

# ENERGY INFORMATION ON INTERNET

Origin and Maintenance of a Database

<http://www.ecn.nl/eii/main.html>

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## Acknowledgement

The database has been developed in 1995 within the framework of the ETDE/INIS-project (7.7078) . In 1996 it was a separate project (no. 7.7033). In 1997 it was part of the programme Energy Information Services of the business unit ECN Policy Studies (project 7.7095). The technical implementation of the database on the World Wide Web has been carried out by ECN Facility Services.

## Abstract

The activities in the period mid-1995 up to and including October 1996 which resulted in the present Internet database Energy Information on Internet (EII), are evaluated. The selection, description and indexing of the energy sites are described. Also attention is paid to the presentation, the promotion, the growth, the use, and the future of EII. This report is a summary of a more detailed report, which is only available in electronic form at <http://www.ecn.nl/eii/eiirep96.htm>. The electronic version includes appendices in which the applied search tool, implemented in August 1996, is outlined. Also detailed statistical data on the use of EII are presented there.

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## SUMMARY

The activities in the period mid-1995 up to and including October 1996, which resulted in the present database Energy Information on Internet (EII), are discussed. In particular the selection, description and indexing of the energy-related Internet sites, and the presentation, the promotion, the growth, the use, and the future of EII are evaluated. In Chapter 2 attention is paid to the selection of energy-related Internet information sources. Although sites from all over the world are included, the selection is primarily focused on European sites. October 1996 about 400 sites were described. It is expected that the maximum amount of sites to be described (around 800) will be realized at the end of 1996. Also the format to describe the sites is briefly outlined. Two arguments are given why a qualitative assessment of the information, offered by the EII-included sites, is not given: servers are under construction and the user determines the quality himself. Next to an explanation of both list and search options of the database records an overview is given of the presentation interface of the database EII in Chapter 3. Also the promotional activities to bring the existence of EII to the attention of potential users are outlined. In Chapter 4 the use of EII will be discussed, although the results of the general analysis of the usage data only provide a rough indication of the popularity of and need for the database. Detailed analysis of the statistical data is required to draw more specific and valuable conclusions about the usage of EII. In the near future an option to search in EII for sites with unique information will be offered. Also the search structure and the descriptions (records) will be adjusted in order to give the user of the EII database more control over the precision of the retrieved information.

This report is a summary of a more detailed report which is only available in electronic form (<http://www.ecn.nl/eii/eiirep.html>), including the appendices in which the search module, implemented in August 1996, is outlined. Also detailed statistical data on the use of EII are presented there.



# 1. INTRODUCTION

The power of Internet is that current information is available 24 hours a day and 7 days a week, independent of the location where it is stored in electronic form. It also adds a new possibility to retrieve or distribute information to the existing options (oral by personal contacts and telephone, in writing via fax or mail, in a textual or visual form via television, etc.). At the same time it does not solve the problem of the overflow of information. On the contrary, the noncommittal way by which information is provided through the Internet does not ease the search for specific and qualitative information. Therefore, the necessity to bring some kind of order into the large amount of information for specific target groups is great.

Mid-1995 ECN Policy Studies initiated the compilation and maintenance of a database in which elaborated descriptions of energy-related information sources are entered and can be used to access those sources through the Internet. October 1995 the database 'Energy Information via Internet' (EII) was made available to the users of Internet, along with the opening of the ECN World Wide Web server, in cooperation with ECN Facility Services. The database started with 150 descriptions. October 1996 it contained 400 records.

In the next chapters attention will be paid to the selection, description and indexing of the energy sites, as well as the presentation, the promotion, the growth, the usefulness, and the future of EII. In the electronic version of this report appendices are included in which the search tool, implemented in August 1996, is highlighted. Also detailed statistical data on the use of EII are presented there.



## 2. SELECTION, DESCRIPTION AND INDEXING OF INTERNET SITES

### *First selection*

For the first selection, which started mid-1995, of energy-related sites several sources of information were used:

- the Internet itself and related search tools (e.g. Lycos, and later also AltaVista),
- knowledge at ECN of energy-related organizations,
- printed directories of energy-related organizations<sup>1</sup>.

The starting point of EII was the Virtual Library (VL). The VL is a very long list of links to sites with information about many different subjects, among which Energy. In the first part of 1995 VL-Energy<sup>2</sup> comprised circa 70 links to servers, mainly located in the USA. Almost all those links were described and entered in EII. Next, the database was supplemented with organizations from countries which contribute to the international bibliographic database ENERGY<sup>3</sup> and which maintain an Internet server. This resulted in almost 30 extra records. Finally, circa 50 organizations of which annual reports or research reports are available in the ECN library collection were traced via Internet. Thus, the EII database could be made available to the public on the ECN WWW-server in October 1995, containing 150 detailed descriptions of energy-related Internet servers.

### *Description and indexing*

The added value of EII in comparison with other overviews and lists of Internet accessible information sources is in the detailed description of a site. Based on that description the user of EII can assess in advance if a visit to the site is worthwhile. Besides, a search tool has been added to the database by means of which the user can search more precise for specific, relevant sites.

The format, used to describe the sites, consists of fields to characterize the organization and the contents of the information offered. In the field General Description an overview is given of the most important contents of the server. In the first line the aim or mission of the organization is described, while in the following lines the most characteristic information is described briefly, supplementing the information already given in the other fields of the format (see Appendix B). Deliberately, an outspoken, critical judgement on the quality of the presented information is not given, while it is up to the user to decide whether specific information is interesting or not. Also an assessment of the accessibility of the server can not be given, while it depends too much on the technical possibilities that a user has to his disposal to search for information via Internet.

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<sup>1</sup> in this report organizations is used as a generic term for companies, institutes, etc.

<sup>2</sup> <http://solstice.crest.org/online/virtual-library/Vlib-energy.html>

<sup>3</sup> the database ENERGY is the product of the information program Energy Technology Data Exchange (ETDE) of the International Energy Agency (IEA)

### *Growth*

Due to limited time that can be spent on the EII-project 20-25 records are added to the database each month. The average time to describe a site is 50 minutes, including the search, consultation, printing, and assessment of the information offered and the maintenance (updating) of the description. It is expected that the growth of EII has reached its maximum at the end of 1997. At that time the database will contain approximately 800 records. After 1997 only time to update and maintain the database on a regular basis is required.

### *Quality*

From the start of the database EII hardly any attention is paid to an assessment of the quality of the information at a site for two reasons:

- Servers are under construction  
While much of the information offered and the presentation of the information are changing constantly and the webmasters of servers are in the middle of a learning process, it is premature to assess the quality of the information. Still, some critical remarks and an advice are in place where it concerns sites that offer information via Internet while the site is clearly 'under construction', i.e. only the structure of the future server is offered, including links that lead to empty pages. It is much better first to draft a well-considered plan to present the information and test the concept in your own organization, than bother and irritate the user with constantly changing addresses of pages and a not yet fully tested graphical presentation. It is extremely hard to convince a user to come back once he quits a site because of the 'under construction' signs.
- The user determines the quality himself  
The second argument why up to now hardly any attention is paid to a qualitative assessment of the information is that it is up to the user to determine whether a site is interesting or not. The user can deduct from the description in EII if he will visit a site that only present a corporate brochure or a site where he can find substantial information (e.g. full-text reports, newsletters, etc.). After stabilization of the number of sites of which descriptions will be included in EII the assessment of the quality will receive more attention in order to distinguish between the good and the bad.

### *Progress of the selection*

In Chapter 2 it is briefly discussed how the selection of the first 150 sites took place. It became clear that:

- The majority of those 150 energy-related sites is located in the USA. Therefore, we decided to first of all describe energy-related sites in Europe. Only for the Netherlands it is tried to cover all the energy-related sites that are available in the Netherlands. When most of the relevant European sites are described and included in EII attention will be paid to sites in other continents.
- To an increasing extent the WWW is used to distribute, offer and search information. Therefore, we stopped including Internet addresses of specific gopher-servers, ftp-servers, or telnet-servers. Most of those servers appear to be available through the WWW-server, are no longer be maintained or even discontinued.

- There is a growing amount of sites that present lists of links to energy-related sites, although none as elaborated and freely accessible as EII. Therefore, it is not necessary to try to cover every site. In specific cases it is enough to describe sites where a large number of well-indexed and reliable energy-related links are maintained and made available.
- A very positive effect of the use of EII is that almost directly after the start of the ECN WWW-server in October 1995 webmasters of energy-related sites send in requests to be included in the database. On average 2-3 requests are received per week. Most of the requests are accepted. Together with the search tool, implemented in August 1996, a form is added to the EII-pages by means of which webmasters can fill in the necessary data to include or to update the already existing description of their site.



### 3. THE PRESENTATION AND PROMOTION OF EII

#### *Search options*

The Internet user of EII can choose from the main screen

(<http://www.ecn.nl/eii/main.html>, see Appendix A) how he wants to use the database:

- Ask for the total list  
Before the implementation of the search tool only the total list could be presented. As a consequence of the increase of the number of records the transfer of the list took too much time, in particular for users outside the Netherlands on other continents. The total list presents for each site:
  - the name of the organization or the title of the homepage, including the reference to the description of the site,
  - the direct link to the site,
  - standardized keywords.
- Field-specific searching  
Besides name and Internet address of the organization, information is available of the Country, Type of Organization, Target Group, Keywords, Type of presented Information and a General Description. The fields Country, Type of Organization, Target Groups, and Keywords are indexed separately and searchable. Limited possibilities are available to apply Boolean operators between the index terms of the different fields. The result of a field-specific search is a much shorter and more precise list of references to relevant sites.
- Free-text searching  
All the words, excluding specific stop-words, of every record in the EII database are indexed and can be searched as a whole. Also strings can be used in a search. By means of this search option the user is offered the possibility to type in whatever concept he wants to see if something about that concept is present in the EII database. Finally, it is taken into account that some Internet users have limited options where it concerns the presentation of forms. For those users IS-INDEX can be used to search EII.

#### *Promotion*

The existence of EII has been brought to the attention of potential users in different ways. Use has been made of conventional means of communication (a brochure, a press report, a journal article) and the Internet itself:

- Brochure  
In October 1995 a Dutch brochure of 26 A5-format pages was published with the title 'Energie Informatie via Internet'. The contents of the brochure comprised an introduction, explanation of the EII database and two appendices with the most important Internet terms and some examples of EII-records. The total edition of 500 brochures was distributed to energy experts in the Netherlands. Parts of the brochure are still available at the ECN WWW-server, in particular the explanation of the EII-format.
- Press report  
At the end of October 1995 a news message was sent to the editors of ten Dutch magazines and three foreign news bulletins, announcing the existence of the EII database. The message was accepted and placed by all the Dutch magazines, but

not in the foreign bulletins. It was a pleasant surprise that a very brief, but extremely positive message was unsolicitedly placed in the Financial Times<sup>4</sup> ('excellent range of links, straightforward and helpful - no frills, exactly what this type of database site should be').

- Journal article

In the Dutch journal Open<sup>5</sup> (professional journal for librarians and documentalists), an article on EII was accepted and published as part 11 within the series 'Internet in de Praktijk' (Internet in Practice).

- Internet

Several possibilities to promote a product via the Internet are available. The most important options are provided by the many search tools and other non-profit or commercial information services which index information that can be accessed through the Internet. A simple search by means of the Internet search tool AltaVista was carried out the end of 1996 using the search option link:eii. The search resulted in almost 200 sites which had included a link to the EII-database.

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<sup>4</sup> Financial Times, October 30, 1995, p.13

<sup>5</sup> Open, vol.28, no. 7/8, p.179-180, 1996

## 4. THE FUTURE OF EII

### Use

The most important benefit of EII is that energy experts throughout the whole world is offered a possibility to find their way in the jungle of information via Internet. The added value of EII in comparison with other energy-related lists of links is in the detailed description of the information contents of a specific server and in the indexing by means of standardized keywords. The free access to EII is in accordance with the unwritten principle of Internet, although it implies that visitors of the database are not always regular users. Therefore, from the overall analysis of the presently available statistical data it can be deduced to a limited extent if specific 'individuals' (a visitor often can not be recognized as a person, but only as a server's name or Internet address) come back on a regular basis or were just passing by ('surfing'). In order to draw more specific and valuable conclusions it is necessary to carry out a detailed analysis of the statistical data of the usage of EII (see figure below).

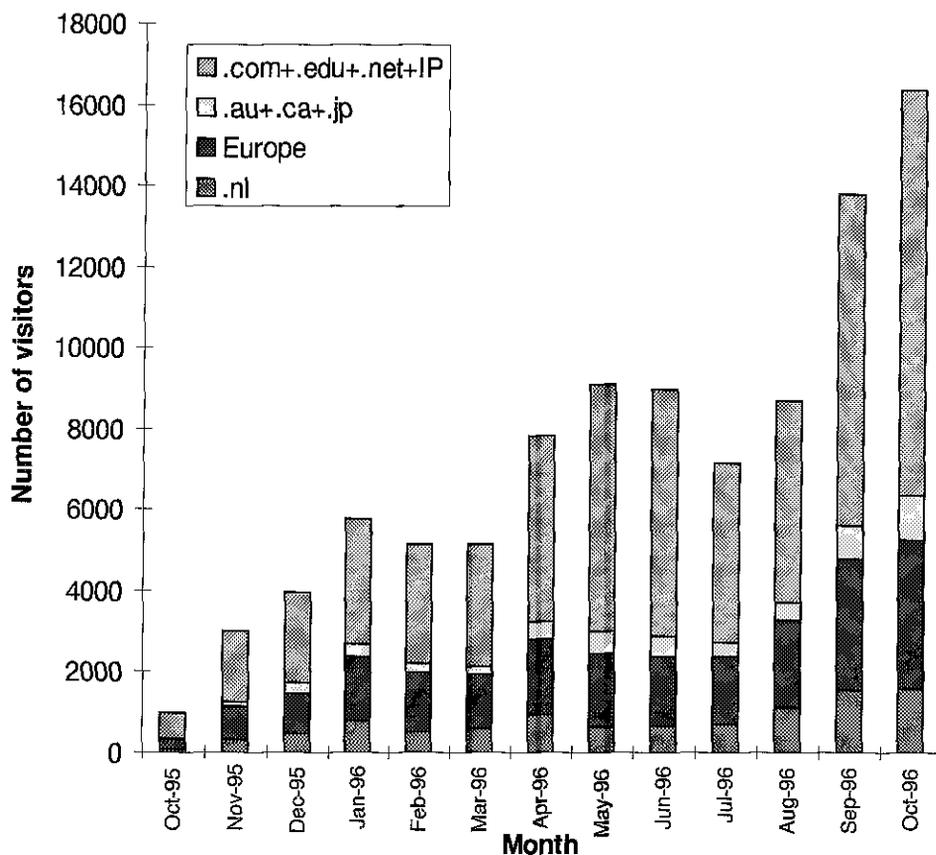


Figure 1: Use of EII in the world

The columns represent the number of visitors of the EII database for the Netherlands (.nl), 31 countries in Europe, the group Australia, Canada and Japan (.au+.ca+.jp) and the group which can be identified by the standardized codes for type of organization (.com+.edu+.net) or a numeric Internet address (IP). The majority of the organization coded types is located in the USA.

### *Future*

The future and progress of EII are determined by:

1. the finite number of sites to be described,
2. the continuous maintenance (updating) of the records,
3. the depth of the information given in the descriptions of the sites,
4. improvement of the accessibility of the database, and
5. the costs and benefits.

ad. 1 (the finite number of sites to be described) and

ad. 2 (the continuous maintenance (updating) of the records).

It is expected that the maximum of the number of sites to be described will be around 800, which number will be realized by the end of 1997. In 1998 the database only needs maintenance, part of which can be automated by means of software which checks Internet addresses and downloads and compares homepages with previous versions. A comparative research of available software will be carried out.

ad. 3 (the depth of information given in the description of the sites).

The present high use of the database can be further increased by paying more attention to the occurrence of different types of information. Internet is in particular interesting when it offers the possibility to retrieve full-text documents or complete datafiles. Sites that will have those options available, now or in the near future, must be clearly marked in EII. Also, the user must be able to recognize so-called key servers: sites where a large amount of well-organized links to energy-related sites and a substantial amount of qualitative information can be found. Therefore, sites must be analyzed in more detail to find out which types of full-text information and data are available: reports, newsletters, statistical data, databases, software, etc., and the present EII-format must be adjusted to include fields with information about the availability of such document types and data.

ad. 4 (improvement of the accessibility of the database)

A judgement on the performance of the search tool is outside the scope of this report while only the experiences with the EII database in the period mid-1995 to October 1996 are discussed. Technical and statistical information about the search tool and the use of EII will be given in the more detailed, electronic-only version of this report.

ad. 5 (the costs and benefits)

It is not likely that EII will be offered on a commercial basis in order to generate financial means for future maintenance of the database. However, it can be considered to ask for a cost-effective contribution from commercial businesses which are included or want to be included in the database. Also advertisements in the form of logos or banners can be included on the EII main page or in the specific descriptions. Finally, it can be explored if there is a market for a printed version of the whole EII database or specific selections from the database (e.g. European sites or specific subjects).

# APPENDICES

## Appendix A. Homepage of EII



Netherlands Energy Research Foundation

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### Energy Information on Internet

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The Energy Information on Internet (EII) database comprises *590 detailed descriptions and characterizations of energy-related information sources* that can be accessed through Internet. Compared to other energy-related overviews EII offers energy experts the possibility to make a qualitative selection in advance out of the growing amount of energy information sources, worldwide available through Internet.

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[[English / Nederlands](#)] . . . [[EII searching](#)] . . . [[EII information](#)] . . . [[EII news](#)]

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- **Format EII**

The sites of EII are described and characterized in a special format. This format consists of the title of the site, address data and information on the contents of the site.

- **Searching EII**

The following *search facilities* are available:

1. [Searching EII by keywords and fields](#).
2. [Free searching in all fields of EII](#) (using glimpse).
3. ['ISINDEX'](#) (for WWW browser system not supporting forms).

- **Complete EII list**

The [whole list of Internet addresses](#) (256k) is also available. This list contains references to information sources, consisting of the following 3 fields:

1. *Title of the homepage*, with a [hyperlink](#) to detailed information;
2. *The Internet address* of the site;
3. *Keywords*, based on the texts that are part of the Internet information source.

- **To be included**

ECN receives many requests from 'webmasters' of energy-related sites to be included in the database. [A form is available](#) to fill in the required information.

Webmasters of sites that are already in EII can also use the form to make suggestions for an update of the description of their site. In case your browser does not support forms, the required information can also be sent [via e-mail](#).

*The database will be updated and supplemented on a monthly basis.*

- **Information**

For more information or suggestions to improve EII (interface), please contact:

Hillebrand Verkroost  
ECN Policy Studies  
[verkroost@ecn.nl](mailto:verkroost@ecn.nl)

## Appendix B. Example of the format



Energy Information on Internet

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ECN

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**Title Organization:**

Stichting Energieonderzoek Centrum Nederland, (ECN or Netherlands Energy Research Foundation), Petten, Netherlands

**Internet Address:**

<http://www.ecn.nl/>

**Country:**

Netherlands, international

**Type of Organization:**

research

**Target Groups:**

researchers, policymakers, industry

**Keywords:**

energy, environment, nuclear energy, renewable energy sources, fossil fuels, energy policy, biomass

**Type of Information :**

Corporate Information : X  
 Projects + Programmes : X  
 Press / News reports : X  
 Articles : X  
 Full-text : X  
 References : X  
 Addresses : X

**General Description:**

ECN is the leading centre for energy research and development in the Netherlands. It develops technologies for a safe, clean and efficient energy supply. The units work on renewable energy sources, nuclear energy, energy from fossil fuels, policy studies, radiation technology and the rational use of energy and materials. Next to corporate information and a large amount of information about the activities from the different units, overviews are given of ECN reports (some presented in a full-text form). Also a comprehensive database of energy-related Internet information sources is provided, updated and maintained on a regular basis.