



MINISTERIO
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Ciemat
Centro de Investigaciones
Energéticas, Medioambientales
y Tecnológicas

EMRAS II

PRESENTATIONS OF SITE SPECIFIC DATA

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COMPOSTILLA II

Coal Fired Power Plant

Situation of the main coal-fired power plants in Spain











Installation main data:

● Commissioning:

● 1962 – 1972 → 3 groups

● 1980 – 1985 → 2 new groups

● 2009 situation: 4 groups working, 2 being converted into gas

● Electric power: 1200 electric MW

● Fuel: Coke; Local and imported bituminous coal and anthracite.

● Fuel consumption: $3.2 \cdot 10^9 \text{ kg a}^{-1}$

● Ashes production: 10^9 kg a^{-1} → 90% fly ashes

Gaseous emissions data:

● Height of the stacks:

● 1st (Groups II & III) → 270 m

● 2nd (Groups IV & V) → 290 m

● Diameter of the stacks:

● 1st: 8.4 m

● 2nd: 7.6 m

● Temperature of the flue gases: 72 – 160 °C.

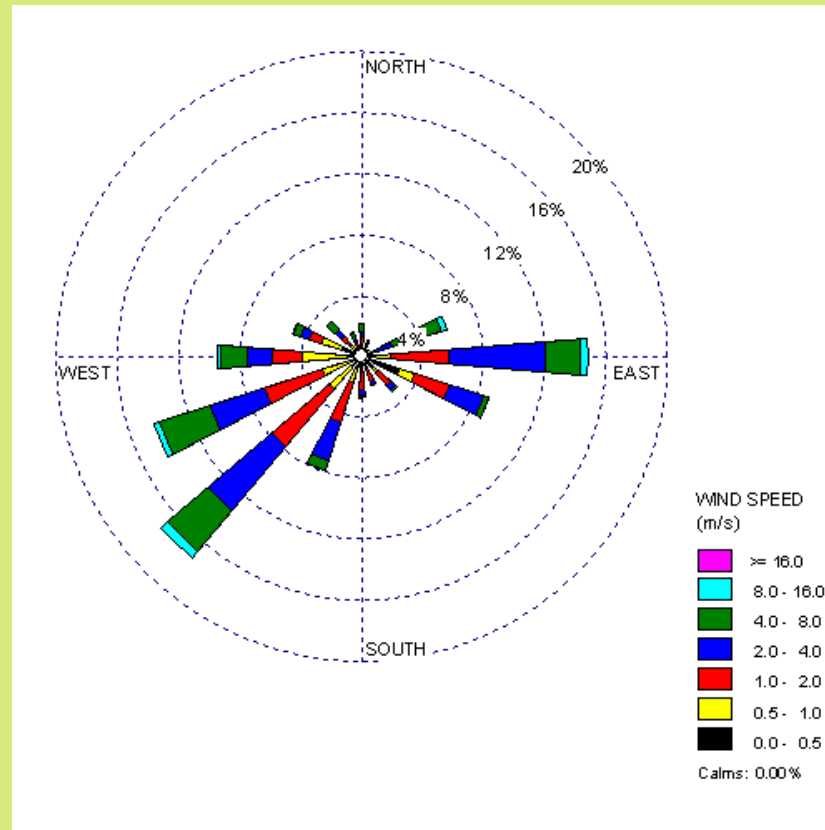
● Gas flow:

● 1st: $2.17 \cdot 10^6 \text{ m}^3 \text{ h}^{-1}$

● 2nd: $3.33 \cdot 10^6 \text{ m}^3 \text{ h}^{-1}$

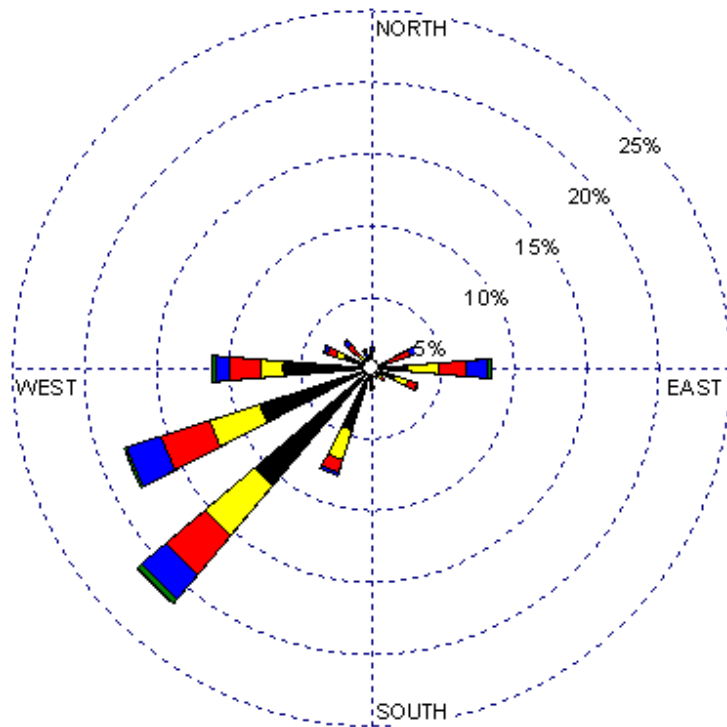
Meteorological data (available):

- Hourly data, at 3 different heights, for:
 - Temperature
 - Wind velocity
 - Wind direction



Wind rose at 60 m

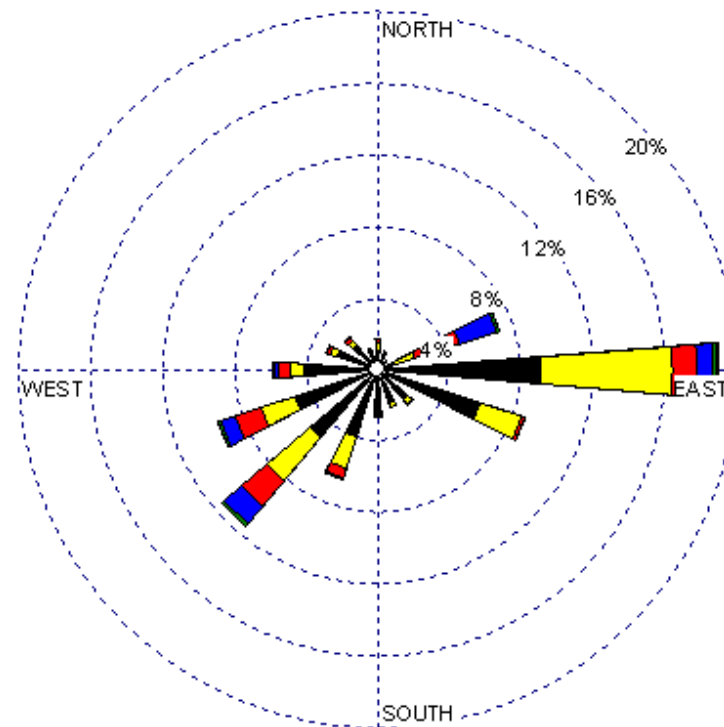
2 years data



WIND SPEED (m/s)

- ≥ 11.1
- 8.8 - 11.1
- 5.7 - 8.8
- 3.6 - 5.7
- 2.1 - 3.6
- 0.5 - 2.1

Calms: 11.62%



WIND SPEED (m/s)

- ≥ 11.1
- 8.8 - 11.1
- 5.7 - 8.8
- 3.6 - 5.7
- 2.1 - 3.6
- 0.5 - 2.1

Calms: 13.84%

Wind rose at 60 m: DAY

Wind rose at 60 m: NIGHT

Main populations:

● Ponferrada

● Direction SSE

● Distance: 7.6 km

● Population: 67 969 inhabitants

● Toreno

● Direction NNE

● Distance: 10.9 km

● Population: 3806 inhabitants

● Cubillos del Sil

● Direction NNE

● Distance: 1.4 km

● Population: 1656 inhabitants

Main populations:

- 🌐 Congosto

 - 🌐 Direction ENE

 - 🌐 Distance: 3.9 km

 - 🌐 Population: 1747 inhabitants

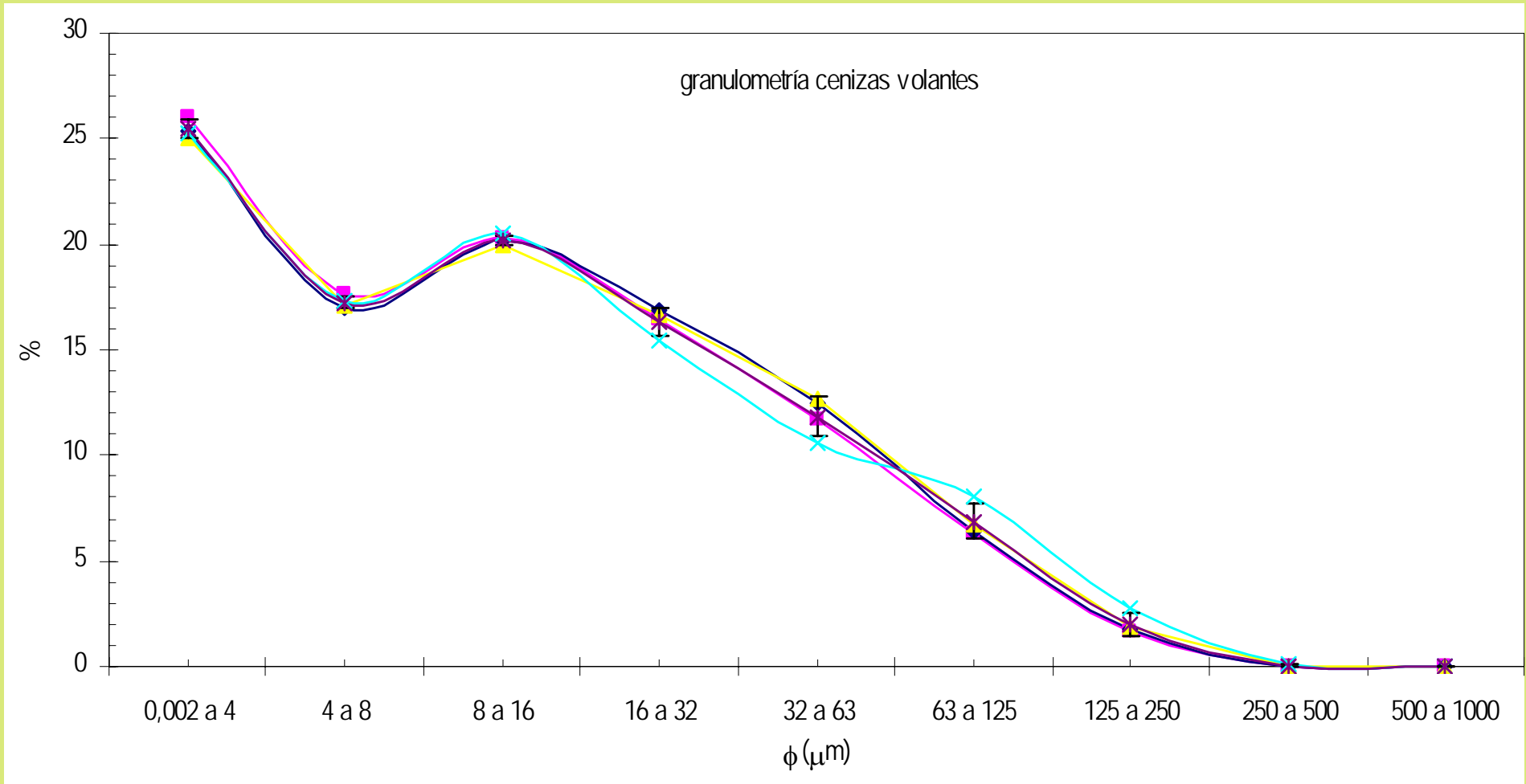
RELEASE FROM GROUPS II & III

	²³⁸ U		²²² Rn		²¹⁰ Po		²³² Th		²²⁰ Rn		²¹⁹ Rn		⁴⁰ K	
	μ	95%	μ	95%	μ	95%	μ	95%	μ	95%	μ	95%	μ	95%
Bq s ⁻¹	6·10 ⁻⁴	9·10 ⁻⁴	284	387	9·10 ⁻⁵	2·10 ⁻⁴	3·10 ⁻⁵	4·10 ⁻⁵	227	355	13	18	3·10 ⁻⁴	4·10 ⁻⁴

RELEASE FROM GROUPS IV & V

	^{238}U		^{222}Rn		^{210}Po		^{232}Th		^{220}Rn		^{219}Rn		^{40}K	
	μ	95%	μ	95%	μ	95%	μ	95%	μ	95%	μ	95%	μ	95%
Bq s^{-1}	$9 \cdot 10^{-4}$	$14 \cdot 10^{-4}$	738	1115	$1 \cdot 10^{-4}$	$3 \cdot 10^{-4}$	$4 \cdot 10^{-5}$	$7 \cdot 10^{-5}$	582	1050	34	51	$4 \cdot 10^{-4}$	$6 \cdot 10^{-4}$

SIZE OF FLY ASHES (COLLECTED)



Additionally available data for:

- Soil concentrations for 25 cm in the surface

- $H^*(10)$

- Aerosols concentrations

- ...

- Values in the surroundings does not give precious information, but they are available if necessary.

- Spanish habits and diet data available if necessary (not local)



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