

ENVIRONMENTAL
PRINCIPLES FOR
REGULATIONS AND
STANDARDIZATION
- COAL ASH

Rami Keren

Institute of Soil, Water and
Environmental Sciences
Volcani Center, ARO

THE ULTIMATE GOAL IS :

PROTECTING THE PUBLIC HEALTH
AND THE ENVIRONMENT IN ORDER
TO PRESERVE NATURAL RESOURCES
AND REDUCE THE NEED TO DISPOSE
OF CAOL ASH IN LANDFILLS

BENEFICIAL USES OF COAL ASH

- **BUILDING PRODUCTS**

Portland cement, Concrete, Masonry blocks

- **ROAD CONSTRUCTION**

- **FILLING APPLICATION**

- **AGRICULTURE**

- **RESTORATION OF ABANDONED OPEN MINES**

- **STOCKPILED FOR FUTURE UTILIZATION**

IMPACTS ON THE ENVIRONMENT

- GROUND WATER CONTAMINATION
- SOIL CONTAMINATION
- AIR POLLUTION
- IONIZING RADIATION
- PLANTS – TOXIC LEVELS IN YIELD

THERE IS A PRICE FOR NOT UTILIZING COAL ASH:

- DISPOSAL AT HIGH COST
- POLLUTION ON SITE
- USING MORE SAND AND CLAY
- INCREASING GREENHOUSE GAS EMISSIONS

REGULATIONS AND STANDADIZATIONS:

- **COAL ASH PROPERTIES**

- **MEDIUM PROPERTIES**

- **RELEVANT DETERMINATION METHODS**

There is a direct link between these methods and the coal ash category definition - hazardous, non-hazardous, etc.

THE PRINCIPALS

- Fly ash properties - aging , trapped silica and gases
- Microelements Dissolution mechanisms
- Interaction with the media – Soil, Water, Air
- Uptake by plants
- Using relevant determination methods (compliance test) – based on the beneficial use

ADDITIONAL POINTS FOR REGULATIONS

- Groundwater depth and quality
- Distance from water resources (wells, surface water)
- Groundwater flow direction
- Microelement concentration in groundwater - dilution factor

THANK YOU

