

**PV-WEB:
INTERNET-BASED PV INFORMATION TOOL**

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Contractor
IT Power Ltd.

Prepared by
P. Cowley

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Executive Summary

Introduction

This report has been prepared by IT Power as the Final Report for the project ‘PV-WEB: Internet-based PV Information Tool’. The report summarises the work undertaken during the course of the project (20th March 2000 to 30th June 2003).

Project Aims and Objectives

The project purpose was to develop a web-based PV information tool for the British Photovoltaic Association (PV-UK). The ‘PV-WEB’ project had the following broad aims:

- To develop and enhance the existing PV-UK web presence at <http://www.pv-uk.org.uk/>;
- To provide a publicly-accessible and widely promoted showcase for PV expertise and technology from UK organisations;
- To provide a tool for UK companies (especially SMEs) to increase competitiveness and more effectively identify opportunities in the growing world-wide PV market.

Although the project was undertaken on behalf of PV-UK and its members, the membership has been actively involved in the design, development and implementation of the site throughout the duration of the project.

Site Design and Implementation

The PV-WEB interface design focus was on fast loading, strongly branded look and feel elements, easy navigation and clear communication of the site content. The site structural design incorporates nine main navigation headers

<i>Home:</i>	(Return to) the Welcome page;
<i>About PV-UK:</i>	Information about the association, its function, conditions of membership and costs, together with membership application forms;
<i>PV in the UK:</i>	Showcase of UK experience and expertise in PV;
<i>PV technology:</i>	General information about photovoltaic technology aimed in particular at novices and members of the public;
<i>Industry search:</i>	A searchable database allows visitors to identify members capable of providing particular products or services;
<i>News & events:</i>	Information about new products, projects, policies, programmes, etc.;
<i>Reference & faqs:</i>	Answers to Frequently Asked Questions; links to PV-UK documents; other relevant PV and renewable energy websites;
<i>Site map:</i>	A graphical representation of the site structure;
<i>Members' Area</i>	A password-restricted section of the site accessible by PV-UK members.

All pages of the site also provide a facility for visitors to subscribe to the Association’s ‘PV-Alert’ email bulletin.

The web site incorporates a number of key interactive and database-enabled elements, specifically:

- A searchable database of PV-UK members;
- A searchable database of PV buildings projects around the UK;
- A searchable database of PV news articles posted on the website.

Administration of these areas is achieved through simple offline databases and browser interfaces that do not require the administrator to have a knowledge of web-design applications or programming.

Site Evolution

The project team has been keen to introduce new features to the site to make it an even more useful resource for the public. Some of the key improvements introduced during the course of the project include:

- The addition of a number of case studies describing non-buildings applications for PV;
- Expansion of information about requirements and procedures for connecting a PV system to the distribution network and the addition of information on general planning requirements;
- The introduction of a guide to PV systems for the complete novice, answering common queries in a step-by-step approach (responding to DTI's Major PV Demonstration Programme);
- The introduction of sponsorship 'banners' on key areas of the site to help ensure that PV-WEB recovers some of its costs once this project is concluded.

Conclusions

The project objectives have been achieved through the creation of a professional website that offers a range of useful tools and informative products and services to a broad range of stakeholders including the general public as well as decision makers from government, utilities and the housing and general construction sectors.

- PV-WEB presents an attractive interface portraying a competent and professional industry;
- The site is user-friendly with a variety of value-added tools and information for lay-audience and professionals alike;
- The site has been developed with continual input from the industry itself;
- The project has been a successful example of government-industry co-operation;
- The site currently attracts some 234 visitors each day. This represents an 800% increase in activity over the duration of the project;
- Over 1800 people from a variety of backgrounds receive regular updates on UK and international PV developments through their subscription to the Association's free email bulletin 'PV-UK Alert';
- Amongst the most popular areas of the site are the searchable databases of UK PV buildings projects and UK PV industry service providers, indicating that PV-WEB is educating its audience as to what can be achieved with PV in the UK, and;
- The site is providing a potentially valuable referral service for the UK PV industry, with over 1500 referral links recorded during the past 4.5 months, and an estimated 5200 referrals since July 2001.

PV-UK now has full responsibility for website maintenance and is fully committed to maintaining PV-WEB as a vital service to Members and other UK stakeholders. It will finance this through offering opportunities to PV-UK Members to sponsor key information areas of the site, and through developing dissemination and other value-added services that it can provide to other relevant stakeholders.

CONTENTS

1	INTRODUCTION	1
2	BACKGROUND	1
3	TASKS 1-3 - SITE DESIGN AND INITIALISATION	1
3.1	Development Approach	1
3.2	Site Design.....	2
3.2.1	Interface and structure.....	2
3.2.2	Content management and functionality	4
3.3	Initial Data Collection	4
4	TASKS 4&5 - ONGOING DATA COLLECTION & SITE MAINTENANCE.....	5
4.1	Site evolution.....	5
4.1.1	Case studies.....	5
4.1.2	Grid-connection (and planning) issues	5
4.1.3	Step-by-step guide to PV	5
4.1.4	Projects listing.....	5
4.1.5	Sponsorship.....	6
4.2	Maintenance Issues.....	6
4.2.1	News Area.....	6
4.2.2	Email bulletin distribution	6
5	ACTIVITY MONITORING	6
5.1	Site Activity Summary	6
5.1.1	General Summary	6
5.1.2	Activity summary for the last reporting period.....	11
5.2	Value for Industry (PV-UK Members).....	11
6	TOWARDS A SELF-SUSTAINING SITE	12
6.1	Sponsorship	12
6.2	Dissemination Services.....	12
6.3	Future Site Development	13
7	CONCLUSIONS.....	13
7.1	Key Achievements.....	13
	Appendix A: Acknowledgements	A1

LIST OF FIGURES

Figure 1: Screen Capture of the Final PV-WEB Interface Design	2
Figure 2: PV-WEB Activity Summary (1st September - 31st December 2000)	8
Figure 3: PV-WEB Activity Summary (18th July 2000 - 19th July 2001)	8
Figure 4: PV-WEB Activity Summary (19th July 2001 - 11th January 2002).....	9
Figure 5: PV-WEB Activity Summary (14th January 2002 - 12th April 2002).....	9
Figure 6: PV-WEB Activity Summary (12th April 2002 - 3rd July 2002)	10
Figure 7: PV-WEB Activity Summary (21st January 2003 - 29th May 2003)	10

LIST OF TABLES

Table 1: Site Activity - Key Performance Indicators.....	7
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1 INTRODUCTION

This report has been prepared by IT Power as the Project Final Report detailing the work carried out between 1st January – 30th June 2003, and summarising the work undertaken during the course of the entire project (20th March 2000 to 30th June 2003).

The activities described in this report relate to the following work packages:

- Task 1 - Site Structure Planning / Design;
- Task 2 - Initial Data Collection;
- Task 3 - Initial Programming;
- Task 4 - Ongoing Data Collection;
- Task 5 - Ongoing Site Maintenance;
- Task 6 - Project Management and Reporting.

2 BACKGROUND

The project purpose was to develop a web-based PV information tool for PV-UK called "PV-WEB". The tool had the following broad aims:

- To develop and enhance the existing PV-UK web presence at <http://www.pv-uk.org.uk/>;
- To provide a publicly-accessible and widely promoted showcase for PV expertise and technology from UK organisations;
- To provide a tool for UK companies (especially SMEs) to increase competitiveness and more effectively identify opportunities in the growing world-wide PV market.

Specifically the functions of PV-WEB are intended to help PV-UK achieve its stated objectives more effectively, namely:

- Raise awareness about PV technology amongst **decision-makers**;
- Improve competitiveness of **UK industry**;
- Raise awareness of the opportunities of PV amongst the **wider public**;
- Improve benefits and opportunities for **PV-UK members**;
- Offer a valuable tool for the administration of PV-UK.

It is important to emphasise that while the project was undertaken on behalf of PV-UK and its members, the membership has been actively involved in the design, development and implementation of the site throughout the duration of the project. Indeed, the project could not have proceeded without the financial and in-kind support of the members, and their continued involvement will be critical to the ongoing success of PV-WEB. The contribution of these companies and individuals is acknowledged in Appendix 1.

3 TASKS 1-3 - SITE DESIGN AND INITIALISATION

3.1 Development Approach

The project officially commenced on March 20th 2000. A "kick-off" meeting was held on March 27th 2000 for the purpose of confirming project deliverables and timescales. The K-O meeting included an in-depth discussion on the general content and functionality of the entire website, based on a site content outline prepared by ITP/PV-UK.

The site outline, incorporating additional elements discussed during the KO meeting, was formalised into a site map for discussion at a meeting of the PV-UK Board of Directors on 28th March 2000.

Various additional comments from the PV-UK Board on the proposed content and functionality of the site were incorporated into a revised site map which served as the basis for a site-planning meeting and subsequent discussions between ITP/PV-UK and the website design subcontractors, m.e.thornton internet (now Trainor-Thornton).

The website interface and structural design were made available for comment to all members of PV-UK, as well as key DTI representatives, early in the design process. Additionally all PV-UK members and the relevant DTI representative were invited to comment on the content and functionality of the site prior to the public launch.

3.2 Site Design

3.2.1 Interface and structure

The PV-WEB interface design focus was on fast loading, strongly branded look and feel elements, easy navigation and clear communication of the site content. The final interface design is presented as Figure 1.



Figure 1: Screen Capture of the Final PV-WEB Interface Design

Figure 1 shows that the site structural design incorporates nine main navigation headers, which give visitors easy access to the following information:

<i>Home:</i>	(Return to) the Welcome page.
<i>About PV-UK:</i>	Information about the association, its function, conditions of membership and costs, together with membership application forms.
<i>PV in the UK:</i>	<p>This is one of the core sections of the site, showcasing UK experience and expertise in PV.</p> <p>The introductory page includes a regional map of the UK which is linked to a database of PV in buildings projects around the UK.</p> <p>Sub-menus provide access to a tool for searching the database, as well as information on applications for photovoltaics in the UK and case studies of some non-building applications.</p> <p>Subsequent to the site launch, additional sub-menus were incorporated to enable visitors to see a complete listing of UK PV in buildings projects and to locate information about the procedures for connecting a PV system to the UK electricity distribution network.</p>
<i>PV technology:</i>	<p>General information about photovoltaic technology aimed in particular at novices and members of the public considering purchasing a PV system or components.</p> <p>Sub-sections include a general overview of PV technology (cell) types and broad applications, and an illustrated description of the function of common system components. Links are provided to the searchable database of PV-UK members (Industry Search).</p>
<i>Industry search:</i>	This is another key element of the site. A searchable online database allows visitors to identify members capable of providing particular products or services (e.g. installers, designers, product suppliers, trainers and educators, etc.).
<i>News & events</i>	Provides information about new products, projects, policies, programmes and other appropriate news, together with summary details on forthcoming conferences, workshops and seminars in the UK, Europe and worldwide.
<i>Reference & faqs:</i>	<p>This area provides Answers to Frequently Asked Questions (based on typical enquiries to PV-UK Secretariat and Members); links to PV-UK documents, such as the Strategy Report and Britsol Newsletters; and links to other relevant PV and renewable energy websites.</p> <p>There is a detailed section on procedures for connecting PV systems to the UK distribution Network and a list summarising DTI reports (subsequently linked to the DTI's online report library).</p>
<i>Site map:</i>	A graphical representation of the site structure.
<i>Members' Area</i>	A password-restricted section of the site accessible by bona-fide PV-UK members. This area is largely for administrative purposes, providing access to PV-UK internal documents, details of enquiries received by the Secretariat that members may wish to respond to, and a members' discussion forum. There is also a tender notification area, intended to provide information on PV-sector opportunities worldwide to the members.

All pages of the site also provide a facility for visitors to subscribe to the Association's 'PV-Alert' email bulletin. The alert is a monthly summary of interesting PV-related news, including modifications and additions to PV-WEB, information on members' projects, products and services, forthcoming events and other appropriate information from around the world.

Originally, the project team also proposed a general Discussion Forum for visitors to the site. This was envisaged as an open chat room, administered by ITP/PV-UK, allowing visitors to discuss relevant aspects of choosing and using PV technology (particularly in the UK context), and/or to solicit advice from other visitors to the site (both PV-UK members and other users). However, there were concerns among other project stakeholders that this area could be used for inflammatory or defamatory purposes. This area was therefore not incorporated into the public site.

3.2.2 Content management and functionality

The web site incorporates a number of key interactive and database-enabled elements, specifically:

- A database of PV-UK members. Visitors can chose to apply one of a variety of filters to assist their searches:
 - organisation name (or part name)
 - region of operation
 - activity (e.g. installer, manufacturer, architecture, green electricity, etc.)
 - system types (e.g. building integrated, grid connected, stand-alone, commercial, etc.)
 - components supplied (e.g. modules, batteries, inverters, etc.)
 - devices supplied (e.g. lighting, fountains, pumps, etc.)
 - brands supplied
- A database of PV buildings projects around the UK. Visitors can chose to apply one of a variety of filters to assist their searches:
 - project name (or part name)
 - region of installation
 - installation type (e.g. façade, roof, canopy, etc.)
 - installed capacity
 - year of installation
- A database of PV news articles posted on the website. Articles automatically expire after a (administrator-defined) period of time and are then archived. The archive remains fully accessible. Visitors can perform a keyword search of both current and archived article titles.

Both the members and projects databases are administered offline through an MS Access database created as part of this project. A series of ‘switchboards’ (menus) are used to activate a variety of simple data entry forms. Once data record modification or addition has been completed, a single ‘button’ generates a complete series of output data tables in the format required for processing by the online database. This makes administration of the members’ and projects’ details very straightforward, such that a knowledge of web programming languages is not essential for maintaining these key components of the site.

The news database is administered through a separate web-based interface, though again a knowledge of html is not essential for maintaining the news library. The administrator simply enters an article title, byline, text and details of the accompanying image and posts the article to the online database. A similar interface is used to generate and distribute the pv-uk alert email bulletin.

3.3 Initial Data Collection

Following consultation with the PV-UK Board and Members, and based on the agreed database design, two proformas were distributed to all members 6-8 weeks prior to the public launch for the purposes of populating the projects’ and members’ database records. The information relating to relevant buildings projects provided by members was also supplemented/validated where possible by other information sources (such as case studies, papers and project reports).

4 TASKS 4&5 - ONGOING DATA COLLECTION & SITE MAINTENANCE

Day to day maintenance of the PV-WEB site is now wholly the responsibility of the PV-UK Secretariat. Ongoing data collection largely relates to periodic updating of the PV buildings projects database and periodic updating of news and events (also for the PV-UK Alert email bulletin). The database tools and procedures described above successfully help to minimise the effort required to maintain the core components of the website, though certain problems have been encountered with some of the online administrative tools (news and email alert - these are described in more detail in 4.2).

4.1 Site evolution

The success of the government's various PV programmes, together with a general increase in public interest towards PV has various implications for PV-WEB. The project team has been keen to introduce new features to the site to make it an even more useful resource for the public, and clearly the site is delivering on its objectives of better informing the general public and presenting an enhanced web-presence for PV-UK. Some of the key improvements introduced during the past three years are described briefly below.

4.1.1 Case studies

A number of case studies describing non-buildings applications for PV were added relatively early in the project to balance the wealth of information about grid-connected systems / PV buildings.

4.1.2 Grid-connection (and planning) issues

The area related to requirements and procedures for connecting a PV system to the distribution network were considerably expanded to include:

- a brief overview of issues that users need to be aware of when considering installing a (distributed) PV system;
- an introduction of the need for Distribution Network Operator's permission to connect and the need for approved (inverter) equipment;
- a map defining the DNO regions, linked by region to;
- a full online listing of DNO contact points;
- an introduction to Engineering Recommendation G77;
- a flowchart describing the G77 application and commissioning procedure.

This area was subsequently updated again to accommodate information on general planning requirements (specifically the update to the PPG22 annex on photovoltaics).

4.1.3 Step-by-step guide to PV

In response to the launch by the DTI of the Major PV Demonstration Programme, PV-UK introduced a guide to PV systems for the complete novice, answering common queries in a step-by-step approach, including the technology, costs, expected power output in the UK and steps involved in obtaining a reliable system. The guide provides links to the solar grants website administered by EST.

4.1.4 Projects listing

As a number of the projects originally contained within the buildings projects database were rather limited in detail, the project team took the decision to remove these from the online listing.

Subsequently a summary list of all identified UK PV buildings projects was added to the site to restore basic information about the missing projects. Wherever possible, links are provided from the summary list to detailed descriptions in the online database.

4.1.5 Sponsorship

The final major enhancement to the site under this project has been to introduce sponsorship ‘banners’ on key areas of the site (homepage, projects and members search areas and the Alert email bulletin). This should help ensure that PV-WEB recovers some of its costs once this project is concluded. Sponsorship considerations are discussed in more detail in section 6.1.

4.2 Maintenance Issues

In general the site administration and maintenance has been quite straightforward and largely trouble-free. However, there have been several problem areas – notably administration of the news area and distribution of the Alert bulletin:

4.2.1 News Area

A problem was encountered with the server processing of news articles early in the project, where some news items were not appearing in the current news database as expected due to an error with the processing of expiry dates. Articles were instead being immediately archived, giving the impression that there were no current news items for review. This problem was quickly rectified by Trainor-Thornton.

More recently, a problem of news article truncation was encountered. This is avoided by keeping the news articles to a maximum length of 225 words.

4.2.2 Email bulletin distribution

Problems were also encountered with the automatic mail facility used to generate and distribute the ‘PV-UK Alert’ bulletins, resulting in some subscribers receiving multiple copies of the same newsletter, and other subscribers not receiving the Alert at all. This was apparently a direct result of the popularity of the service; the original mail handling programme was not designed to cope with the large numbers of subscribers that the service had attracted (over 1250 subscribers by July 2002).

The Secretariat has worked together with Trainor-Thornton to resolve the problem and a relatively low-cost repair has been achieved. The Alert service is now fully restored and is operating without problems.

5 ACTIVITY MONITORING

5.1 Site Activity Summary

5.1.1 General Summary

One of the principal ways that the project team has been able to assess the impact of PV-WEB is through analysis of the site activity logfiles. With the exception of the six month period from 3rd July 2002 to 21st January 2003¹, full reports exist for PV-WEB’s visitors’ activity for the duration of the project.

¹ PV-WEB was transferred to a new server during early January 2003 following various problems (slow access and some loss of data) with the original server. Site activity log files for the preceding six month period were among the data which was lost.

Reports of site activity have been generated using the SurfStats analysis package. Five report summaries are presented, covering the periods July 2000 - July 2001, July 2001 – January 2002, January-April 2002, April-July 2002 and January-May 2003. Screen captures of the report summary pages are presented below as figures 3-7. The site reports show a very encouraging and continuous increase in visitor activity over the course of the project.

An additional summary report covering the period from September –December 2000 has also been included (Figure 2). Though this information is also incorporated within Figure 3, it covers a similar length of time as the most recent report (Figure 7) so provides a useful basis for comparing early site activity levels with those at the end of the project.

Table 1 provides a summary of what may be regarded as PV-WEB's Key Performance Indicators, namely daily numbers of hits, page views, user sessions and data transferred, averaged over the respective reporting periods. Average data transferred per user per day has also been presented as this is a reasonable measure of how much value individual users are 'extracting' from the site. Additionally the number of subscribers to the PV-UK Alert email bulletin is also provided as a further indicator of the increasing outreach potential of the site. There are clear and very strong positive growth trends across the board of these KPIs.

Table 1: Site Activity - Key Performance Indicators

Indicator	Period					
	<i>01/09/00 - 31/12/00</i>	<i>18/07/00 - 19/07/01</i>	<i>19/07/01 - 11/01/02</i>	<i>14/01/02 - 12/04/02</i>	<i>12/04/02 - 03/07/02</i>	<i>21/01/03 - 29/05/03</i>
Ave Hits / Day	834	1367	2171	2970	4007	6215
Ave Page Views / Day	140	207	291	411	541	808
Ave No. User sessions / day	26	75	105	148	174	234
Ave data (MB) transferred / day	4.39	6.85	10.24	16.16	21.06	31.33
Ave data / user	0.169	0.091	0.098	0.109	0.121	0.134
Subscribers to PV-UK Alert	165	320	760	n/a	1250	1825

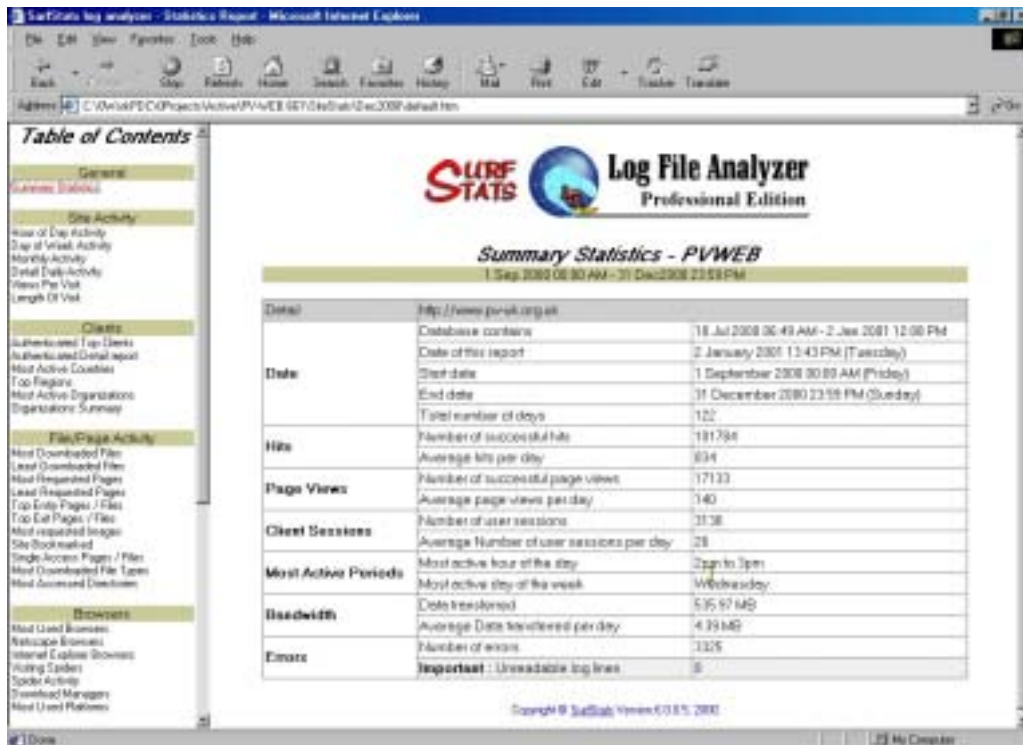


Figure 2: PV-WEB Activity Summary (1st September - 31st December 2000)

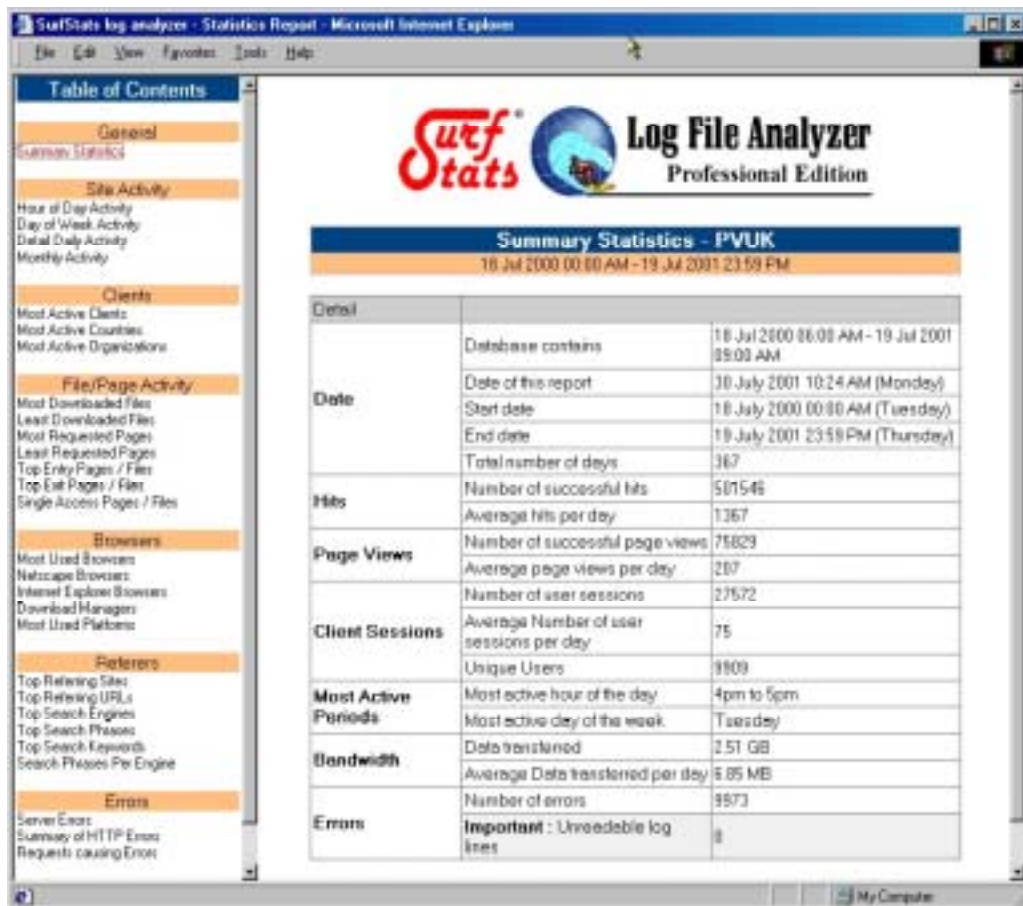


Figure 3: PV-WEB Activity Summary (18th July 2000 - 19th July 2001)

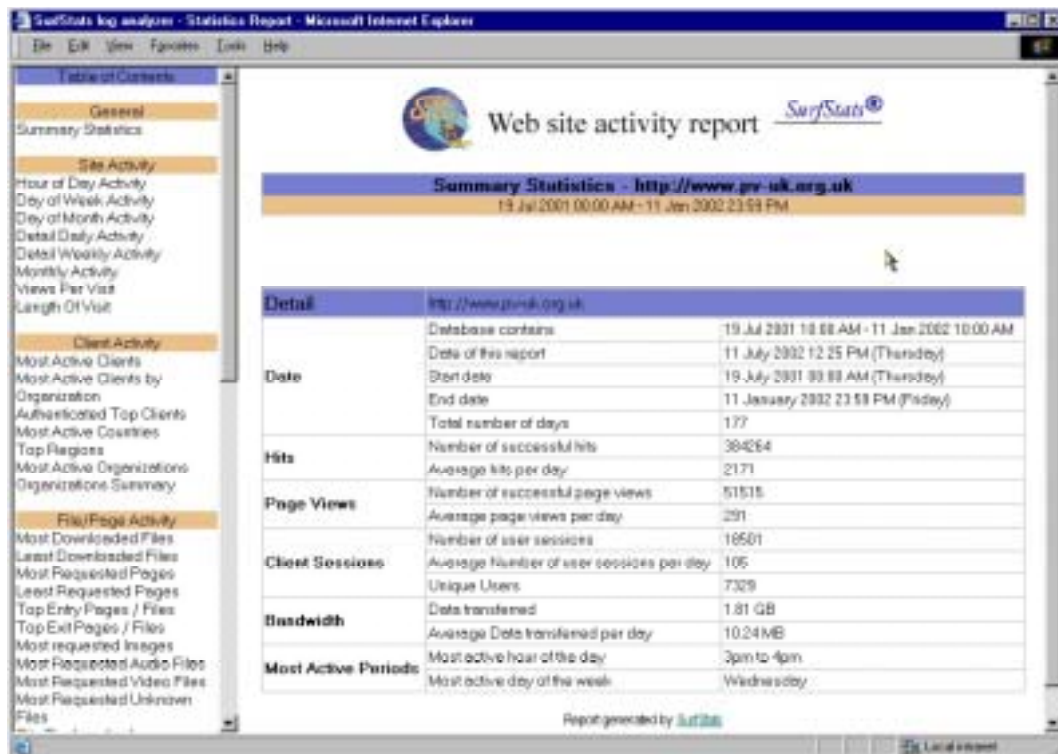


Figure 4: PV-WEB Activity Summary (19th July 2001 - 11th January 2002)

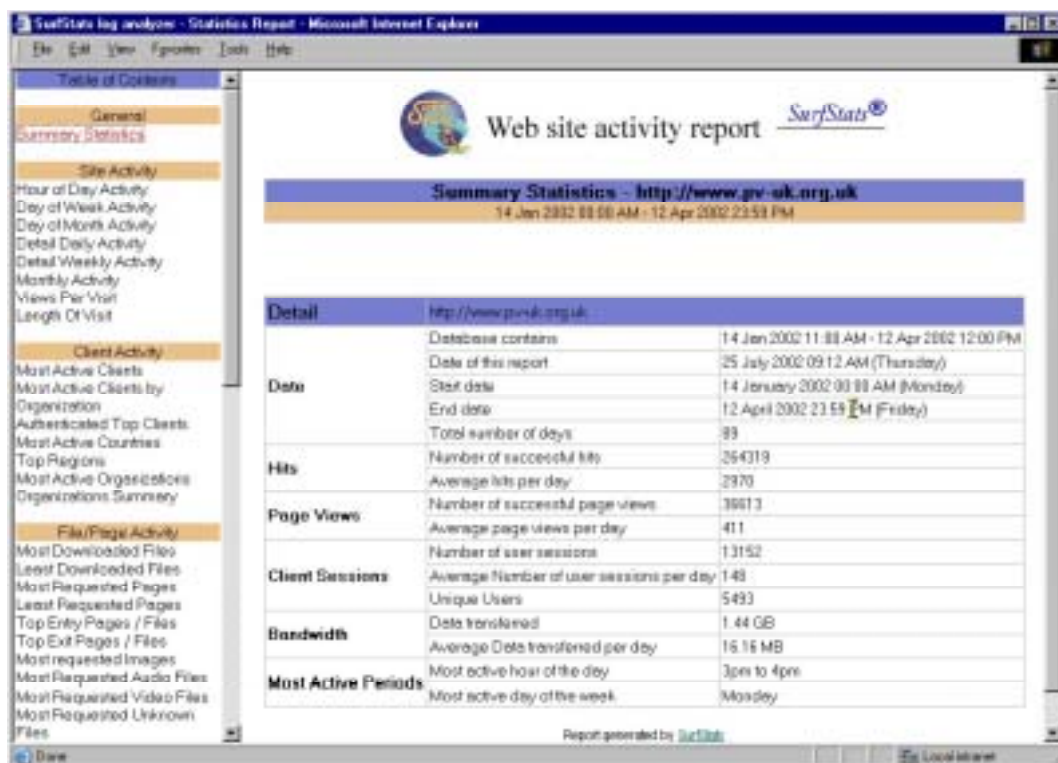


Figure 5: PV-WEB Activity Summary (14th January 2002 - 12th April 2002)

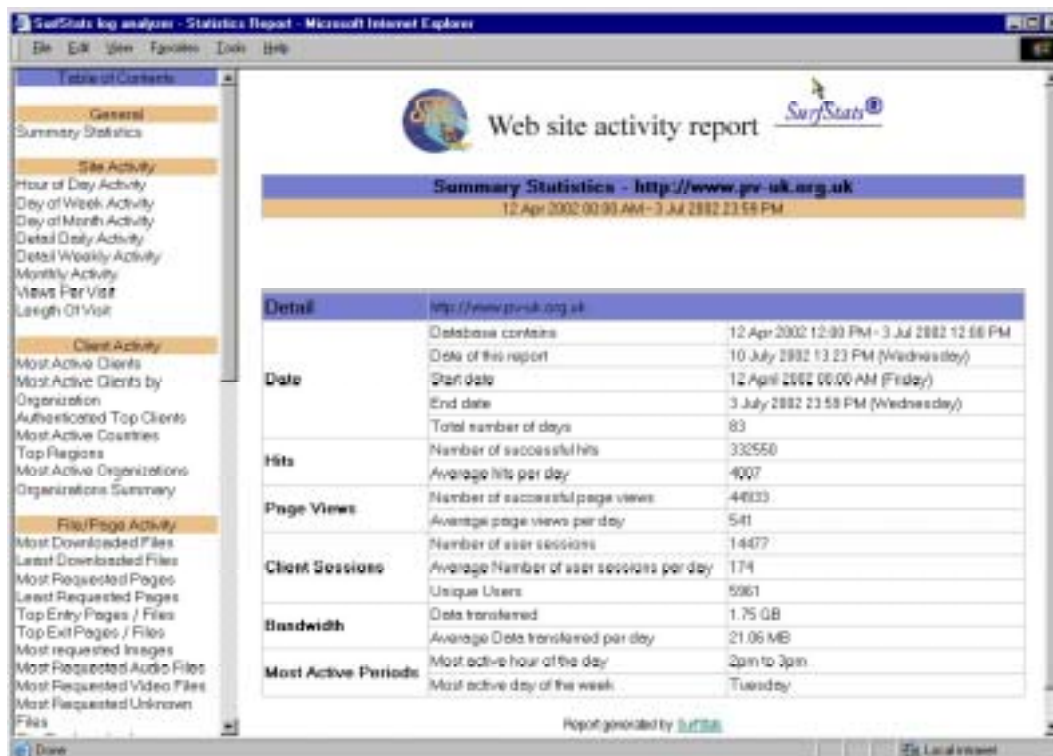


Figure 6: PV-WEB Activity Summary (12th April 2002 - 3rd July 2002)

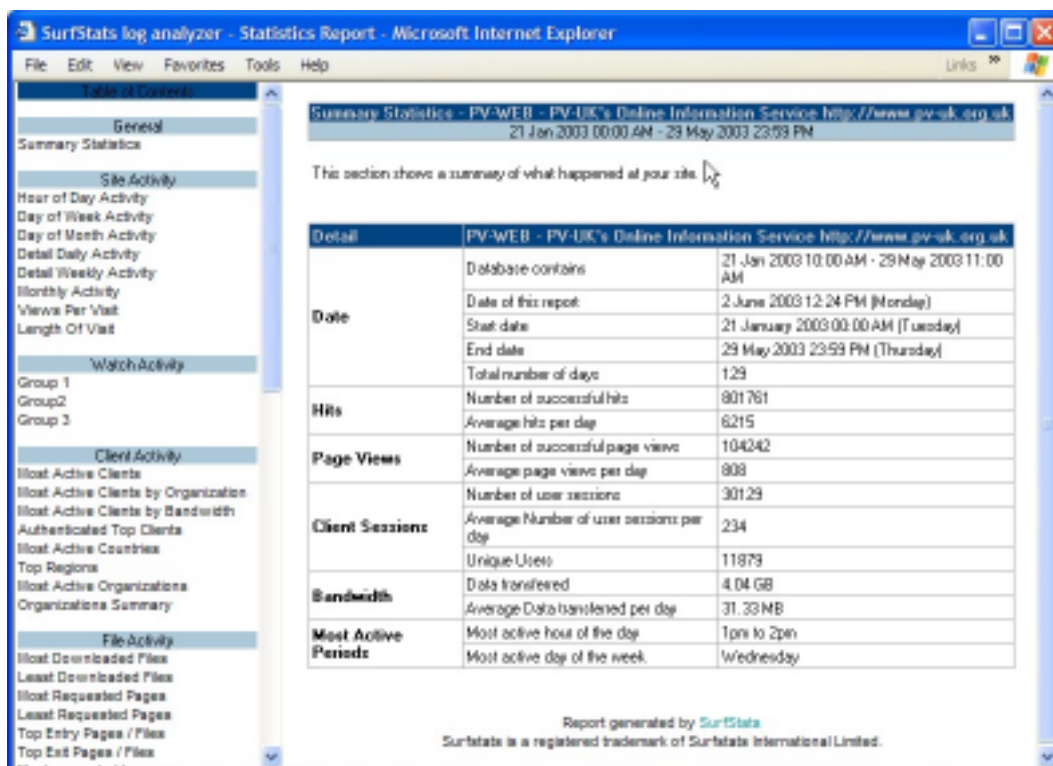


Figure 7: PV-WEB Activity Summary (21st January 2003 - 29th May 2003)

5.1.2 Activity summary for the last reporting period

Site activity has continued to grow well since the previous detailed analysis in July 2002. The key conclusions from the log-file analysis are:

- Comparing the report for the period 21st January to 29th May 2003 with that for the period 12th April to 3rd July 2003, the average number of daily hits and page views have increased by 55% and 49% respectively;
- Average number of user sessions was up by over one-third to 234 per day compared to 174 per day for the previous available report;
- Average data transferred per day has increased by almost 50% to 31.33 MB. In terms of the average data transferred per user per day, this has also risen by almost 11%, demonstrating that the increased visitor numbers are also making more use of the information that is contained within the site;
- The number of page views per visitor has also increased slightly to almost 3.5 on average from approximately 3.1 per user just under 12 months ago, strengthening the assertion that visitors continue to derive increasing value from the site;
- The most requested file was apparently the 1999 Strategy document, though the number of client sessions associated with the requests suggest that far fewer users actually downloaded the file. This discrepancy between high number of 'requests' and number of client sessions can be attributed to users on relatively slow and/or busy connections trying to download a large file (4.8MB). The user's PC will prompt the server to send the next part of the file with each prompt registering as a request. The number of user sessions associated with file downloads may therefore give a more accurate picture of the popularity of a file. On this basis, the most popular file was the Confederation of Renewable Energy Association's response (Dec 2000) to the Renewables Obligation Preliminary Consultation (179 User Sessions), closely followed by the list of PV-UK Members' contact details (163 User Sessions) and the contact list of the Distribution Network Operators (156 User Sessions);
- The most popular page is now the projects index page (linking to examples of PV in UK buildings – 13604 page views within the analysis period) closely followed by the homepage (13350 page views) and the industry index page (linking to the search facility for suppliers and installers – 12677 page views);
- The top entry page is the homepage, though again this is closely followed by both the projects index and industry index, demonstrating that users have either bookmarked these areas of the site, or are making selective search strings (e.g. 'UK PV projects', 'PV suppliers' etc.) which take them directly to these pages, bypassing the homepage. This has important implications for the positioning of sponsorship banners;
- By far the most popular search word used by visitors finding PV-WEB through the various search engines is 'photovoltaic' (2385 occurrences), followed by 'PV' (1548) then 'solar' (1304) and 'UK' (1266). Key search phrases – again the most popular is 'photovoltaic' (1267 occurrences), followed by 'PV' (342) then 'solar electricity' (270);
- During the last 4.5 months, 1558 requests were made for 'company link pages', which transfer visitors to PV-UK members' sites. This is analysed in more detail in section 5.2.

5.2 Value for Industry (PV-UK Members)

Mid-way through the project, functionality was introduced to the site to allow monitoring of downstream referrals from PV-WEB to PV-UK Members' own sites. This consists of automatic transfer pages, one per company, linking from both the industry search area and the UK projects

area (and in future also from the sponsorship banners). Visitors that through-click to a member's own website register a page hit on the transfer page. These are recorded in the site log files. During the analysis period, 1558 transfer page views were requested. It must be emphasised that it is very difficult to assess the true business value of these leads - they may or may not result in concrete sales - but certainly PV-WEB is continuing to direct enquiries towards UK industry. In total, referrals were made to 26 member companies' between 21st January and 29th May 2003. The top ten most requested sites in the last three months are as follows:

Website	No. Referrals
www.solarcentury.co.uk	213
www.bpsolar.com	146
www.windandsun.co.uk	143
www.dulas.org.uk	128
www.becosolar.com	118
www.sundog-energy.co.uk	105
www.cholwell.org.uk	89
www.dabbrook.com	86
www.winsund.com	73
www.pvsystems.com	71

Assuming that referrals for the period 4th July 2002 to 20th January 2003 (period for which site log data are not available) continued as per the rate reported in the preceding period, PV-WEB has made an estimated 5200 referrals to UK PV industry since July 2001.

6 TOWARDS A SELF-SUSTAINING SITE

6.1 Sponsorship

To coincide with the completion of the DTI project, PV-UK will be introducing sponsorship of key areas of the website to generate revenue to partially support the ongoing maintenance associated with PV-WEB.

Sponsorship will consist of a single animated GIF positioned on the welcome page and the projects and industry search areas of the site. This will present a short message, sponsors' logos and a link to a separate page giving a short description of the services that each of the sponsors can provide. The animated files will be in general keeping with the tone of the site - i.e. they will be designed to attract attention, but will present a professional image of the industry and will not be gaudy.

The sponsorship rates have been agreed by PV-UK Board: £100 for 1 month, £500 for 6 months, £900 for 12 months. It is envisaged that there would be a maximum of 6 sponsors at any one time.

6.2 Dissemination Services

The Secretariat and PV-UK Board will also offer 'dissemination of results' services for other relevant UK-oriented PV projects and programmes. The Board has already negotiated a two-year contract for one-such project.

6.3 Future Site Development

The core services of the site – notably the databases of members services and UK buildings projects, the news and events information, and the email alert are now well established and the future site maintenance will concentrate first and foremost on maintaining these features. Nevertheless, as has been demonstrated over the course of this project, PV-WEB is a dynamic and flexible tool that can be used to highlight key information as it emerges, or to provide added value to other online resources (e.g. information on grid-interconnection aspects; background to those interested in the solar grants programme etc.). PV-UK is committed to continuing this added-value service, where it is appropriate to do so and when it can adequately finance such activities.

With the increasing number of UK PV projects and the rapid growth in interest about PV and its use in the UK, maintaining these services has financial implications for the Association. The PV-UK Board aims to see PV-WEB remain the main UK source for PV project data, but this may require some site modification and additional financial resources to be secured to effectively incorporate data from other sources including IEA-PVPSUK, the Domestic Field Trial, Large-scale BIPV Field Trial, Major Demonstration Programme, etc. Responding to this ambition is the current site development priority. Other future development initiatives will emerge as the UK market information needs and priorities become more established.

7 CONCLUSIONS

The project purpose was to develop a web-based PV information tool for PV-UK that would develop and enhance PV-UK's web presence, provide a publicly-accessible and widely promoted showcase for PV expertise and technology from UK organisations and provide a tool for UK companies to increase competitiveness and more effectively identify opportunities in the growing world-wide PV market.

The project objectives have been achieved through the creation of a professional website that offers a range of useful tools and informative products and services to a broad range of stakeholders including the general public as well as decision makers from government, utilities and the housing and general construction sectors.

7.1 Key Achievements

- PV-WEB presents an attractive interface portraying a competent and professional industry;
- The site is user-friendly with a variety of value-added tools and information for lay-audience and professionals alike;
- The site has been developed with continual input from the industry itself;
- The project has been a successful example of government-industry co-operation;
- The site currently attracts some 234 visitors each day. This represents an 800% increase in activity over the duration of the project;
- Over 1800 people from a variety of backgrounds receive regular updates on UK and international PV developments through their subscription to the Association's free email bulletin 'PV-UK Alert';
- Amongst the most popular areas of the site are the searchable databases of UK PV buildings projects and UK PV industry service providers, indicating that PV-WEB is educating its audience as to what can be achieved with PV in the UK, and;

- The site is providing a potentially valuable referral service for the UK PV industry, with over 1500 referral links recorded during the past 4.5 months, and an estimated 5200 referrals since July 2001.

The Association now has full responsibility for website maintenance and is fully committed to maintaining PV-WEB as a vital service to Members and other UK Stakeholders. It will achieve this through offering opportunities to PV-UK Members to sponsor key information areas of the site, and through developing dissemination and other value-added services that it can offer to other relevant stakeholders.

APPENDIX A: ACKNOWLEDGEMENTS

While the PV-WEB project was undertaken on behalf of PV-UK and its members, the membership has been actively involved in the design, development and implementation of the site throughout the duration of the project. The contribution and support of the following organisations and individuals to the implementation of PV-WEB is gratefully acknowledged.

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