TÉCNICO LISBOA

QUESTE-SI

Quality System of S&T Universities for Sustainable Industry

External Audit Visit

QUESTE-SI

Education and Culture DG

Lifelong Learning Programme

IST, 22-23 Oct 2012

SELF-ASSESSMENT REPORT (SAR)

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1. METHODOLOGY
   - UNIT & PROGRAMMES
   - SELF-ASSESSMENT TEAM
   - TASKS & RESPONSABILITIES
   - SUSTAINABILITY DEFINITION
2. EVIDENCES
   - SRSE: ORGANIZATION &STRATEGY
   - IVENTORY: SRSE RELATED PROGRAMS, PROJECTS, …
   - DIMENSIONS & SELF-RATINGS

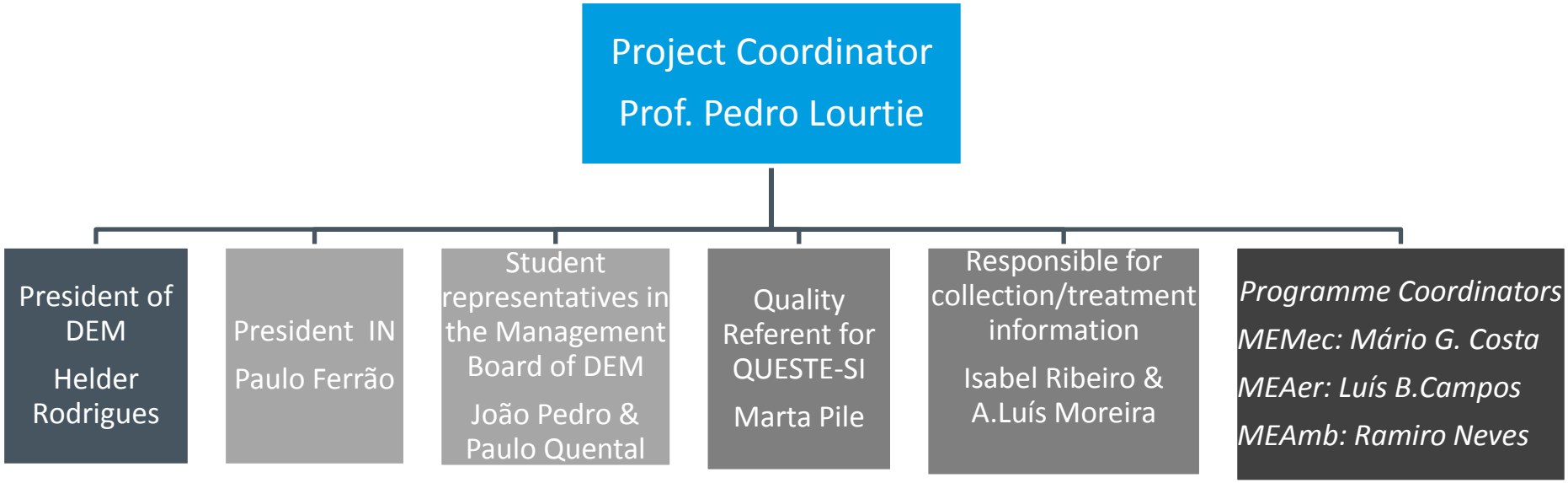
1. METHODOLOGY

- UNIT
  - Mechanical Engineering Department (DEM)

- PROGRAMMES
  - Integrated Master in Mechanical Engineering (MEMec)
  - Integrated Master in Aerospace Engineering (MEAer)
  - Integrated Master in Environmental Engineering (MEAmb)

1. METHODOLOGY

SELF-ASSESSMENT TEAM



2. METHODOLOGY

TASKS AND RESPONSIBILITIES

SELF-ASSESSMENT REPORT	RESPONSIBILITIES
1. Questions for Narrative Response	Self-Assessment Team
2. Institutional Iventory	Engª Isabel Ribeiro – Institutional Studies & Planning Office (AEP)
3. Collection/tratment information in the four Dimensions	Dimensions I & III - Engª Isabel Ribeiro (AEP) Dimensions II & IV – Prof. António L. Moreira (DEM & IN+)
4. Self Ratings in the four Dimensions	Self-Assessment Team

SUSTAINABLE EDUCATION

- *"Lifelong learning process that leads to an informed and involved citizenry having creative problem-solving skills, scientific and social literacy, and commitment to engage in responsible individual and cooperative actions, which will help optimize the impact of businesses through the introduction of new products, processes and business models and thus contributing to ensure an environmentally sound and economically prosperous future"*

2. EVIDENCES

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SRSE: ORGANIZATION

- **SRSE is widespread** in the objectives/contents of courses, research projects & academic theses

- **SRSE in specific courses & seminars on Innovation & Sustainable Development**

- **SRSE Departments Subunits**
  - DEM: Environment & Energy, Thermofluids & Energy Conversion Technologies
  - DECivil: Hydraulics & Water/Environmental Resources, Urban Planning, Transportation and Systems
  - DEEC: Energy

- **SRSE research**
  - IN+ Centre for Innovation, Technology and Policy Research
  - MARETEC Marine Environment & Technology Center
  - IDMEC Institute of Mechanical Engineering

  Programs at Ph.D. and Master level

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SRSE: STRATEGY

- Focus on **Financial Sustainability**
  Self-sustainability and autonomy

- **Environmental & Social Strategy**
  energy & environmental sustainability
  working conditions of the academic community/life quality on campus

- **Link to society**
  Strategic cooperation
  Networking & partnerships
  Stimulating students entrepreneurship & Career development
  Supports students' associations & groups
  Technology Transfer Office

- **SRSE in Central services**
  University social work services
  Emergency social allowance
  Student support unit
  Mentoring Program
  Tutoring Program
  Monitoring studies
  Senior University

2. EVIDENCES

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IVENTORY: SRSE RELATED PROGRAMS

MASTER DEGREES

Environmental Engineering
Mechanical Engineering
Materials Engineering
Mining and Geological Engineering
Urban Studies and Territorial Management
Engineering and Water Management
Transport Planning and Operations

PHD PROGRAM

Environmental Engineering
Climate Change and Sustainable Development Policies
Earth Resources
River Restoration and Management
Sustainable Energy Systems
Leaders for Technical Industries

ADVANCED FORMATION DIPLOMAS

Sustainable Energy Systems
Risks Assessment, Safety and Reliability
Technology Management Enterprise

CONTINUOUS TRAINNING

Selection of Products & Sustain. Materials
Costs in Life Cycle & Sustain. Rehabilitation
Recent Developments in the Application of Sustain. Recycled Aggregates in Transport Infrastructure
The Environmental Liability of Municipalities & Industrial Units
Sustainable Solutions for Water Supply
Pratical Course of Sustainable Construction

2. EVIDENCES

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IVENTORY: SRSE RELATED CONCENTRATIONS & ELECTIVE OPTIONS

PROFILES

Environmental Engineering: Environmental Technologies / Environmental Management

Civil Engineering: Hydraulic & Water Resources / Urban Planning, Transportation and Systems

Mechanical Engineering: Energy

COURSES

Biofuels
Biomimicry
Construction, Quality, Safety & Environment
Ecological Economics
Environmental Economics
Energy Management
Environmental Geotechnics
Environmental Impacts
Green Technologies and Strategic Manag.
Industrial Ecology
Innovation and Sustainable Development
Land Use Planning
Renewable Energies
Seminars on Sustainable Development
Strategic Environmental Assessment
Urban Mobility Management
Urban Planning

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IVENTORY: SRSE RELATED PROJECTS

NON-CURRICULAR ACTIVITY

Innovation AWARD 2011 – MSc Students project "Concrete with rubber from used tires"

NASA AWARD 2011 on environment and energy alternative – PhD Student Lecture "Planning the transition to sustainable energy systems: the Green Islands project in the Azores"

PRIZE REN (Energy Networks Portugal) 2010 – Student project on electric grid and power systems and natural gas

MSc DISSERTATIONS

DEMAND side management strategies for the residential sector

DESIGN for a sustainable energy system for Corvo island

OPTIMIZATION System for Collection & Transportation of Municipal Solid Waste

Factors of New High-Tech Products Adoption: Consumer Behaviour & the Electric Vehicle

DESIGN & Planning of Sustainable Supply Chains

A MULTI-PRODUCT, multi-depot vehicle routing problem in reverse logistics systems

COORDINATION in Collaborative Humanitarian Aid Supply Chains: the path for success

2. EVIDENCES

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DIMENSION 1-INSTITUTION

STATED COMMITMENT TO SRSE

UTL Mission & lines of action
UTL Charter of Rights & Warranties
UTL Integrated Quality Management System
IST Strategic Plan

SRSE TASK FORCES

IST Platform of Environment
IST Platform of Energy
IST Partner of EIT - KIC Innoenergy
IST member SEEP (Sino-European Engineering Education Platform)
IST Research Units on Energy, Environment & Mobility (17)

SRSE INSTITUTIONAL PROJECTS

IST Sustainable Campus
NET ZERO Energy School
Observatory for Corporate Sustainability
Protocol on Environmental Responsability
EXTENSITY: Environmental Management Systems and Sustain. Agriculture Extensive
LIDER A: sustainable construction
TO SHARE IN UTL: social project

SRSE SUPPORT

IST Press (edition of SRSE related books)
Congress Center (support SRSE events)
Awards of Merit to Students
Teachers & Students Social Support (accomodation, health, grants, …)
Tutoring & Mentoring Programs
Senior University

2. EVIDENCES

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DIMENSION 2-EDUCATION & CURRICULUM

ENVIRONMENTAL ENGINEERING

Minimizing environmental impacts of anthropogenic activities during the whole life cycle of products

Ecology, Biotechnology, Energy & Environment, Impact Assessment, Environ. Law & Sociology, Environ. Modelling, Environ. Policies, Experimental Methods in Energy & Environ., Groundwater Pollution & Protection, Management of Human Mobility, Natural & Technological Risk Assessment, Ocean & Atmospheric Physics, Renewable Energies

MECHANICAL ENGINEERING

Providing society with professionals skilled with the understanding of the complex, multidimensional challenges associated with sustainable energy, climate change mitigation and climate adaptation

Advanced Heat Transfer, Air-Conditioning in Buildings, Energy in Transports, Energy Management, Industrial Ecology, Industrial Safety, Innovation and Sustainable Development, Product Development and Entrepreneurship, Project Management, Renewable Energies, Thermal Equipments

AEROSPACE ENGINEERING

Preparing engineers for all stages of the lyfe-cicle of aerospace vehicles, including subjects on earth environment (emissions and noise), space environment, safety, capacity and punctuality of air transport, production, maintenance and operational costs relating to fuel consumption, material usage and overall efficiency (Emissions, Space Environment, Air Traffic Management, …)

2. EVIDENCES

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DIMENSION 3-STUDENT INVOLVEMENT

STUDENT AWARENESS

TV Programs: TVENERGIA, SÓ ENERGIA
E-learning tool: AQUA-RET
Scholarships research: GALP 20-20-20
Club: MIT Portugal Energy Club
Event: E3-Education, Employ. & Entrepren.
Organized visits: INDUSTRIES & other facilities
Summer Course: GENERATION for Sustainable Development

DIALOGUE WITH INDUSTRY

IST Technology Transfer Office (Business Partnerships, Innovation & Entrepreneurship, Intellectual Property, & Career Development)
IST Career Week & Workshops
Surveys to Employers

SUPPORTING GRADUATES

IST Employability Observatory
Tracking Graduates Professional Progress (1st, 2nd & 3rd cycles)
Job Bank
Alumni Project (Alumni Website & Portal, Contact Network, Alumni testimonials, Sport & Cultural Events, …)

SRSE ACTIVITIES

IST Students Section of Ecology
IST Formula Student Team
JUNITEC (Project community Technol. Center & Waste Materials & Services Stock Exchange)
Project Shell Eco Marathon
Rural Value Game & Cityon Game
Alliance for Road Safety

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DIMENSION 4-RESEARCH AND INOVATION

IN+ RESEARCH CENTER

RESEARCH AREAS INCLUDE:

Thermodynamics, Sustainable Mobility, Industrial Ecology and Ecological Economics, Energy and Economic Growth, Extractive Metallurgy and Recycling, Combustion and Energy Systems, Liquid Atomization and Sprays Systems

R&D Projects

RESIST (Supporting urban resistance through the management of urban stock resources)
PME INTELIGENTE (Promoting Efficiency in Electricity Consumption)
HANDBOOK of Good Practices for Sustainable Mobility
WAVE Energy Centre
SUSTAINABLE Energy in Madeira
ENNEREG (sustainable use of energy)
SMART GALP (smart equipment of gas and electricity consumption)
GREEN Islands Project (new energy planning for Azores)
PORTONOVO (water quality of ports)

2. EVIDENCES

IST/DEM COMMITMENT TO SRSE

- Enough evidences to consider there is a strategy towards SRSE
- Although that strategy can not be clearly expressed in a documented and organized way
- This exercise contributed significantly to that perception

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Thank you!

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