

# Welcome to the first EPD<sup>®</sup> Stakeholder Conference!

STOCKHOLM MAY 15 2012



# INTERNATIONAL EPD<sup>®</sup> SYSTEM

## Past, present and future

Joakim Thornéus  
The International EPD<sup>®</sup> System



Massimo Marino  
Chair Technical Committee







Published 1999-02-12

VATTENFALL  Certified Environmental Product Declaration (EPD),   
hydropower electricity from the Lule river

### Manufacturer and Product

**Manufacturer:**

Vattenfall AB, 162 87 Stockholm through Vattenfall AB Vattenkraft, 971 77 Luleå,  
www.vattenfall.se

Contacts: Sören Ek, +46-920-770 00 (environment and generation, Lule river),  
Birgit Bodlund, +46-8-739 50 00 (certification issues) and Sara Ericsson, +46-8-739 50 00 (sales).

Vattenfall AB Vattenkraft's goal is to have a certified environmental management system, in accordance with ISO 14001, by the end of 1999.



*Map of the Lule river catchment showing the three hydropower plants which have been studied in detail in this certification process.*

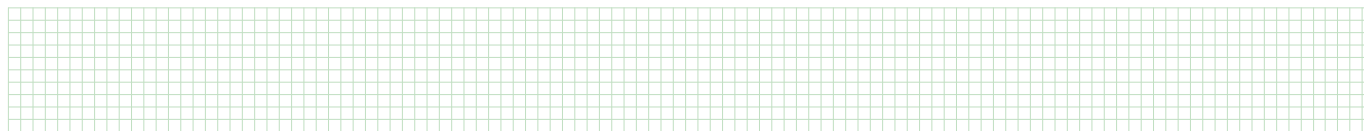
**Product:**

The Lule river is located in the extreme north of Sweden, and is the most important Swedish river from a hydropower point of view, both in terms of capacity and energy. Total peak capacity is 4 220 MW, and total annual generation is approximately 14 TWh. This represents 44% of Vattenfall's hydropower generation. The Lule river catchment is app. 25 200 km<sup>2</sup> and the average discharge is 515 m<sup>3</sup>/s.

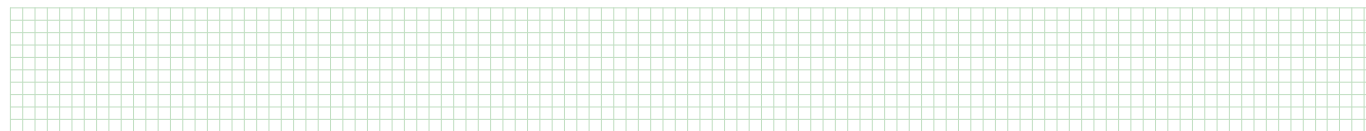
There are a total of 15 hydropower plants in the river, all owned by Vattenfall. Three of these have been chosen as representative in the LCA study which is the basis for this Environmental Product Declaration, EPD. A reasonable point of departure in order to discuss the representativity of plant selection is the area of land subjected to land use conversion per unit produced electricity. Hydropower development in the Lule river has affected a total of 323 km<sup>2</sup> of land with 15 power plants producing app. 14 TWh/year. The three plants chosen for the study have affected 88 km<sup>2</sup> of land, i.e. 27% of the total, and produces app. 3.4 TWh/year, i.e. 24% of the electricity. From this it is reasonable to argue that we have good representativity with our plant selection. We are overestimating impact marginally.

## Since 1999:

- ~ 400 issued EPDs
- 180 companies from 15 countries
- 28 member organizations
- 180 PCRs
- Verifiers (certification bodies and individual verifiers) in 11 countries



The overall goal of an Environmental Product Declaration, EPD<sup>®</sup>, is to provide relevant, verified and comparable information about the environmental impact from goods and services.



INTERNATIONAL  
STANDARD

ISO  
14025

First edition  
2006-07-01

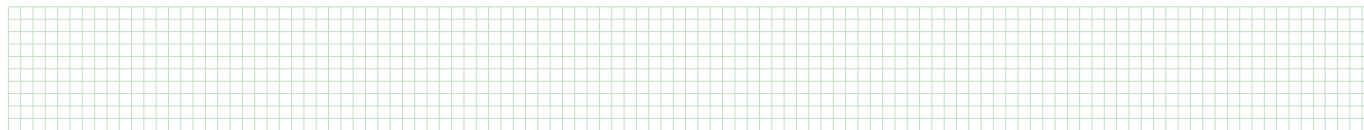
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Environmental labels and declarations —  
Type III environmental declarations —  
Principles and procedures

*Marquages et déclarations environnementaux — Déclarations  
environnementales de Type III — Principes et modes opératoires*

The International EPD<sup>®</sup> systems acts **following the ISO 14025** principles required for the programme operators. Main points are

- **GPI** – a document with the general instruction is available
- **Public consultation** – each document with a public interest (such PCR and GPI) are published after a **systematic open consultation**
- **Public register** on PCR and EPD is regularly updated
- **Individual verifier criteria** are clearly established
- **Multi issue declaration** – EPDs and LCAs must cover all the environmental issues not only CO<sub>2</sub>



## The International EPD<sup>®</sup> System – some key elements

- Pre-certification of EPDs
- “Sector EPDs”
- Single Issue EPDs
- EPD Process Certification
- Transparent PCR development procedure
- PCRs classified according to existing international classification system
- PCR Basic modules



# Opportunities and challenges for the future

- New standards and initiatives:
  - ISO 14067
  - EN 15804
  - French Grenelle law
  - PAS 2050
  - Ecological footprint
  - Water footprint
  - ...
- New ISO 14001 scheduled for 2014
  - More focus on environmental impact from products
- Growing number of programme operators
  - Comparability?





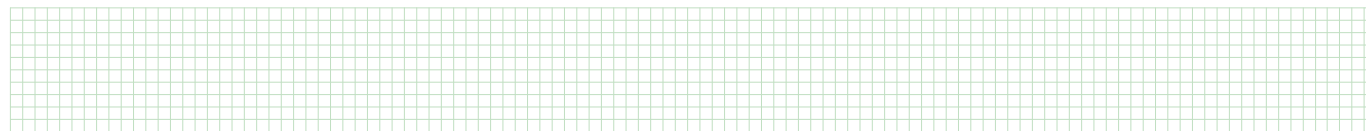
## Opportunities and challenges for the future

- Harmonization of PCRs between programmes is important but:
  - Are there significant differences in the PCR development process (transparency)?
  - Are there other technical differences?
  - Quality?
- GEDnet and common PCR registry



## How will these challenges be met?

- Acceptance of PCRs from other programmes if PCR development process is according to ISO 14025 and GPI
- More marketing of the EPD-logotype to increase the recognition and add value to the certification
- Offer ideas and solutions for companies on how to communicate their EPDs
- Closer collaboration with branch organizations
  - Offer a solution for branch specific programme operators?
  - PCR Development
- Offer training and workshops in:
  - EPD verification, EPD and PCR development
- Increase the use of EPDs: inclusion of other sustainability indicators in the EPD

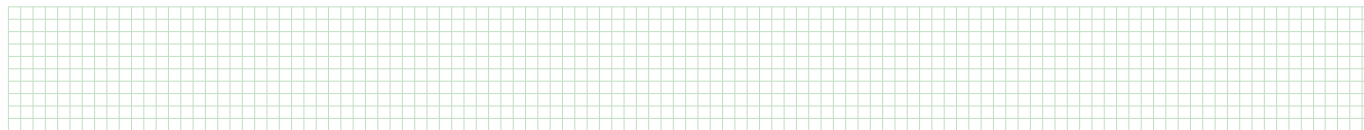


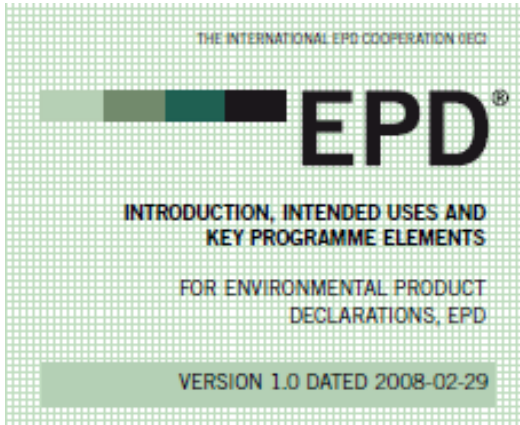


*Additional members will be invited in the coming months to improve the covering of the technical competences*

The **technical committee** manages the main technical and methodological issues related to the EPD preparation and validation. Main issues are:



- **PCR approval:** after the open consultation the final draft of the PCR is approved by the TC
- **GPI development:** improvements and updates of the general programme instructions document are discussed among the TC
- **Individual verifier approval:** application from individual verifiers are discussed and approved by the TC
- **General support for applicant:** many questions coming from stakeholders are answered by the TC members





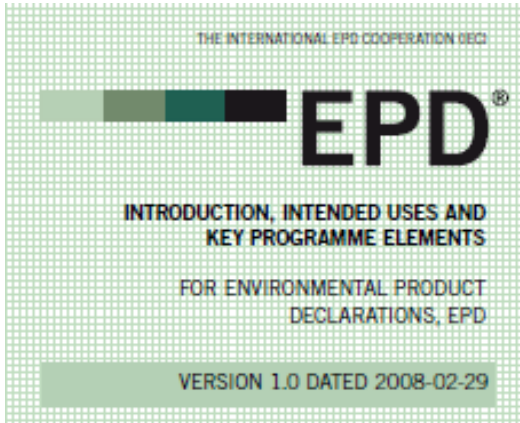
The **general programme instructions** (GPI) specifies the main rules that shall be followed by all the actors of the EPD systems.

GPI is now under review..

- *Collection of specific proposal from stakeholders* 
- *Internal discussion.* 
- **Open consultation (starting from today) to the end of August**
- Final approval and publication (by the end of the year).
- GPI will enter into force from the 1<sup>st</sup> of January 2013
- Alignment period will be managed

***Open consultation  
is now launched.***

**Your comments are  
welcome  
through 31/8/12**



## *What's new?*

**Some modifications** have been proposed in the new GPI draft document. Only some specification and some news

- **Clarifications on environmental indicators:** updated of the environmental indicators that shall be used in the EPD
- Clarifications on some **calculation procedures** (waste, allocation, etc)
- the **sustainability declaration:** for many products, environmental and other sustainability issues should be treated and communicated together. **Environmental data (e.g. carbon footprint) may not be adequately representative**
- Revision of the criteria for the **(individual) verifiers qualification:** stricter rules will be applied to guarantee the full reliability of the system

## Instructions for leaving comments:

- The draft GPI is available on [www.environdec.com/new\\_gpi](http://www.environdec.com/new_gpi)
- Please use the EPD-forum on [environdec.com](http://environdec.com) or the special word template
- Submit your comments no later than August 31, 2012

THANK YOU FOR HELPING US  
IMPROVE THE PROGRAMME!



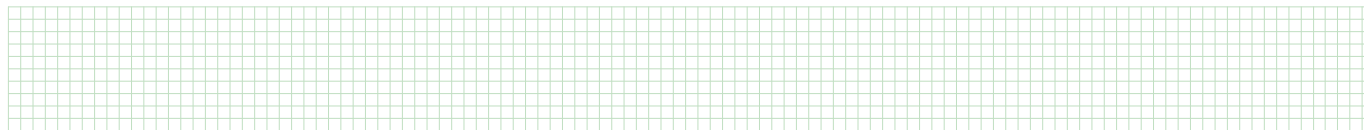


## Resources declaration

- *Non-renewable resources divided in:*
- *Renewable resources divided in:*
- ***Secondary resources*** divided in:

*The energy content into some products (such paper or plastic based products) it is useful information for the end of life management. For this reason the “**energy content of product**” shall be declared in MJ : its estimation shall be made considering the gross calorific value of the product.*

*Only the energy that is suitable for an eventual energy recovery at the end of life shall be considered (energy content of steel due to its carbon content for example shall not be considered since it is not practically recoverable).*



## Environmental impacts

- *Emission of greenhouse gases (expressed as the sum of **global warming potential**, GWP, 100 years, in mass of CO<sub>2</sub> equivalents).*
- *Emission of acidifying gases (expressed as the sum of **acidifying** potential mass of SO<sub>2</sub>).*
- *Emission of gases that contribute to the creation of **ground-level ozone** (expressed as the sum of ozone-creating potential in mass of ethene-equivalents).*
- *Emission of substances to water contributing to **oxygen depletion** (expressed as the sum of oxygen consumption potential in mass of PO<sub>4</sub><sup>3-</sup>).*
- The emission of ozone-depleting gases (expressed as the sum of **ozone-depleting potential** in mass of CFC 11-equivalents, 20 years) and the **abiotic resource depletion** are **optional indicators** and the inclusion of them should be specified in the PCR.

## System Boundaries

The system boundaries determine the unit processes to be included in the study and what type of “upstream data and downstream data” that could be omitted. System boundary settings are usually made case-wise in the PCRs and reduce the number of required LCA data thereby facilitating the calculations provided that no significant information is lost.

[...]

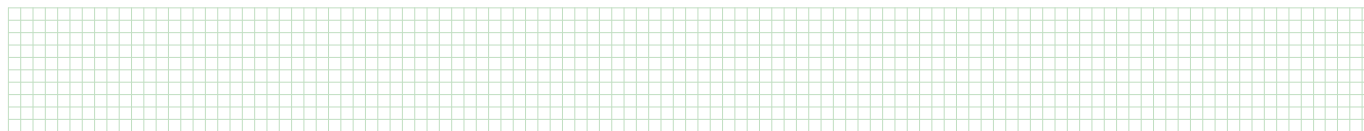
For the EPD purposes, the results shall be presented considering different phases:

upstream processes;

**energy production flows;**

core process;

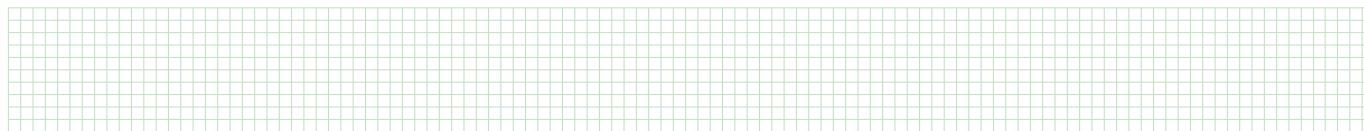
downstream processes.



## Other environmental indicators

The collected raw data from the life cycle inventory work can be used for a variety of information requirements and indicators. The selection of other indicators to include in an EPD has to take into consideration their relevance for the product category under study and the scope of the EPD, that they are not misleading with regard to the mandatory EPD information given and that they shall only apply to those life cycle stages where the information is appropriate. The final selection of recommended other indicators to report on **will be done during the PCR development.**

- The following indicators may be considered to report on:
- Emissions of particle matter of different particle size (PM unspecified in case of less detailed raw data)
- Land use (e.g. in m<sup>2</sup> or based on more specific definitions as types and quality)
- Toxic emissions
- **Water and ecological footprint**



## Electricity generation impacts

- → For the electricity used in the process, there are two alternatives: the company buys the energy from the national grid or from a specific supplier. While in the first case the national electricity mix shall be adopted, in the second case a specific energy mix could be used if available. Electricity production impacts should be accounted for in this priority.¶
  - → RECS or Guarantee of origin from supplier¶
  - → Electricity supplier's residual energy mix¶
  - → National mix (preferably residual mix, otherwise national mix).¶
- → Transport from the final delivery point of raw materials, chemicals, main parts and components (see above regarding upstream processes) to the manufacturing plant/place of service provision based on the actual transportation mode, distance from the supplier and vehicle load.¶



## Towards the product sustainability declaration

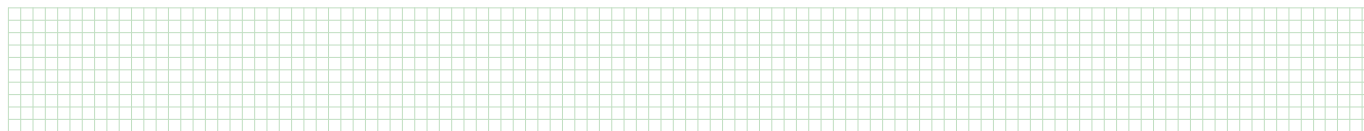
**Environment is just one of the pillars of the sustainability [...].** An example could be the animal keeping in egg production facilities: it is quite probable that the lowest carbon footprint is reached by using the smallest breeding cages, which might not be preferable considering animal welfare. [...]

Another example could be information resulting from so called social-LCA, giving information about a products impact on different social indicators as working conditions etc.

Even if the International EPD® System is fully devoted to the environmental declarations and the first aim is to fulfil the standard ISO 14025, it is suggested that the EPD also could include other relevant sustainability indicators as additional and voluntary information..

**During the PCR preparation and consultation the stakeholders could discuss which sustainability indicators that could (or must) be declared in the EPD. [...]**

Further information of which indicators that could be used can be obtained by the Global Reporting Initiative documents available on [www.globalreporting.org](http://www.globalreporting.org).

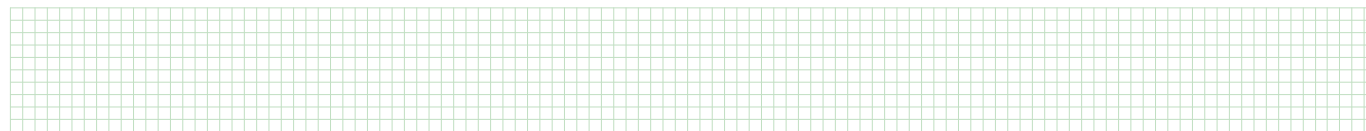




## Sector EPD

Recent years have seen an increasing interest in describing the average performance of extended industrial systems belonging to the same sector in terms of the consumption of energy, raw materials, wastes and the emissions to the environment (including liquid and gaseous). In this context, an extended industrial system is one which starts with raw materials in the earth and traces all industrial, transport and consumer operations until final disposal of the product at the end of its useful life and is often referred to as cradle-to-grave.

Many trade or commercial associations have initiated projects to examine their practices and provide this information for wider dissemination. **The meaning of a sector EPD can therefore be recognized by the need of publishing data about the environmental burden of an average product/process by a direct involvement of a suitable sample of plants**



## Individual verifiers

- The requirements for the qualification of an independent verifier are (all the following criteria have to be fulfilled) :
- at least five years of experience in the LCA field,
- at least five independent third party reviews according the ISO 14040 standard,
- audit qualification attestation following the ISO 19011 criteria.
- If the independent verifier participates to a training course organized by the international EPD® system, requirements on experiences and external reviews are reduced to 3 years and 3 third party reviews.

### 3.4 → INTERNATIONAL DIMENSION AND PCR HARMONIZATION [ ]

EPDs are meant to serve the business sector with means for a broad communication about the environmental performance of products and services on an international market. As a consequence, the new potential market applications related to EPD have led to an increased interest among various stakeholders in many countries to take part in the work related to the PCR development. The ambition is to make the PCR documents internationally applicable as possible, thereby avoiding unnecessary trade implications. [ ]

The ISO 14025 states that harmonization particularly of the Product Category Rules should be strengthened between different programmes to meet the principle of comparability and to enable the possibility to add up information in the supply chain. Programme operators are therefore encouraged to work cooperatively to achieve harmonization of the programmes. [ ]

#### 3.4.1 → RECOGNITION OF PCRS DEVELOPED BY OTHER PROGRAMMES [ ]

The International EPD system recognizes the PCRs prepared preferably by other programme operators operating in accordance with ISO 14025, that fulfil the requirements of the GPR with particular regards to [ ]

- use of attribution approach, [ ]
- similar system boundaries organisation, [ ]
- allocation rules (priority for physical relationships), [ ]
- similar impact categories, [ ]
- similar functional unit definition, [ ]
- similar approach for the waste management impacts evaluation, [ ]
- public stakeholders consultation. [ ]

After the discussion and the approval by the TC, these PCRs can be published on the PCR register on the website of the International EPD System. [ ]

#### 3.4.2 → USE OF OTHER INTERNATIONALLY ACCEPTED PCR GUIDELINES [ ]

If other internationally standardised methodologies exist, that address PCRs or gives guidance on PCR development for certain product categories, and the guidelines are widely accepted and used but however, it should be possible to develop and certify EPDs according to such a standard or guideline even though it is not fully compliant with the International EPD System. In such cases, a specific PCR could be developed, giving the requirements needed to align the other guideline with the basic principles and requirements in the International EPD System. Any deviations must be approved by the technical committee. Such a PCR shall always be developed according to the normal process within the International EPD System. [ ]

## E.4. SINGLE-ISSUE LABEL¶

As an extreme synthesis of the LCA results, a standardized standalone label could be used for the declaration some specific environmental impact, for example Global Warming Potential related to the entire life cycle of the product system under analysis. It could be presented on the company website or directly on the pack or in any document directly related to the environmental declaration of the product according to the company communication policy and strategy. Using a single issue label related to the International EPD® System is only allowed if agreed on with the programme operator. ¶

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¶

## ANNEX F – DEFINITIONS¶

### ▪ Allocation¶

Partitioning the input or output flows of a process or a product system between the product system and one or more other product systems [ISO 14040:2006]¶

### ▪ Biogenic carbon¶

Carbon which is contained in biomass [ISO 14067:2010]¶

### ▪ Biogenic CO<sub>2</sub>¶

CO<sub>2</sub> obtained by the oxidation of biogenic carbon [ISO 14067:2010]¶

