



Air Quality Monitoring and Modelling

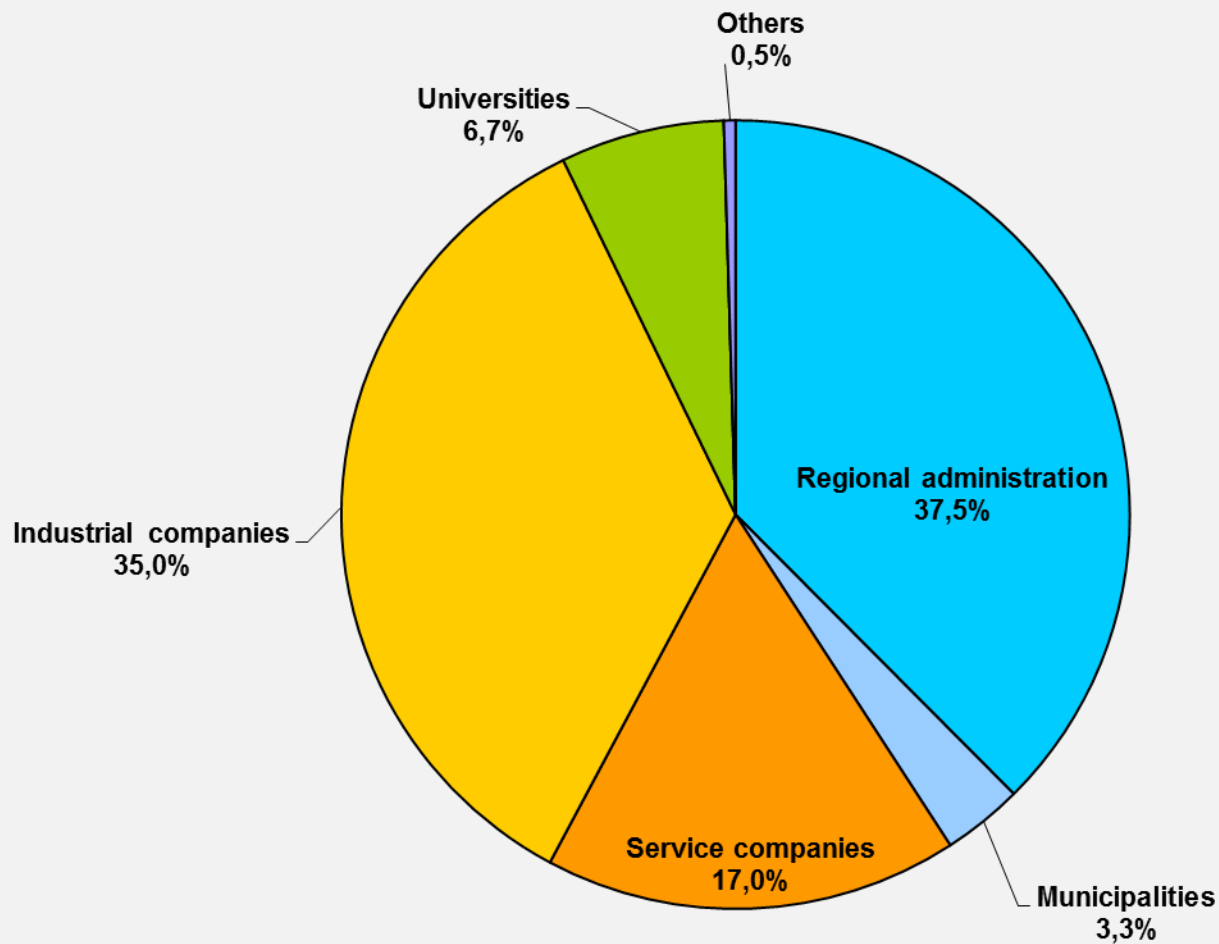
Turning Research into Products and Services

Carlos Borrego, Ana Margarida Costa, Miguel Coutinho

1993: foundation

15: staff

85: clients/year



1993: foundation

15: staff

85: clients/year

1.100.000: €/year

ISO 17025: lab accreditation

3 areas of activity

- Air Pollution
- Environmental Assessment
- Sustainable Development

CURRENT PROJECTS

Air quality monitoring



Air quality monitoring

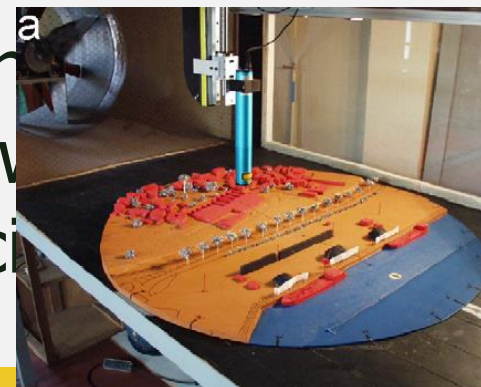
■ Airports

- Context:
 - Air quality performance
- Porto, Lisbon, Madeira, (Faro, Horta, Ponta Delgada)
- Mobile van

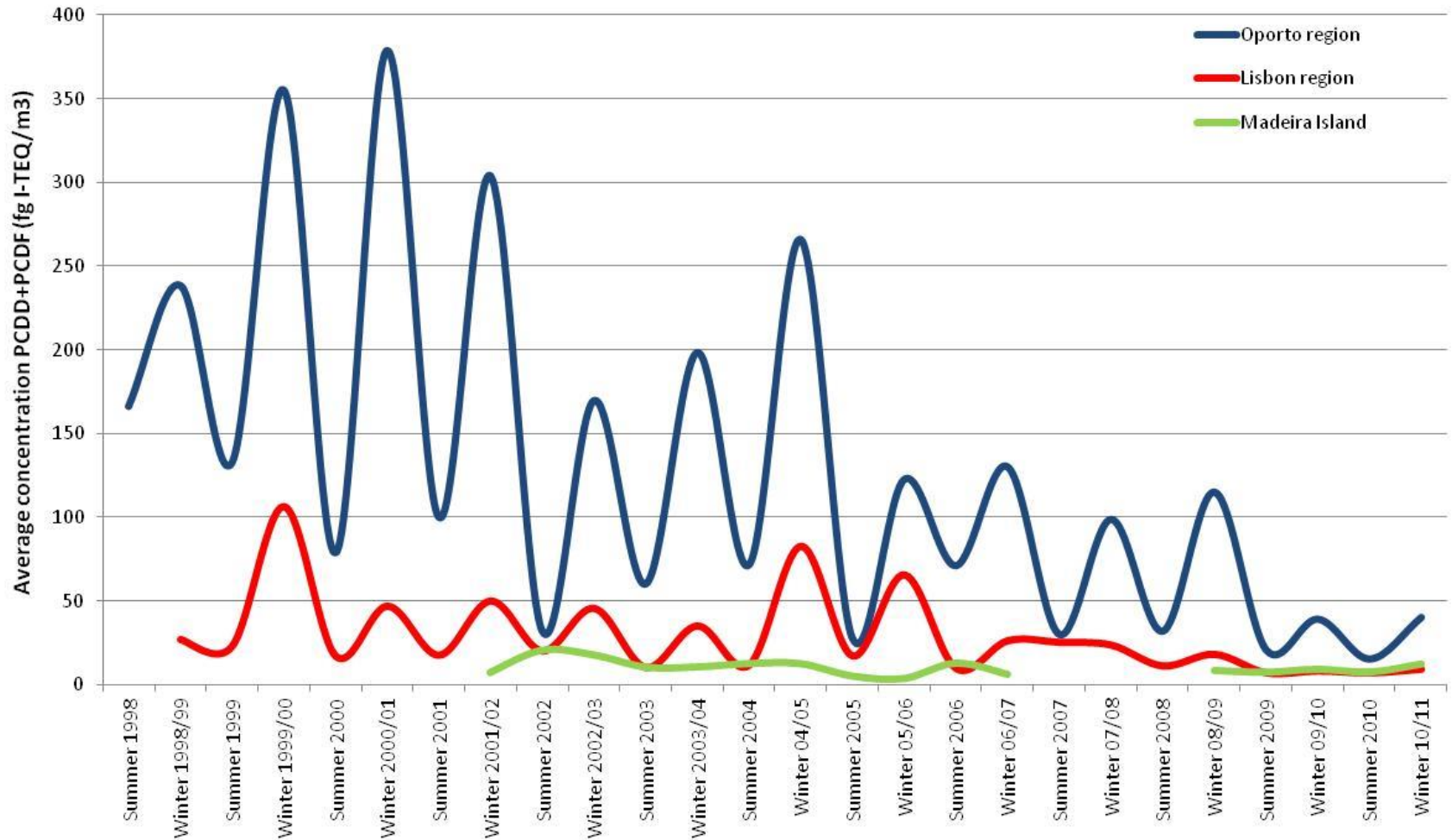
■ Port of Aveiro

- Context:
 - Petcoke pile dust emissions
- 2 mobile equipment
- + CFD modelling
- + wind tunnel

- Long term monitoring of wind factors



Atmospheric dioxin/furans levels



Air Pollution

- Design of the air quality monitoring network of Fortaleza, Brazil

Fortaleza, Brazil



Air Pollution

- Design of the air quality monitoring network of Fortaleza, Brazil
- Outcome of the TRANSFOR project
 - BRT (Bus Rapid Transit system)
 - In cooperation with the Federal University of Rio de Janeiro
 - Supported by the IDB



Environmental assessment

- Power plants
 - Sekondi Tekoradi power plant in Ghana

Ghana



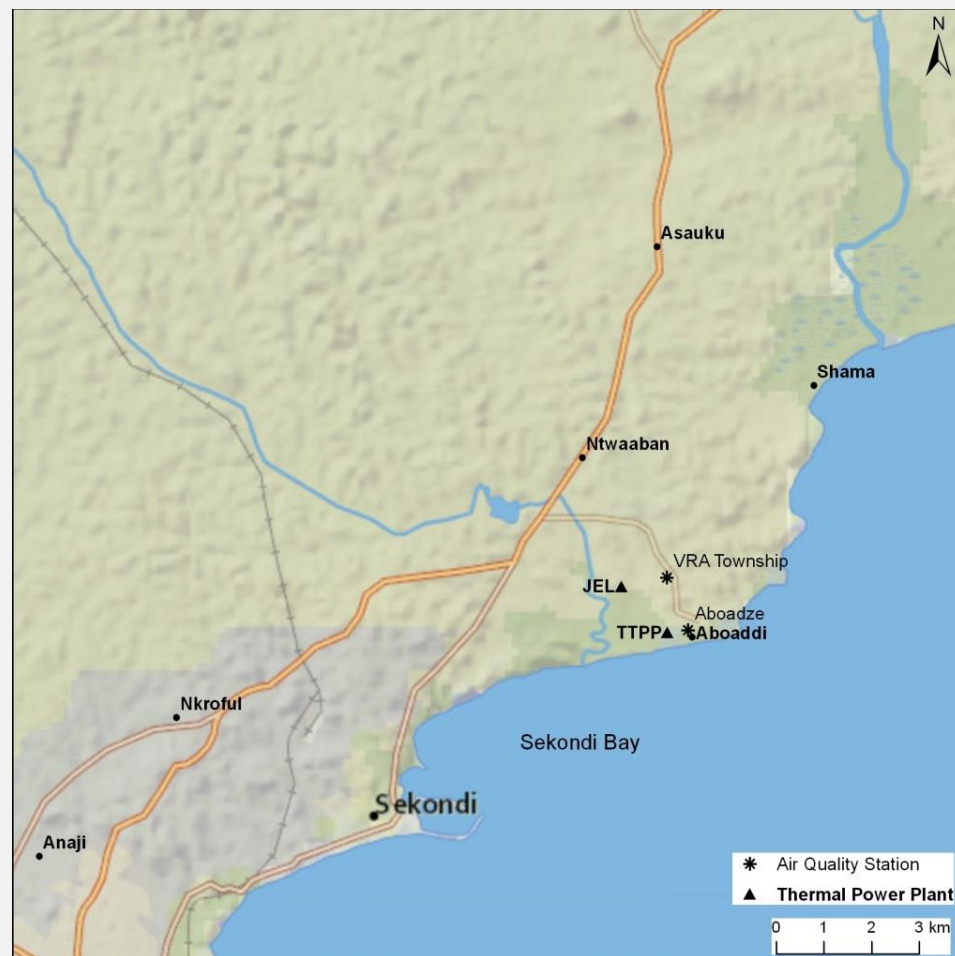
Environmental assessment

Atmospheric dispersion study of Jacobsen Electro Power project in Aboadze, Ghana

Objectives: Evaluate the air quality impacts of a power plant

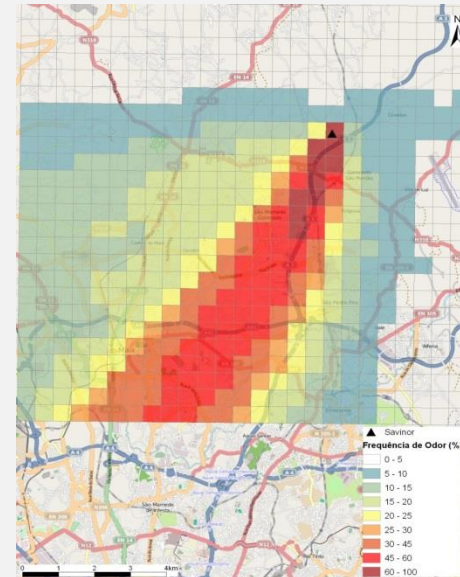
Location: Southwest coast of Ghana, approximately 15 km northeast of the twin cities of Sekondi and Takoradi

Report prepared for: International Power Company Limited



Environmental assessment

- Power plants
 - Sekondi Tekoradi power plant in Ghana
 - EIA guidelines for coal fired power plants in Pakistan
- Olfactometry
 - Emission sampling
 - Ambient air
 - Dispersion modelling



Environmental assessment

- EIA of a chemical plant (detergents) near Famalicão
- EA of the urban requalification plan of Aracaju, Brazil

Aracaju, Brazil



Environmental assessment

- EIA of a chemical plant (detergents) near Famalicão
- EA of the urban requalification plan of Aracaju, Brazil
 - BRT
 - Urban parks (social)
 - In cooperation with a Local consulting firm
 - IDB sponsored





Sustainable development

- Ex-ante evaluation of Portugal 2020
- Ex-ante evaluation and Strategic Environmental Assessment (SEA) of:
 - Operational Programme of Competitiveness and Internationalization
 - Regional Programme of Azores
 - Regional Programme of Madeira
- SEA of PERSU2020
 - National waste management plan
- Event Sustainability Management (at municipal level)



μ-sensors: what for?

- New monitoring services
 - Large area facilities
 - Urban, refineries, airports, ports,...
 - Dense 2D grid
 - Visualization, mapping
 - Identification of emissions hotspots
 - Concentration spatial profiling
- Data assimilation in modelling studies
 - Forecasting improvement
- New markets
 - Low cost of investment
 - Low maintenance

IF YOU DO
WHAT YOU'VE
ALWAYS DONE
YOU'LL GET
WHAT YOU'VE
ALWAYS GOTTEN

ANTHONY ROBBINS

OBRIGADO!
THANK YOU!