Life cycle assessment and environmental product declarations
WHAT IS A LIFE CYCLE ASSESSMENT?

A Life Cycle Assessment (LCA) offers a standardised framework for quantifying environmental impacts across the full life cycle of products or services. The LCA results can be communicated through a number of different methods, such as Environmental Product Declarations (EPD) which are consistent and comparable documents for products within the same category.

This is a fast moving area of sustainability reporting, with ever increasing interest in LCA and EPD disclosure. As of 2017 there were a total of 667 EPDs listed on the Swedish based International EPD® System; these came from companies located in over 33 countries and this number has been growing each year.

In 2016 there were 184 EPDs published through The International EPD® System compared to 139 the previous year and 41 in 2010. This upward trend is gaining momentum and the largest increase in EPD registrations was from 2015 to 2016 (an increase of 45 registrations) which was more than double that of previous years.

Our infographic below provides an overview of the LCA process:

**LIFE CYCLE ASSESSMENT**

**WHAT:** Assessment of the environmental impacts across all stages of the life cycle for products or services, from the extraction of natural resources to final disposal/re-use. The four main phases of an LCA are goal and scope identification, inventory analysis, impact assessment and interpretation.

**WHO:** Typically for manufacturing companies with high resource or energy consumption (e.g. construction product manufacturers); predominantly driven by market demands such as building certification schemes, customer and stakeholder expectations and competitor pressures.

**THE STANDARDS:** ISO 14040 and 14044, supported by International Reference Life Cycle Data System (ILCD) Guidance

**OUTPUT:** LCA Report
HOW CAN I COMMUNICATE A LIFE CYCLE ASSESSMENT?

Environmental Product Declaration (EPD).

**What:**
EPDs are a globally recognised, standardised document for the consistent and comparable communication of LCA results within a particular product category. An EPD is developed using the following process:

• Find or create relevant Product Category Rule (PCR) document for the product category
• Perform LCA study based on PCR
• Compile environmental information into the EPD reporting format
• Verification and certification
• Registration and publication

**Who:**
Typically for Business to Business (B2B) product communication, in particular for construction products and other high value B2B products. However in 2016 there were also registrations for food & drink, transport, equipment and paper products.

**The standards:**
ISO 14025 and EN 15804 (product category rule for construction products)

**Output:**
EPD Document.

Eco labeling.

**What:**
An ecolabel is a voluntary environmental performance certificate that is awarded to products and services. These products and services have to meet specific, identified criteria depending on the product groups, which reduce overall environmental impact.

Although global in their application, the market is currently dominated by the EU EcoLabel scheme which sets specific environmental impact criteria for a wide range of products and service groups to adhere to, based on LCA outputs. There is also the Global GreenTag, which started in Australasia, but is now recognised in 70 different countries. It is likely that other EcoLabel schemes will emerge in the near future to support product labelling; The Global Eco Labelling Network (GEN) provides information on other global schemes.

**Who:**
It covers a very broad range of products and service groups, from paper products to tourist accommodation services. It is typically communicated at the Business to Consumer (B2C) level, but may also be requested on a B2B level.

**The standards:**
ISO 14024 (Type 1)

**Output:**
Qualifying products or services can display the relevant EcoLabel.
WHAT’S DRIVING THE MARKET?

There are a number of different industry drivers which may encourage a company to undertake a LCA - some typical queries and concerns we receive are:

→ **Building Certification Scheme Pressure**: ‘I am trying to sell my construction product to a developer; however they have stated that they will only procure products with LCA/EPDs so that they can achieve a higher BREEAM/LEED rating’

→ **Competitor Pressure**: ‘Our main competitor has just produced EPDs for their packaging products and our key customers are asking why we have not done the same’

→ **Customer Pressure**: ‘One of our key customers has just indicated that they will go with another electronics supplier if we don’t start to communicate LCA data for our main products’

→ **Procurement Pressure**: ‘We are a supplier for a major infrastructure project and have just been informed that LCA data is a requirement of their procurement process’

→ **Legislative Pressure**: “I’m required to provide an Environmental Declaration for construction and decorative products used in buildings as part of our national law”

HOW CAN WSP HELP?

WSP has a global team of LCA practitioners who are able to guide you through every step of the LCA process.

→ **We have individually approved EPD verifiers within the team who are approved to support with EPD verification through The International EPD® System.**

→ **Our team has access to the latest LCA software and data; this includes a GaBi™ licence and access to the latest ecoinvent and GaBi databases.**

→ **We utilise IMPACT compliant software for building level LCA in order to maximise related BREEAM and LEED scores.**

→ **We are listed as an LCA consultancy through the International EPD® System, which means we are a recognised LCA consultancy.**

→ **We have in-house BREEAM and LEED assessors and can therefore provide the best advice for EPDs driven by building certification schemes.**

→ **We can provide leading advice on construction product LCA and EPDs (e.g. EN 15804) by combing our LCA expertise with our comprehensive experience in the built environment, including engineering, building energy, transportation and infrastructure design.**

→ **We can offer deep technical insights and solutions by drawing on our wider technical capability in sustainability strategy, sustainable energy & renewable energy development, supply chain management, GHG and resource management and climate adaptation strategy.**
QUESTION THE STATUS QUO
Staying curious is what drives us. Looking at challenges from fresh angles helps us deliver future-ready solutions that break paradigms.

OUR SERVICES

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<th>What are the Benefits?</th>
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| **‘Screening’ LCA Study** | • Quickly identify opportunities for resource efficiency and cost savings.  
• Identify any high risk or resource constrained materials in your supply chain (e.g. conflict minerals or critical materials).  
• Inform and drive internal discussions and innovation.  
• Identify which stage of the product life cycle may be causing the biggest environmental impact. | • A global team of LCA practitioners allows us to provide the best support to LCA projects, which are typically international by nature, by working collaboratively to ensure the team aligns with the unique requirements of the project – both in terms of location and skillsets.  
• Widespread and diverse experience gained from supporting an extensive range of clients including Mars Drinks, Seagate and WRAP.  
• Our listing as a LCA consultancy through Environdec means that our capability is industry recognised, adding credibility to your study.  
• GaBi licence and ecoinvent database access means that our modelling can be completed using verifiable LCA data, in either LCA software or a bespoke Excel spreadsheet. |
| **ISO-Conformant LCA Study** | • Respond to stakeholder requests for ISO conformant LCA data.  
• Utilise the results to make informed operating, manufacturing and supply chain decisions.  
• Generate brand enhancement, emissions and cost savings and drive product innovation.  
• Support investment decisions through the application of robust and verifiable LCA data. | |
| **Building Level LCA** | • Quantify the impacts that each key building element and lifecycle stage has on the overall environmental footprint  
• Identify environmental ‘hot spots’ and opportunities for lower impact options and material efficiency opportunities.  
• Quantify the impact of design alternatives and product selection  
• Inform and drive internal discussions and innovation  
• Maximise your score in the materials sections of BREEAM, HQM and LEED | • Experienced LCA practitioners who utilise IMPACT compliant LCA software to assess embodied and operational impacts  
• BIM integrated approach allows ‘live’ testing of designer’s design |
## Service Offering

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<th>EN 15804 - Building Certification Scheme EPDs</th>
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<td><strong>What are the Benefits?</strong></td>
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<td>• Achieve valuable building certification scheme rewards, including LEEDv4, GreenStar or Estidama points and BREEAM innovation credits. It is often expected that construction product manufacturers should have this data available for those seeking green building certification.</td>
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<td>• Respond to green procurement requirements set by developers and infrastructure projects where LCA data in the form of an EPD can be required as a prerequisite.</td>
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### ISO Complaint EPD

Develop or verify an EPD document in alignment with the relevant ISO or European standards (e.g. ISO 14025, EN 15804 etc.). This allows for the consistent and comparable communication of a product’s environmental impact.

### Verified EPD listed through an EPD Programme

Develop or verify an EPD within the framework of a recognised EPD Programme Operator such as The International EPD® System (Environdec), BRE or IBU.

### ECO Platform EPD:

Develop or verify an EPD to meet the requirements of the EU ECO Platform - an umbrella organisation for a number of the main EU EPD programme operators. EPDs that meet these requirements are publically listed through the ECO platform website and can display the ECO Platform logotype.

### What is WSP’s Added Value?

- In-house BREEAM and LEED assessors provide the knowledge and capacity to achieve these industry standards.
- Our individually approved verifiers (through The International EPD® System) have developed and verified EPDs according to EN 15804. This included the use of The International EPD® System’s EN 15804 verification report.
- Our methodology is IMPACT equivalent and therefore compliant with BREEAM and LEED standards.

- Direct experience developing EPDs across a broad range of product categories, including construction, food & drink products and transport.
- Individual members of our team are listed as EPD verifiers through The International EPD® System which means we are approved to verify your EPDs to be publically listed.
- We have experience in developing and verifying EPDs according to relevant ISO standards such as 14025; many of which are now listed publically through recognised EPD Programmes.
DID YOU KNOW?

Organisational Environmental Footprinting (OEF) & Product Environmental Footprinting (PEF)

From 2013-2016 the EU piloted two initiatives with the aim of developing a ‘Single market for green products’ to facilitate improved and more transparent information on the environmental performance of products and organisations.

The process will be finalised by 31/12/2017; following which decisions and recommendations will be made; these two initiatives could become mandatory for EU countries if the pilot is successful.

OEF and PEF will allow companies to identify and mitigate hotspots by measuring and benchmarking their footprint using a standardised methodology.

The PEF pilots covered a broad range of product categories including household detergents, metal sheets, IT equipment, batteries & accumulators, clothing, decorative paints and a range of food & drink products.

The OEF pilots focused at sector level and included Retail and Copper Production.

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ISO Compliant Eco Label

Develop an Eco Label in accordance with ISO 14024 (Type 1).

Meet the standards of a recognised Eco Labelling scheme such as EU EcoLabel or Global Green Tag and gain permission to use the relevant logotype.

- Develop easily recognisable labels which provide product differentiation in the market; particularly as demand for environmentally conscious projects is expanding.
- Assess the environmental impact of a wide range of products or services against an extensive list of environmental criteria.
- Demonstrate that adverse impacts have been limited in a product or service, relative to others in the same category.
- Respond to demands by public procurers at a B2B level, who are facing increasing pressure to work with manufacturers baring labels.

- Our extensive capability with EPDs, understanding of environmental KPIs and familiarity with the key criteria for EcoLabels can be utilised to ensure your product or service is able to meet the necessary standards and comply with the relevant requirements.
To find out more about the Life Cycle Assessment for Products and Companies please contact:
Robbie Epsom, Principal Consultant
+44 (0) 1980 690 550
Robbie.Epsom@wsp.com

To find out more about the Life Cycle Assessment for Buildings and Structures please contact:
Meike Borchers, Technical Director
+44 (0) 79 0006 5123
Meike.Borchers@wsp.com

WSP is one of the world's leading engineering professional services consulting firms. We are dedicated to our local communities and propelled by international brainpower. We are technical experts and strategic advisors including engineers, technicians, scientists, architects, planners, surveyors and environmental specialists, as well as other design, program and construction management professionals. We design lasting solutions in the Property & Buildings, Transportation & Infrastructure, Environment, Industry, Resources (including Mining and Oil & Gas) and Power & Energy sectors as well as project delivery and strategic consulting services.

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