

**WEACAU-III: International Workshop on
Environmental Aspects of Coal Ash Utilization**

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Coal ash utilisation over the world

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Abstract

Coal is a major fuel for energy and steam production in coal-fired power plants over the world. “Coal currently supplies around 30 % of primary energy and 41% of global electricity generation. Coal use is forecast to rise over 50% to 2030, with developing countries responsible for 97% of this increase, primarily to meet improved electrification rates.” (WCI, 2012)

Beside the use of coal in all parts of the world the most effective use of coal is forced by the authorities. Political decision regarding clean coal technology led to modifications in power plant technology and installations of de-NO_x and de-SO_x system, those regarding subsidization of national coal mining to increased use of imported coal, those to reduce CO₂ emissions to increased use of biomass and production by renewable systems (wind-, solar-, hydropower). Also emission limits are under consideration which may result in different product properties. New coal-fired power plants are designed to achieve higher efficiencies. After the nuclear accident in Fukushima in April 2011 the future of nuclear power in national energy plans was again discussed and led to different political decisions in the countries, e.g. the stop of nuclear power in Germany. On the other hand the energy blackout in India end of July 2012 signals that more coal power plants are necessary to serve the energy needs in India and other countries. And India – beside China - is one of the biggest ash producers worldwide.

In Europe (EU 27), more than 100 million tonnes of ashes are produced with the production of heat and steam in coal-fired power stations. The worldwide production is estimated to more than 800 million tonnes. The use of coal ashes has several environmental and technical benefits. The use has developed by the years in some countries and is mostly based on requirements of standards or other specifications which are subject to regular revision. The gathered experience is subject of regular exchange to increase the use of coal ash worldwide.

Depending on their properties, the CCPs are mainly utilised in the building material industry, in civil engineering, in road construction, for construction work in underground coal mining as well as for recultivation and restoration purposes in open cast mines. The majority of the CCPs is produced to meet certain requirements of standards or other specifications with respect to utilisation in certain areas. However, in many parts of the world the status of ashes is under discussion. This has different impact on the future use of ashes as construction materials. In Europe, the revised Waste Directive also defines “by-products” and “end-of-waste”. Such materials have to be registered according the REACH regulation. As the producers of CCPs consider their materials they have consequently registered their products. Parallel to that the European Construction Products Directive requires proper information on ER3 “Hygiene, health and Environment” in the revision of product standards and the CE marking of products. This is not new as environmental requirements also had to be

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met by existing regulations, but the procedures for unbound materials in Europe will be different.