



LIFE Project Number  
**LIFE05 ENV/DK/000153**

**Progress Report No. 01**

Reporting Date  
**2006-11-30**

LIFE PROJECT NAME  
**Utilisation of ash from incineration of wastewater sludge  
(bio ash) in concrete production**

## **EXECUTIVE SUMMARY**

In this report focus is on the progress in the period June 2006 to November 2006, i.e. supplementary to the Mid-term Report. Thus, this Progress Report is No. 02.

All handling facilities for bio ash at AWS and LYNIS WWTP as well as at 3 UNICON ready-mixed concrete production plants have been established and are well functioning. The Final Report for task 1 and 2 is attached as Appendix 1 and 2.

An amount of approx. 10 t of “white bio ash” (or aluminium bio ash) has been produced and used for the production of “white bio ash concrete”. This concrete quality is very satisfactory, with significant reduction of the colour problem and with a possible improvement of strength compared to the ‘normal’ iron bio ash concrete.

Analysis and tests by DTI on various types of bio ash and bio ash concrete (task 3, 4, 5, 6 and 7) has started according to plans, and the results will be reported during 2007.

An evaluation of earlier (i.e. 2003-2005) AWS bio ash concrete production data has been reported by UNICON, see Appendix 4.

In 2006 approx. 850 t of AWS bio ash has been reused by UNICON for the production of approx. 12.000 m<sup>3</sup> of bio ash concrete.

UNICON is currently developing and testing many recipes for the production of AWS bio ash concrete, with focus on the relative amounts of cement, fly ash and bio ash. Bio ash seems to be more porous and water consuming than fly ash.

A satisfactory solution of the problem with the use of the LYNIS bio ash has not yet been achieved. Presently a project description is under preparation for small scale (e.g. quantities of approx. 50 kg) milling of LYNIS bio ash as a pre-treatment prior to the planned tests.

A MSDS has been prepared for AWS bio ash, see Appendix 5.

A stakeholder seminar was held the 5<sup>th</sup> of October 2006 at the Danish Technological Institute presenting 3 papers on the possible reuse of bio ash for concrete production as well as the BioCrete project.