmental Reporting*. Long Range Planning. 30(5): 699-709. Oct.
2. Azzone, G. Manzini, R. G, Noci. (1996). *Evolutionary Trends in environmental Reporting*. Business Strategy and the Environment. Vol. 5, 219-230.
3. Bullough, M. (1995). *Corporate Environmental Reporting in Practice*. Business Strategy and the Environment. Vol. 4, 36-39.
4. CERES. (1999). *Environmental Reporting*. Website. <http://www.ceres.org/reporting>
5. CICA (1994). *Reporting on Environmental Performance*. Ontario: The Canadian Institute of Chartered Accountants.
6. Cooper, D. Schindler, P. (1998). *Business Research Methods (6th Ed.)*. Boston: Irwin McGraw-Hill.
7. Deloitte Touche Tohmatsu (1993). *Coming Clean. Corporate Environmental Reporting*. London: Deloitte Touche Tohmatsu.
8. Environment97. (1997). *Environmental reporting. A Vital Corporate Communications Tool or an Unnecessary Business Risk?* Website. <http://www.environment97.org/text/reception/r/techpapers/g55.htm>
9. Hawken, P. (1994). *The Ecology of Commerce: How Business can save the Planet*. London: Earthscan.
10. Johnson, Tim. (1999). Member of the Aviation Environment Federation (AEF). Personal Correspondence; 15th April.
11. KPMG (1997). *KPMG International Survey of Environmental Reporting 1996*. Stockholm, KPMG.
12. KPMG (1998). *Corporate Environmental Reporting*. Auckland, KPMG
13. Line, M. Woodhead, J. (1999). *Global Reporting Initiative Draft Guidelines and their Application in Corporate Reporting*. Shrewsbury; Enviro Aspenwall.
14. Lober, D. Bynum, D. Campbell. Jacques, M. (1997). *The 100 Plus Corporate Environmental Report Study: A Survey of an Evolving Environmental Management Tool*. Business Strategy and the Environment. Vol. 6, 57-73.
15. Rikhardson, P. Ulhoi, J. (1996). *Environmental Reporting in Denmark*. Eco-Management and Auditing. Vol. 3, 63-68.
16. Snowy Mountain Engineering Corporation. (1999). *Public Environmental Reporting: Where does Australia Stand?* Hartwell: SMEC.
17. SustainAbility, United Nations Environment Programme. (1996). *Engaging Stakeholders: The Benchmark Survey. The Second International Progress Report on Company Environmental Reporting*.
18. SustainAbility, United Nations Environment Programme. (1997). *Engaging Stakeholders: The Benchmark Survey. The Third International Progress Report on Company Environmental Reporting*.
19. The International Corporate Environmental Reporting Website. Website <http://www.enviroreporting.com>
20. United nations Environment Programme. (1994). *Technical Report No. 24. Company Environmental Reporting*. New York, UNEP.

21. Welford, R (1995). *Environmental Strategy and Sustainable Development: The Corporate Challenge of the 21st Century*. London: Routledge.
22. White, A. Zinkl, D. (1997). *Green Metrics: A Status Report on Standardised Corporate Environmental Reporting: A Working Paper*. Boston: CERES.
23. World Business Council for Sustainable Development. (1998a). *Environmental Assessment: A Business Perspective*. Geneva, WBCSD
24. World Business Council for Sustainable Development. (1998b). *Environmental Performance and Shareholder Value*. Geneva, WBCSD.

15. Glossary of Terms

1. AEF: Aviation Environment Federation; based in the UK
2. BA: British Airways
3. CEFIC: European Chemical Industry Council
4. CER: Corporate/Company Environmental Reporting
5. CERES: Coalition for Environmentally Responsible Economies
6. CICA: Canadian Institute of Chartered Accountants
7. ECA: Environmental Cost Accounting
8. ECAC: European Civil Aviation Conference
9. EIA: Environmental Impact Assessment
10. EMS: Environmental Management System
11. EU: European Union
12. GEMI: Global Environmental Management Initiative
13. GRI: Global Reporting Initiative
14. IATA: International Air Transport Association
15. ICAO: International Civil Aviation Organisation
16. IISD: International Institute for Sustainable Development
17. ISO 14001: An EMS from the International Organisation for Standardization
18. KPMG: One of the "Big 5" accounting firms, strongly involved in CER.
19. KLM: KLM Royal Dutch Airlines
20. LCA: Life Cycle Analysis
21. MNC: Multi National Corporation
22. PERI: Public Environmental Reporting Initiative
23. SAS: Scandinavian Airline Systems
24. SMEC: Snowy Mountains Environment Consultancy
25. SustainAbility: An Environmental Consultancy
26. The Triple Bottom Line: Economic, Environmental and Social "Bottom Lines"
27. WBSCD: The World Business Council for Sustainable Development
28. WICE: World Industry Council for the Environment
29. UNEP: United Nations Environment Programme

16. Appendices

16.1 Appendix A: Correspondence

Initial Contact E-Mail....

Environmental Manager
European Airline

RE: Airline Corporate Environmental Reporting

Hello from New Zealand!

I am a Masters student from Massey University in NZ and I am researching airline environmental reporting. Could you please send me a copy of your latest environmental report and place my contact details on your mailing list.

Kindest regards,

Benjamin Day
PO Box 8428
Havelock North
NEW ZEALAND

After Much Correspondence with the Managers, this E-Mail was Sent...

Dear _____

Thank you for sending me your environmental report. When the CER critique is completed, I will send you a copy of the final report. As part of my research, I am also conducting a survey amongst the environmental managers from several European airlines regarding airline CERs. All respondents will remain anonymous and will receive a copy of the final report. If you are interested, please contact me.

Thank you for your time.

Regards,

Benjamin Day
PO Box 8428
Havelock North
NEW ZEALAND
ben.d@clear.net.nz

16.2 Appendix B: The Survey Covering Letter

27th September 1999

Benjamin Day
PO Box 8428
Havelock North
NEW ZEALAND

Fax: + 64 6 8770582
Email: ben.d@clear.net.nz

Dear _____

Please find enclosed the airline environmental reporting survey, complete with a self addressed envelope and international postage.

First of all, I would like to thank you for agreeing to participate in my small research project. It is refreshing to get such a positive and helpful response, as unfortunately I have not had the same treatment from companies on this side of the globe. I feel your support is a reflection of your company's regard for its stakeholders, something that is severely lacking in the southern hemisphere.

For some background, I started this year with three research questions and objectives. Firstly, I am analyzing airline environmental reports using the UNEP/SustainAbility 50 Reporting Ingredients. This document will be finished by November and will be sent to you soon thereafter. This document has generally been using 1997/1998 reports. At the time of writing this letter many airlines have already published 1999 company environmental reports (CERs), so I intend on updating this document, which will be finished and sent to you by the end of the year.

Secondly I have decided to develop an airline specific CER guideline/framework and scoring system as I don't believe the UNEP/SustainAbility guide is appropriate for service industries let alone airlines. Frankly, airline CERs get a rough deal in several areas of the SustainAbility reporting system. Therefore, I intend to finish this framework and will critique airline CERs in a separate document. If you would like a copy, please contact me. It will not be ready until early next year.

Finally, the survey has been developed as a part of my overall research. It is a general look at airline environmental reporting and includes questions relating to several different constructs and themes. Please be reassured that every response is confidential and no airline or participant specific material will be divulged or included in the survey report. The survey does not ask respondents to disclose any personal or company specific material. When the project is complete, I will send you a copy. A self addresses envelope and international stamp voucher is provided for your convenience or you can fax the completed survey using the fax number given above.

Thank you again and I look forward to your response.

Yours sincerely,

16.3 Appendix C: Airline Environmental Reporting Survey

Instructions:

- Please read the instructions and work through each question in sequence.
- Please use a pen.
- It would be appreciated if you could give some comments about your answers in the spaces provided.
- Thank you for your time and input in to this project.

Section One: Airline Information

Please tick the appropriate box.

1. How many aircraft does your airline operate?

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> Less than 50 | <input type="checkbox"/> 201-250 |
| <input type="checkbox"/> 50-100 | <input type="checkbox"/> 251-300 |
| <input type="checkbox"/> 101-150 | <input type="checkbox"/> More than 300 |
| <input type="checkbox"/> 151-200 | |

2. How many people does your airline employ worldwide?

- | | |
|--|--|
| <input type="checkbox"/> Less than 15000 | <input type="checkbox"/> 35001 - 40000 |
| <input type="checkbox"/> 15001 - 20000 | <input type="checkbox"/> 45001 - 50000 |
| <input type="checkbox"/> 20001 - 25000 | <input type="checkbox"/> 50001 - 55000 |
| <input type="checkbox"/> 25001 - 30000 | <input type="checkbox"/> More than 55000 |
| <input type="checkbox"/> 30001 - 35000 | |

Section Two: Company Environmental Reporting (CER)

3. When did your airline publish its first environmental report?

- | | |
|--------------------------------------|-------------------------------|
| <input type="checkbox"/> Before 1990 | <input type="checkbox"/> 1994 |
| <input type="checkbox"/> 1990 | <input type="checkbox"/> 1995 |
| <input type="checkbox"/> 1991 | <input type="checkbox"/> 1996 |
| <input type="checkbox"/> 1992 | <input type="checkbox"/> 1997 |
| <input type="checkbox"/> 1993 | <input type="checkbox"/> 1998 |

4. Did your airline refer to any external “reporting recipe” or reporting framework during the development of its CER(s)?

- Yes (Proceed to question 5) No (Go to question 6)

5. To what reporting framework(s) did your airline refer?

Please tick the appropriate box(es).

- UNEP and SustainAbility 50 Reporting Ingredients
- GRI (Global Reporting Initiative)
- GEMI (Global Environmental Management Initiative)
- PERI (Public Environmental Reporting Initiative)
- Other (Please explain)

Please add any comments regarding the reporting frameworks used in the development of your airlines CER(s):

Section Three: CER “Drivers”

6. What were the external factors that encouraged your airline to publish an environmental report?

Please rank the following on importance from 1-9; 1 being the most important, 9 the least important.

- | | |
|---|--|
| <input type="checkbox"/> Government legislation | <input type="checkbox"/> Airline alliance pressure |
| <input type="checkbox"/> Voluntary government initiatives | <input type="checkbox"/> General stakeholder pressures |
| <input type="checkbox"/> Competition from airlines | <input type="checkbox"/> Supplier/industry pressures |
| <input type="checkbox"/> Consumer/Customer pressure | <input type="checkbox"/> Other factors (comment below) |
| <input type="checkbox"/> NGO pressure | |

Please add any comments regarding the external factors that encouraged your airline to publish an environmental report:

7. What were the internal factors that encouraged your airline to publish an environmental report?

Please rank the following on importance from 1-6; 1 being the most important, 6 the least important.

- | | |
|---|---|
| <input type="checkbox"/> The Board of Directors | <input type="checkbox"/> The Environment Department |
| <input type="checkbox"/> Executive Management | <input type="checkbox"/> Shareholder pressure |
| <input type="checkbox"/> General staff pressure | <input type="checkbox"/> Other factors (please comment) |

Please add any comments regarding the internal factors that encouraged your airline to publish an environmental report:

Section Four: CER Outcomes

8. What are the benefits your airline has experienced from publishing an environmental report?

Please tick the most relevant box(es).

- | | |
|---|--|
| <input type="checkbox"/> A more effective and co-ordinated Environmental Management System (EMS). | <input type="checkbox"/> New operational competitive advantages. |
| <input type="checkbox"/> Eco-efficiency gains resulting in cost savings | <input type="checkbox"/> A change in company culture |
| <input type="checkbox"/> Better public relations | <input type="checkbox"/> Better environmental performance and accountability |
| <input type="checkbox"/> New marketing competitive advantages. | <input type="checkbox"/> Increases in revenues |
| | <input type="checkbox"/> Increases in passenger numbers. |

Please add any comments regarding the benefits your airline has experienced from the publication of CERs:

9. Has the company experienced any disadvantages from publishing CERs?

Please tick the most relevant box(es).

- | | |
|--|---|
| <input type="checkbox"/> Negative sentiments from NGOs | <input type="checkbox"/> High expense |
| <input type="checkbox"/> Bad publicity | <input type="checkbox"/> Other (please comment) |
| <input type="checkbox"/> Creation of legal liabilities | |

Please add any comments regarding the disadvantages your airline has experienced from the publication of CERs:

Section Five: Decision Making and Leadership

10. Regarding the company's first environmental report, where did the leadership and momentum for the publication of the CER come from?

Please tick the most relevant box(es).

- | | |
|---|---|
| <input type="checkbox"/> The Board of Directors | <input type="checkbox"/> General Staff |
| <input type="checkbox"/> Executive Management | <input type="checkbox"/> External Stakeholders (Please explain below) |
| <input type="checkbox"/> Line Management | <input type="checkbox"/> Other (Please comment below) |
| <input type="checkbox"/> Environment Department | |

Please add any comments regarding the leadership and momentum behind the airlines first environmental report:

11. Regarding the company's most recent environmental report, where did the leadership and momentum for the publication of the CER come from?

Please tick the most relevant box(es).

- | | |
|---|---|
| <input type="checkbox"/> The Board of Directors | <input type="checkbox"/> General Staff |
| <input type="checkbox"/> Executive Management | <input type="checkbox"/> External Stakeholders (Please explain below) |
| <input type="checkbox"/> Line Management | <input type="checkbox"/> Other (Please comment below) |
| <input type="checkbox"/> Environment Department | |

Please add any comments regarding the leadership and momentum behind the airlines current environmental report:

Section Six: CERs and Airline Alliances

12. Is it important that airline alliance partners share the same level of concern for the environment?

- Yes No

Why? Please explain your answer below:

13. Is your airline working with or sharing environmental technology and knowledge with its alliance partner(s)?

- Yes (Proceed to question 14) No (Go to question 15)

14. How is your airline working with its alliance partners?

Please tick any relevant box(es).

- Sharing technology
 Joint projects/research
 Sharing expertise and knowledge
 Formed/forming a joint working group/committee
 Sharing human resources
 Other (Please comment below)

Please add any comments regarding your airlines environmental co-operation with its alliance partner(s):

Section Seven: Marketing and CER

15. Does your airline market itself as a company that cares for the environment?

- Yes No

16. Is your airline's CER used as a marketing tool?

- Yes No

Section Eight: Barriers to Corporate Environmental Reporting

17. What were the barriers your airline experienced when developing its first CER?

Please tick any relevant box(es).

- | | |
|---|--|
| <input type="checkbox"/> Internal staff resistance | <input type="checkbox"/> External stakeholder criticism |
| <input type="checkbox"/> Finance/legal sector resistance or disapproval | <input type="checkbox"/> Difficulty in measuring and recording CER content |
| <input type="checkbox"/> High monetary costs | <input type="checkbox"/> Report format difficulties |
| <input type="checkbox"/> NGO criticism | <input type="checkbox"/> Other (Please comment) |

Please add any comments regarding the barriers your airline faced during the publication of the first CER:

18. Have the barriers identified in question 17 changed since the publication of the first CER?

- Yes (Proceed to question 19) No (Go to question 20)

19. What were the barriers your airline experienced developing its most recent CER?

Please tick any relevant box(es).

- | | |
|---|--|
| <input type="checkbox"/> Internal staff resistance | <input type="checkbox"/> External stakeholder criticism |
| <input type="checkbox"/> Finance/legal sector resistance or disapproval | <input type="checkbox"/> Difficulty in measuring and recording CER content |
| <input type="checkbox"/> High monetary costs | <input type="checkbox"/> Report format difficulties |
| <input type="checkbox"/> NGO criticism | <input type="checkbox"/> Other (Please comment) |

Please add any comments regarding the barriers your airline experienced during the publication of the most recent CER:

Section Nine: The Future

20. Will your airline continue publishing CERs?

- | | |
|---------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> Unsure | |

21. In the future, does your airline intend to fully integrate its CER into financial company annual reports?

- | | |
|---------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> Unsure | |

Please explain your answer:

16.4 Appendix D: Aggregate Survey Results

Questions 1 and 2

Airline	Number of A/C	Global Employees
Company A	251-300	Greater than 55000
Company B	101-150	25001-30000
Company C	<50	<15000
Company D	50-100	<15000
Company E	151-200	25001-30000
Company F	50-100	<15000
Company G	101-150	20001-25000

Question 4

	Yes	No
Company A	x	
Company B	x	
Company C		x
Company D		x
Company E	x	
Company F	x	
Company G		x

Question 3 and 5

Airline	Year of First Report	External Frameworks Used
Company A	1991	UNEP/SustianAbility and GRI
Company B	1997	ISO 14001
Company C	1990	No External Framework Used
Company D	1998	No External Framework Used
Company E	1996	Internal Framework
Company F	1991 (data 1985)	ISO 14001 and EMAS
Company G	1994	No External Framework Used

Question 6

Ranking	External CER "Drivers"
1	Consumer and Customer Pressures
2	General Stakeholder Pressures
3	Legislation
4	Competition from Airlines
5	NGO Pressure
6=	Airline Alliances
6=	Supplier Pressures
8	Voluntary Governmental Initiatives
9	Other Factors: The Media/Scientific

Question 7

Ranking	Internal CER "Drivers"
1=	Staff Pressure/ Environment Dept
3=	Board of Directors/Executive Mgmt
5	Shareholder Pressure
6	Other: Marketing Department

Question 8

Benefits	Responses	Percentage of Airlines
A more effective and coordinated EMS	4	57%
Eco-efficiency gains/cost savings	2	29%
Better public relations	7	100%
New marketing competitive advantages	1	14%
New operating competitive advantages	0	0%
A change in company culture	4	57%
Better env. performance & accountability	5	71%
Increases in revenues	0	0%
Increases in passenger numbers	0	0%

Question 9

All Answered Negatively

Question 10 and 11

The Leaders and Decision Makers	First CER (%)	Latest CER (%)
The Board of Directors	14%	43%
Executive Management	29%	57%
Line Management	0%	0%
Environment Department	86%	86%
General Staff	14%	29%
External Stakeholder Groups	0%	29%
Other: Public Information Department	14%	14%

Question 12

	Yes	No
Company A	x	
Company B		x
Company C	x	
Company D	x	
Company E	x	
Company F	x	
Company G	x	

Question 13

	Yes	No
Company A	x	
Company B		x
Company C	x	
Company D	x	
Company E	x	
Company F	x	
Company G	x	

Question 14

Shared Item	Airline Responses (%)
Sharing technology	33%
Joint research and/or projects	16%
Sharing expertise and knowledge	83%
Formed a joint working group/committee	50%
Sharing human resources	0%

Question 15

	Yes	No
Company A		X
Company B	X	
Company C	X	
Company D	X	
Company E		X
Company F	X	
Company G	X	

Question 16

	Yes	No
Company A		X
Company B	X	
Company C	X	
Company D	X	
Company E		X
Company F	X	
Company G	X	

Question 17

Barriers	Responses (%)
Internal staff resistance	14%
Finance/legal sector resistance	0%
Monetary costs	43%
NGO criticism	0%
External stakeholder criticism	0%
Difficulty in recording data	29%
Report format difficulties	0%
Other	0%

Question 18

	Yes	No
Company A	X	
Company B	X	
Company C		X
Company D	X	
Company E	X	
Company F	X	
Company G	X	

Question 19

The Barriers	Responses (%)
Internal staff resistance	14%
Finance/legal sector resistance	0%
Monetary costs/limited resources	14%
NGO Criticism	0%
External Stakeholder Criticism	0%
Difficulty in measuring CER content	43%
Report Format Difficulties	0%
Other	29%

Question 21

	Yes	No	Unsure
Company A	X		
Company B	X		
Company C	X		
Company D	X		
Company E	X		
Company F	X		
Company G	X		

Question 21

	Yes	No	Unsure
Company A		X	
Company B		X	
Company C		X	
Company D			X
Company E			X
Company F	X		
Company G	X		

16.5 Appendix E: The UNEP/SustainAbility 50 Reporting Ingredients

The 50 Reporting Ingredients	Indicators Within the CER
Management Policies and Systems	
<i>1. Top Management Statements</i>	Strategic direction, inspiration, shortcomings, personal objectives
<i>2. Environmental Policy</i>	Measurable environmental objectives, policy incorporated into plans
<i>3. Environmental Management System</i>	Clear decision making process, verification, external certification
<i>4. Management Responsibility</i>	Names, addresses, description of responsibilities, contact details
<i>5. Environmental Auditing</i>	Audit scope, effectiveness of audit in identifying poor performance
<i>6. Goals and Targets</i>	Specific, measurable, attainable, relevant and Trackable, new targets
<i>7. Legal Compliance</i>	Percentage compliance, reported incidents and prosecutions
<i>8. R&D</i>	Strong R&D policy life cycle design, numbers, costs, research partners
<i>9. Awards</i>	Internal and or external awards
<i>10. Verification</i>	Third party verification, challenging statement, recommendations
<i>11. Reporting Policy</i>	Areas of coverage, frequency, link to UNEP, PERI, GRI
<i>12. Corporate Context</i>	Company size, locations, employees, major lines of business, impacts
Input/Output Inventory	
<i>13. Material Use</i>	Use of non-renewable and renewable resources, recycling, substitution
<i>14. Energy Consumption</i>	Energy use, kilowatt hrs, efficiency measures, contin, improvements
<i>15. Water Consumption</i>	Water uses, efficiency measures, continuous improvement systems
<i>16. Eco-efficiency/Clean Technology</i>	Strategy, targets and case studies
<i>17. Health & Safety</i>	Health and Safety risks, lost time injuries, risk reduction systems
<i>18. Accidents and Emergency Response</i>	Risk potential, number and type of accidents, emergency plans
<i>19. Risk Management & EIAs</i>	Risk and impact assessment, description of EIAs, local coordination
<i>20. Land Contamination and Remediation</i>	Assessment of long term clean ups and liabilities, number and scale
<i>21. Stewardship of and Eco-Systems</i>	Id of potential impacts, areas protected, damage prevention
<i>22. Waste Minimisation and Management</i>	Id of waste risks, hazards. Tons per year, recycling reuse and sub etc
<i>23. Air Emissions</i>	Id emissions, tones per year, impacts, minimisation goals and systems
<i>24. Water Effluents</i>	Id effluents, tons per year, impacts, minimisation goals and systems
<i>25. Noise and Odours</i>	Number of complaints, noise measurement, progress towards goals
<i>26. Transportation</i>	Id of transport related impacts, discussion of fuel choices,
<i>27. Life-Cycle Design</i>	Number of LCAs, waste prevention, energy use
<i>28. Environmental Impacts</i>	Disc. of impact accounting methods emissions for substances used
<i>29. Product Stewardship</i>	Product stewardship programmes, closed loop processes, zero waste
<i>30. Packaging</i>	Tons used, LCAs, recycling, take-back, material substitution

Finance	
31. <i>Environmental Spending</i>	Operating costs, savings, current and future projections, research
32. <i>Environmental Liabilities</i>	Net value of liabilities, processes and products, id of liabilities
33. <i>Market Solutions, Opportunities</i>	Taxes and charges, financial benefits from environmental investments
34. <i>Environmental Cost Accounting</i>	calculation and allocation of environmental costs
35. <i>Charitable Contributions</i>	Amounts and recipients of donations
Stakeholder Relations and Partnerships	
36. <i>Employees</i>	Numbers trained, feedback opportunities, dialogue, incentives
37. <i>Politicians and Regulators</i>	Discussion of relationship with government, participation in initiatives
38. <i>Local Communities</i>	Details of dialogue, advisory panels, employee community actions
39. <i>Investors</i>	Cross linking environmental data with company annual reports
40. <i>Suppliers and Contractors</i>	Information dissemination, opportunities for dialogue
41. <i>Customers and Consumers</i>	Information dissemination, opportunities for dialogue
42. <i>Environmental Groups</i>	Information dissemination, opportunities for dialogue
43. <i>Science and Education</i>	Information dissemination, opportunities for dialogue, student training
44. <i>Other</i>	Information of dialogue with other stakeholders
Sustainable Development	
45. <i>Technology Co-operation</i>	Types and amounts of technology, joint ventures, cooperation
46. <i>Global Environment</i>	Linking of company's activities to key global environmental issues
47. <i>Global Development Issues</i>	Linking of company's activities to key global development issues
48. <i>Global Operating Standards</i>	Global data provision, commitment to these standards,
49. <i>Report Design</i>	Easy to read, format, CD ROM, internet, recycled paper
50. <i>Visions, Scenarios, Future Trends</i>	Discussion of the future, linked to <i>sustainable development</i>

16.6 Appendix F: The Critique Results

Total Scores for the CER Critique

Table 23: Total Scores

	Air France	BA	Finnair	Iberia	KLM	Lufthansa	SAS	Average
Total Score	46	116	51	38	104	94	134	83
Percentage	24%	60%	26%	20%	54%	48%	69%	43%

Section Totals

Table 24: Section Totals

	Air France	BA	Finnair	Iberia	KLM	Lufthansa	SAS	Average	Average Percentage
Section 1	6	30	9	5	25	21	31	18	40%
Section 2	20	41	30	21	48	36	55	36	50%
Section 3	2	8	1	1	5	5	10	5	27%
Section 4	11	21	6	7	13	17	20	14	38%
Section 5	7	16	5	4	13	15	18	11	46%
Totals	46	116	51	38	104	94	134	83	43%

Group 1 Section Scores (KLM, Lufthansa, SAS and BA)

Table 25: Section Totals for Group 1

	KLM	Lufthansa	SAS	BA	Average	Average Percentage
Section 1	25	21	31	30	27	60%
Section 2	48	36	55	41	45	63%
Section 3	5	5	10	8	7	41%
Section 4	13	17	20	21	18	50%
Section 5	13	15	18	16	16	67%
Totals	104	94	134	116	112	58%

Group 2 Section Scores (Air France, Iberia, Finnair)

Table 26: Section Scores for Group 2

	Finnair	Iberia	Air France	Average	Average Percentage
Section 1	9	5	6	7	16%
Section 2	30	21	20	24	33%
Section 3	1	1	2	1	6%
Section 4	6	7	11	8	22%
Section 5	5	4	7	5	21%
Totals	51	38	46	45	23%

Results for the 50 Reporting Guidelines

Table 27: The 50 Questions and the Results.

	Company	Air France	BA	Finnair	Iberia	KLM	Lufthansa	SAS	Average Score
	CER Year	1997/98	1998	1997	1997	1997/98	1997/98	1998	
I. Mgmt Policies and Systems									
1	CEO Statement	2	2	2	1	2	1	4	2.0
2	Environmental Policy	0	3	1	0	3	4	4	2.1
3	EMS	0	1	1	0	3	1	2	1.1
4	Mgmt Responsibility	0	3	1	0	2	2	2	1.4
5	Environmental Auditing	0	1	0	0	1	1	2	0.7
6	Goals and Targets	0	3	0	0	2	3	4	1.7
7	Legal Compliance	1	4	1	1	4	2	3	2.3
8	Research and Development	1	3	1	1	3	3	2	2.0
9	Awards (out of 1)	0	1	0	0	0	1	1	0.4
10	Verification	0	3	0	0	0	0	2	0.7
11	Reporting Policy	1	3	1	0	2	1	2	1.4
12	Corporate Context	1	3	1	2	3	2	3	2.1
	Sub Total	6	30	9	5	25	21	31	18.1
	Maximum Possible Score	45	45	45	45	45	45	45	
	Percentage Score	13.3%	66.7%	20.0%	11.1%	55.6%	46.7%	68.9%	40.3%
II. Input/Output Inventory									
	<i>Inputs</i>								
13	Material Use	1	3	3	1	2	1	4	2.1
14	Energy Consumption	1	2	3	2	4	3	4	2.7
15	Water Consumption	1	2	1	1	2	3	4	2.0
	<i>Process Management</i>								
16	Eco-Efficiency	2	3	2	2	3	3	3	2.6
17	Health and Safety	0	0	0	0	0	0	3	0.4
18	Accidents/Emergency Response	0	1	0	0	1	0	1	0.4
19	Risk Management and EIAs	1	4	2	1	4	3	4	2.7
20	Land Contamination	0	2	0	0	4	0	1	1.0
21	Stewardship of Local Habitats	1	2	2	0	2	2	3	1.7

	Outputs								
22	Waste Minimisation	3	3	3	1	3	3	4	2.9
23	Air Emissions	1	2	2	3	4	3	4	2.7
24	Water Effluents	1	1	2	1	3	2	2	1.7
25	Noise and Odours	2	4	3	3	3	2	3	2.9
26	Transportation	2	4	3	2	4	3	4	3.1
	Products								
27	Life-Cycle Design	1	1	1	1	2	2	2	1.4
28	Environmental Impacts	1	3	1	1	3	2	4	2.1
29	Product Stewardship	1	2	1	1	2	2	3	1.7
30	Packaging	1	2	1	1	2	2	2	1.6
	Sub Total	20	41	30	21	48	36	55	35.9
	Maximum Possible Score	72	72	72	72	72	72	72	
	Percentage Score	27.8%	56.9%	41.7%	29.2%	66.7%	50.0%	76.4%	50%
	III. Finance								
31	Environmental Spending	0	2	0	0	0	1	2	0.7
32	Liabilities	0	1	0	0	1	0	1	0.4
33	Market Solutions	1	3	1	1	3	3	4	2.3
34	Environmental Accounting Cost	0	1	0	0	0	0	2	0.4
35	Charitable Contributions	1	1	0	0	1	1	1	0.7
	Sub Total	2	8	1	1	5	5	10	4.6
	Maximum Possible Score	17	17	17	17	17	17	17	
	Percentage Score	11.8%	47.1%	5.9%	5.9%	29.4%	29.4%	58.8%	26.9%
	IV. Stakeholder Relations								
36	Employees	0	2	0	2	2	3	2	1.6
37	Politicians and Legislators	2	3	1	1	2	2	3	2.0
38	Local Communities	2	2	0	0	0	0	2	0.9
39	Investors	0	1	0	0	1	1	1	0.6
40	Suppliers and Contractors	1	2	1	0	1	2	2	1.3
41	Customers and Consumers	2	3	1	1	1	1	2	1.6
42	Environmental Groups	2	3	2	2	2	3	3	2.4
43	Science and Education	1	2	0	0	2	2	2	1.3
44	Other	1	3	1	1	2	3	3	2.0
	Sub Total	11	21	6	7	13	17	20	13.6
	Maximum Possible Score	36	36	36	36	36	36	36	
	Percentage Score	30.6%	58.3%	16.7%	19.4%	36.1%	47.2%	55.6%	37.7%

	V. Sustainable Development								
45	Technology Cooperation	1	2	1	1	2	2	3	1.7
46	Global Environment	2	2	1	1	2	3	2	1.9
47	Global Development Issues	0	2	0	0	1	2	2	1.0
48	Global Operating Standards	0	2	0	0	2	2	3	1.3
49	Report Design	2	4	2	1	3	2	4	2.6
50	Vision, Scenarios/Future Trends	2	4	1	1	3	4	4	2.7
	Sub Total	7	16	5	4	13	15	18	11.1
	Maximum Possible Score	24	24	24	24	24	24	24	
	Percentage Score	29.2%	66.7%	20.8%	16.7%	54.2%	62.5%	75.0%	46.4%