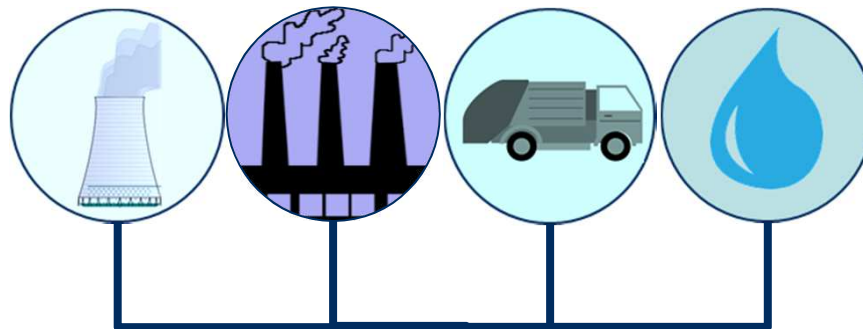


WASTE CODE OF PRACTICE

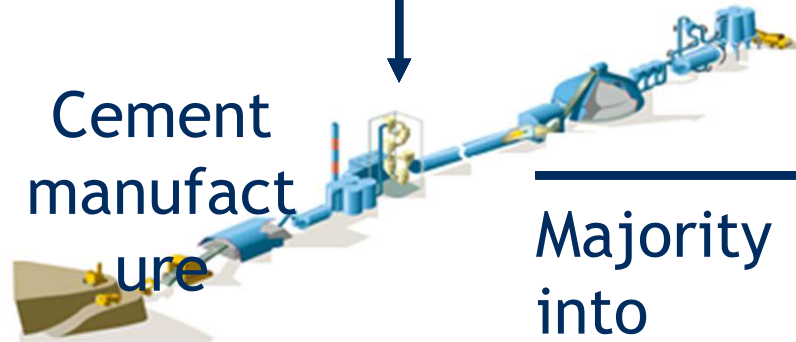
**Padeswood Liaison meeting
14 March 2016**

Cement Manufacturing and the Circular Economy

Resource efficient raw materials



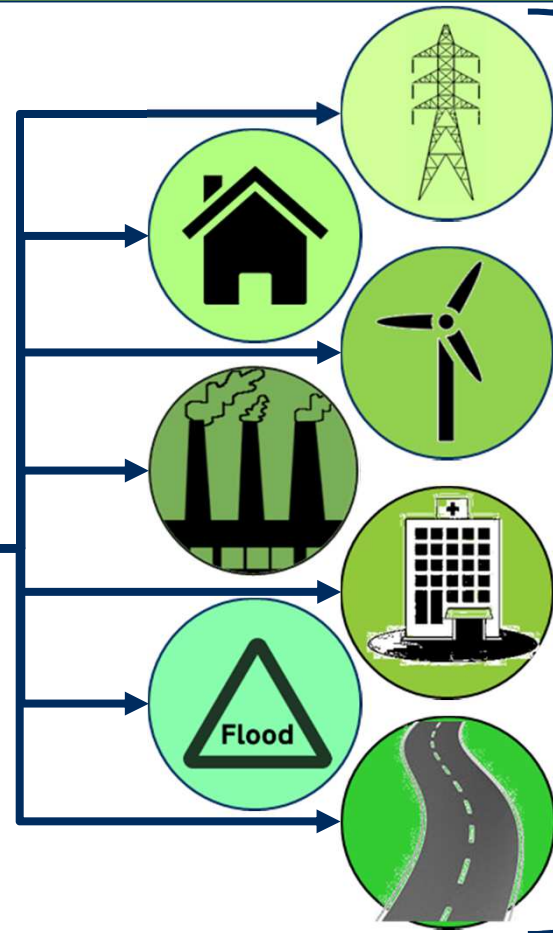
Cement
manufacture



Majority
into

- Adding value to end of life materials
- Recycling industrial wastes
- Recovering energy
- Recycling and harvesting water

Long lived built environment



- Low whole life impact
- High societal value

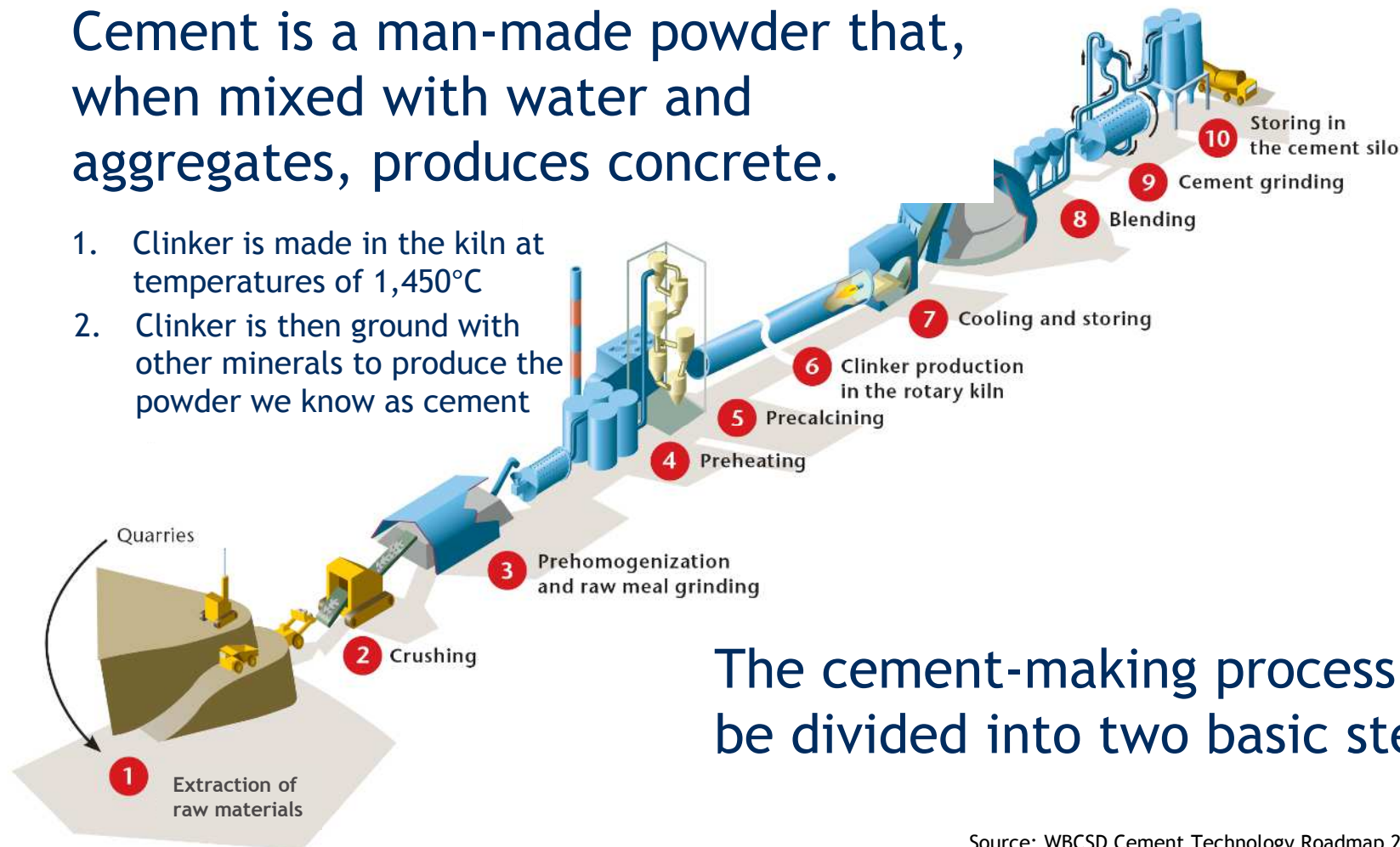


- 100% recyclable at end of life

Cement Basics: Cement manufacture at a glance

Cement is a man-made powder that, when mixed with water and aggregates, produces concrete.

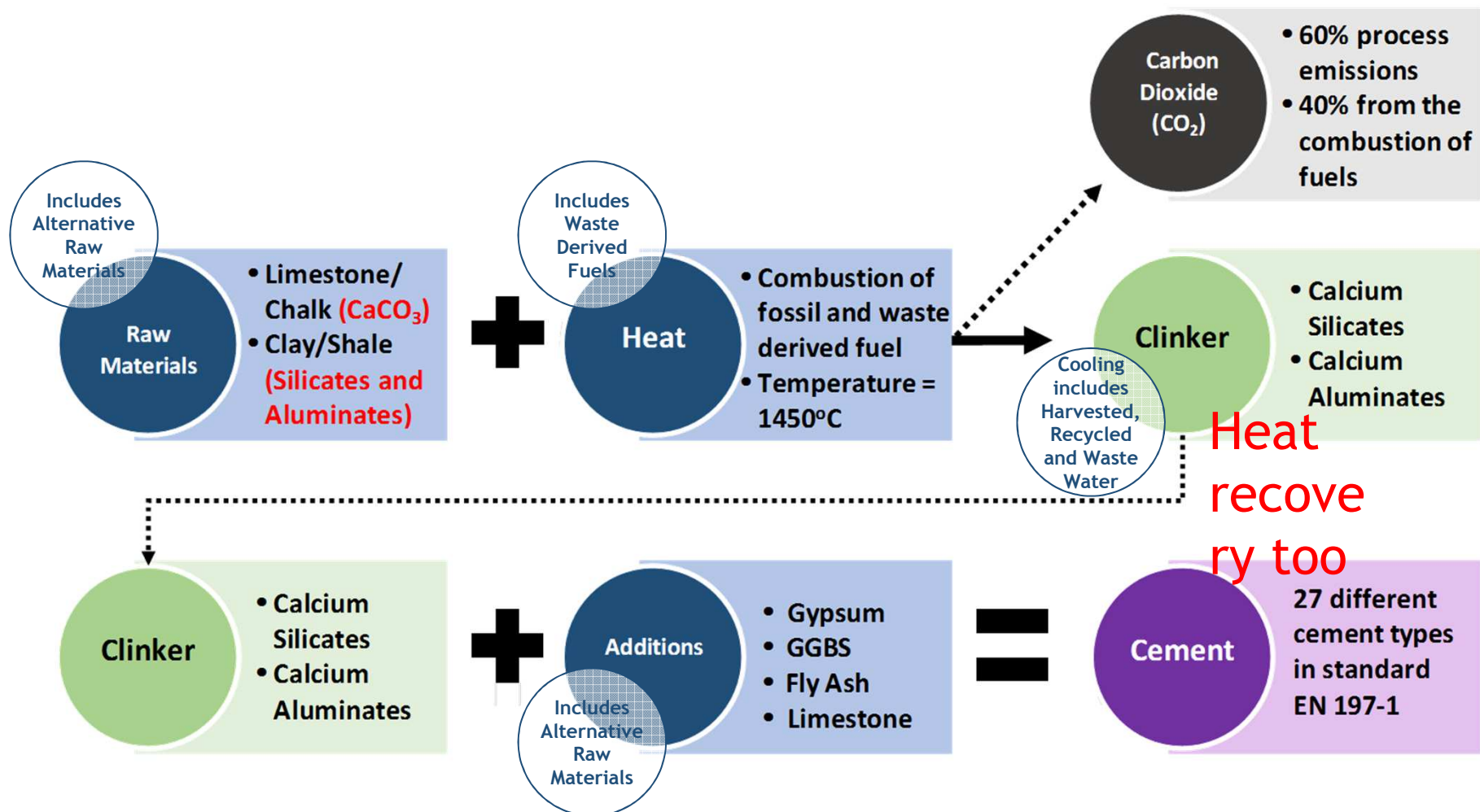
1. Clinker is made in the kiln at temperatures of 1,450°C
2. Clinker is then ground with other minerals to produce the powder we know as cement



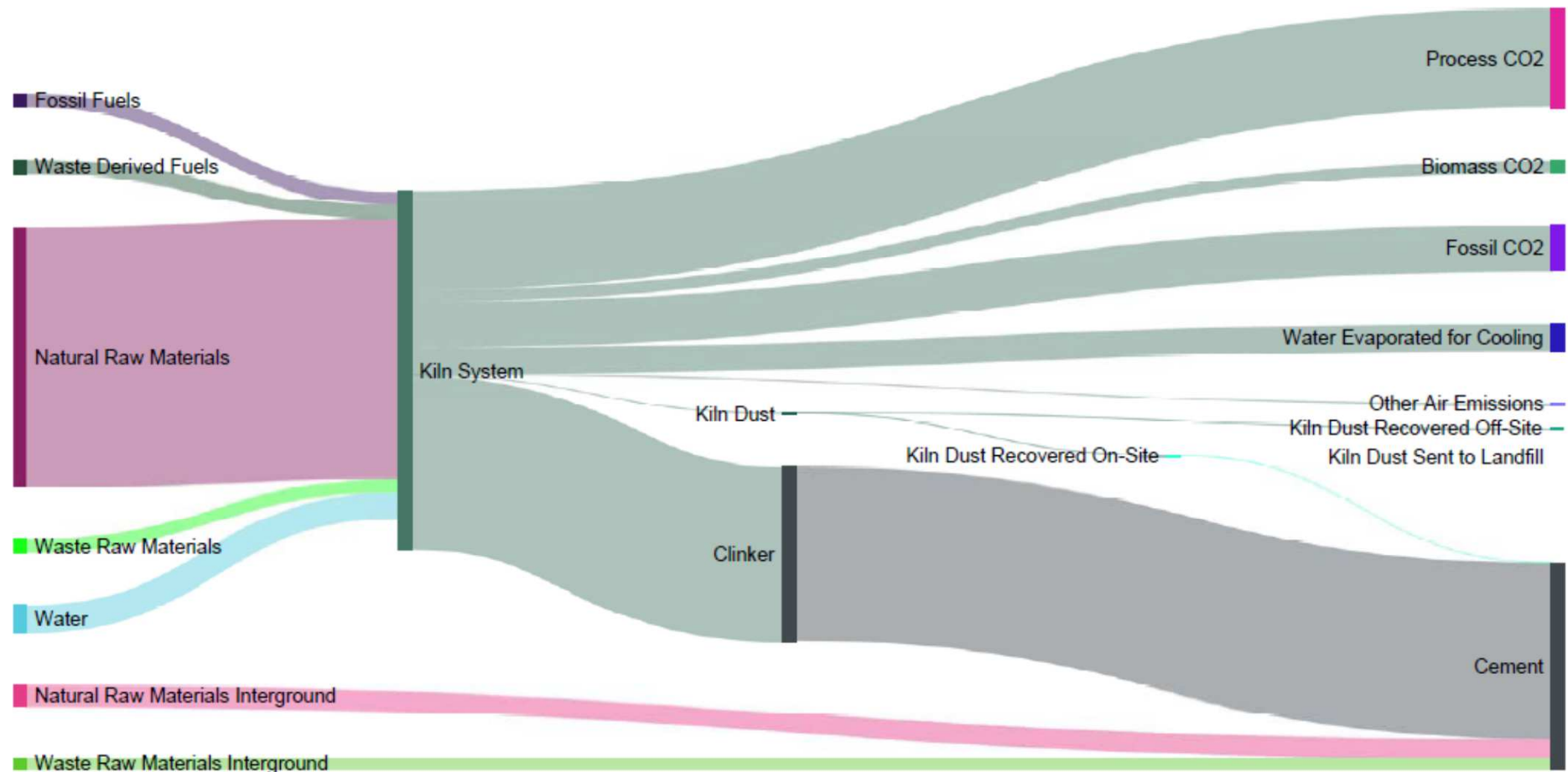
The cement-making process can be divided into two basic steps:

Source: WBCSD Cement Technology Roadmap 2009

Cement Basics: Cement chemistry



Cement Production 2014



Background - Code of Practice

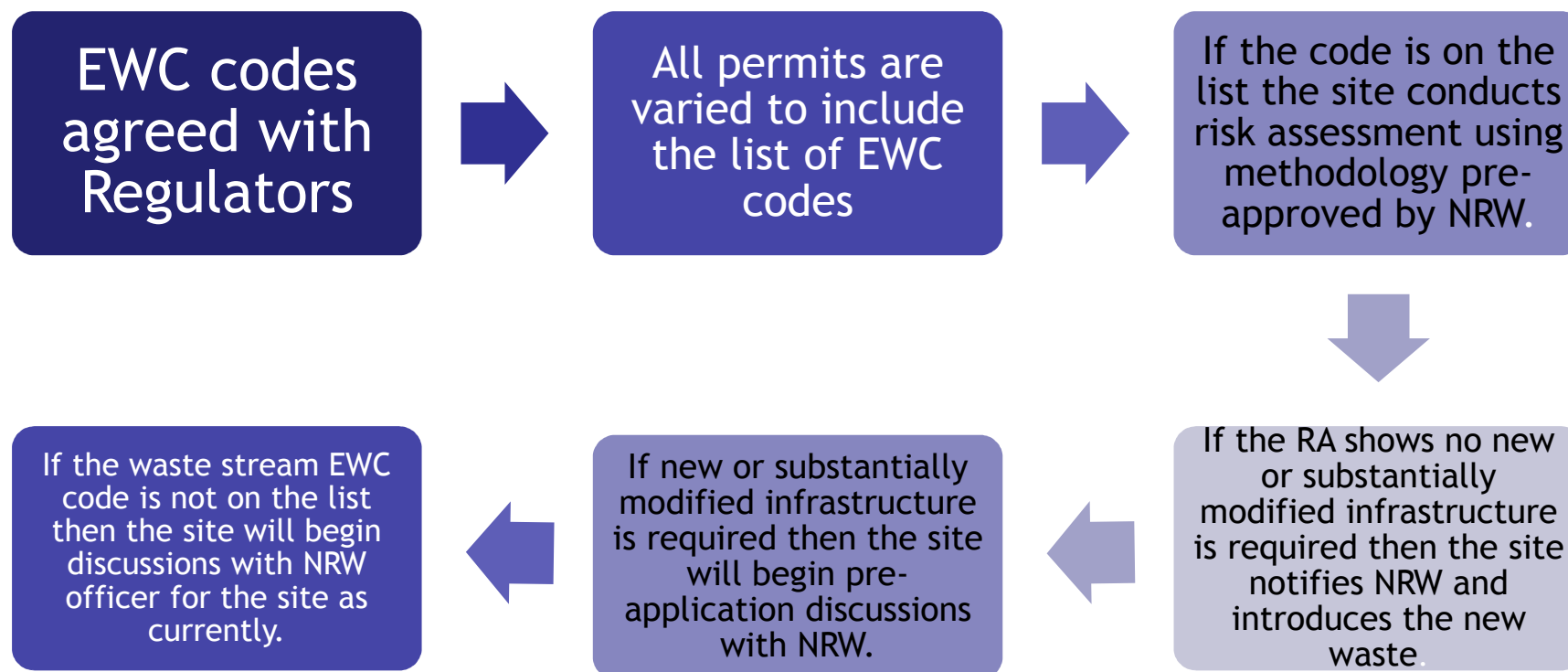
- MPA Cement our trade association agreed a code of Practice in 2013 with the UK Environmental regulators for the permitting of new alternative fuels and raw materials
- The process was slow and implemented in different ways across the country
- Some sites were able to make changes by exchange of letters others were required to make variation applications
- The cost of a variation could make the introduction of a new material uneconomic
- MPA and the regulators were both looking for consistency

Background

- The Cement Industry and regulators are both keen to increase the use of wastes as this has environmental benefits,
 - it reduces waste being disposed of in landfills,
 - it increases recycling
 - reduces the consumption of natural raw materials and fossil fuels
- The code of practice has been implemented at Hanson's Ribblesdale and Ketton plants and at most of our competitors plants
- The Code of Practice maintains the current high level of environmental protection and reduce the bureaucracy involved
- At Padeswood we have been using a hybrid of the CoP and the previous approach

How does the waste code of practice work?

A site wishes to introduce a new waste as fuel or raw material.



Introducing the Waste Code of Practice

- There is a legal requirement for all processes using wastes to have the wastes listed in their permits
- Hanson Cement will apply for a variation to the EPR permit which will include the agreed list of waste
- The variation application will include details of how each type of waste will be handled on site using existing or in some cases new equipment
- For example powders will be stored in silos, liquids in tanks and pumped to the kiln etc.

Introducing the Waste Code of Practice

- We would like your comments on the proposal so we can incorporate them in the variation application before it is submitted
- Once the application is submitted Natural Resources Wales will determine the application and vary the permit with any new conditions they consider appropriate.