Investment decisions for buildings made today largely determine their environmental impacts over many future decades due to their long lifetimes. Furthermore, such decisions involve a trade-off between additional investments today and potential savings during use and at end of life - in terms of economic costs, primary energy demand, greenhouse gas emissions and other environmental impacts. Since the economic system does not fully account for external environmental effects, environmental resources are used inefficiently. Life cycle assessment (LCA) is suited to complement economic information on buildings with information on their environmental impacts. LCA helps to take measures and action to increase the resource efficiency of buildings and construction.

The project is advancing the research already conducted within EBC Annexes 56 and 57. It broadens the scope of Annex 57 by including operational impacts of buildings in use and by addressing environmental impacts in addition to primary energy demand and greenhouse gas emissions. It is the intention to cover residential, office and school buildings, hospitals and other public buildings, both new and retrofit.

The project is researching harmonization issues arising when applying LCA approaches on buildings. It functions...
INTERNATIONAL ENERGY AGENCY
The International Energy Agency (IEA) was established as an autonomous body within the Organisation for Economic Co-operation and Development (OECD) in 1974, with the purpose of strengthening co-operation in the vital area of energy policy. As one element of this programme, member countries take part in various energy research, development and demonstration activities. The Energy in Buildings and Communities Programme has coordinated various research projects associated with energy prediction, monitoring and energy efficiency measures in both new and existing buildings. The results have provided much valuable information about the state of the art of building analysis and have led to further IEA co-ordinated research.

EBC VISION
By 2030, near-zero primary energy use and carbon dioxide emissions solutions have been adopted in new buildings and communities, and a wide range of reliable technical solutions have been made available for the existing building stock.

EBC MISSION
To accelerate the transformation of the built environment towards more energy efficient and sustainable buildings and communities, by the development and dissemination of knowledge and technologies through international collaborative research and innovation.

as a platform to exchange experiences and knowledge within partner countries and to foster the application of LCA on buildings in countries with little experience yet.

The planned deliverables from this project are:

- harmonised guidelines on the environmental life cycle assessment of buildings,
- establishing environmental benchmarks for buildings (basics, methods, examples),
- national LCA databases used in the construction sector, including standardised characterisation of all relevant LCA databases,
- guidelines for planners on how to optimise the life cycle performance of buildings during the design process using planning tools such as BIM,
- building case studies using a standardised template,
- how to establish national or regional LCA databases targeted to the construction sector, and
- default publicly available, national data sets of LCA-based environmental indicators.

Project duration
Ongoing (2016 - 2023)

Operating Agent
Rolf Frischknecht
treze Ltd.
Kanzleistrasse 4
CH - 8610 Uster
SWITZERLAND
frischknecht@treze.ch

Participating countries
Australia, Austria, Belgium, Canada, Czech Republic, P.R. China, Denmark, Finland, France, Germany, Italy, R. Korea, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, UK, USA
Observers: Brazil, Hungary, India, Slovenia

Further information
www.iea-ebc.org