



# WiN Global 2008 Annual Meeting

26-30 May 2008

## Nuclear Revival : Maintaining Key Competencies



### Panel: Which Competencies for Engineering Conception and R&D needs

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*Infrastructures Development- New Energy Engineering  
Education and Research Programs*

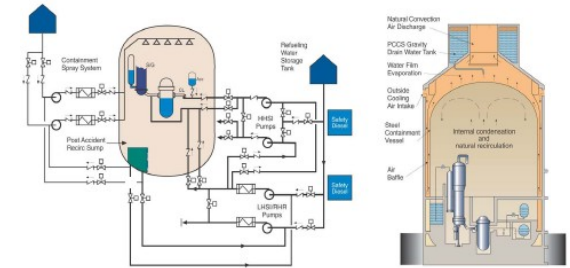
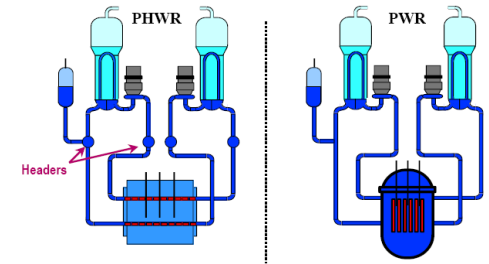
*Pr Oum Keltoum BOUHELAL,*

*ENIM, Rabat, Morocco*

# Power Supply Planning

2015: > 600MW

NPPs Future Deployment  
Good Approach



TECHNOLOGY

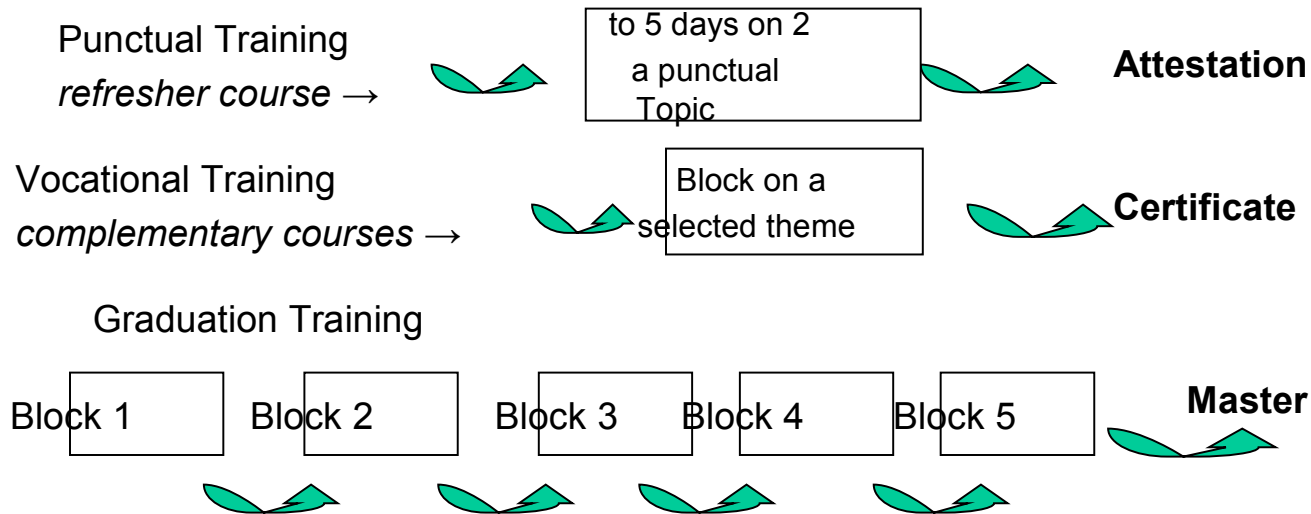
ECONOMICS

ENVIRONMENT & SOCIETY

RISKS

<p><b>MULTIDISCIPLINARY FIELDS</b> GOOD QUALITY SKILLS</p>	<p><b>OPPORTUNITY</b> NEW HIGH EDUCATION PROGRAMS</p>
<p><b>OBJECTIVE</b> HIGH LEVEL DEGREES</p>	<p><b>MARKETING STUDY</b> INDUSTRY STANDARDS PARTNERSHIPS</p>

**business oriented disciplines**



**valuable source of skills, enhancing infrastructures for the expansion of the national power system**

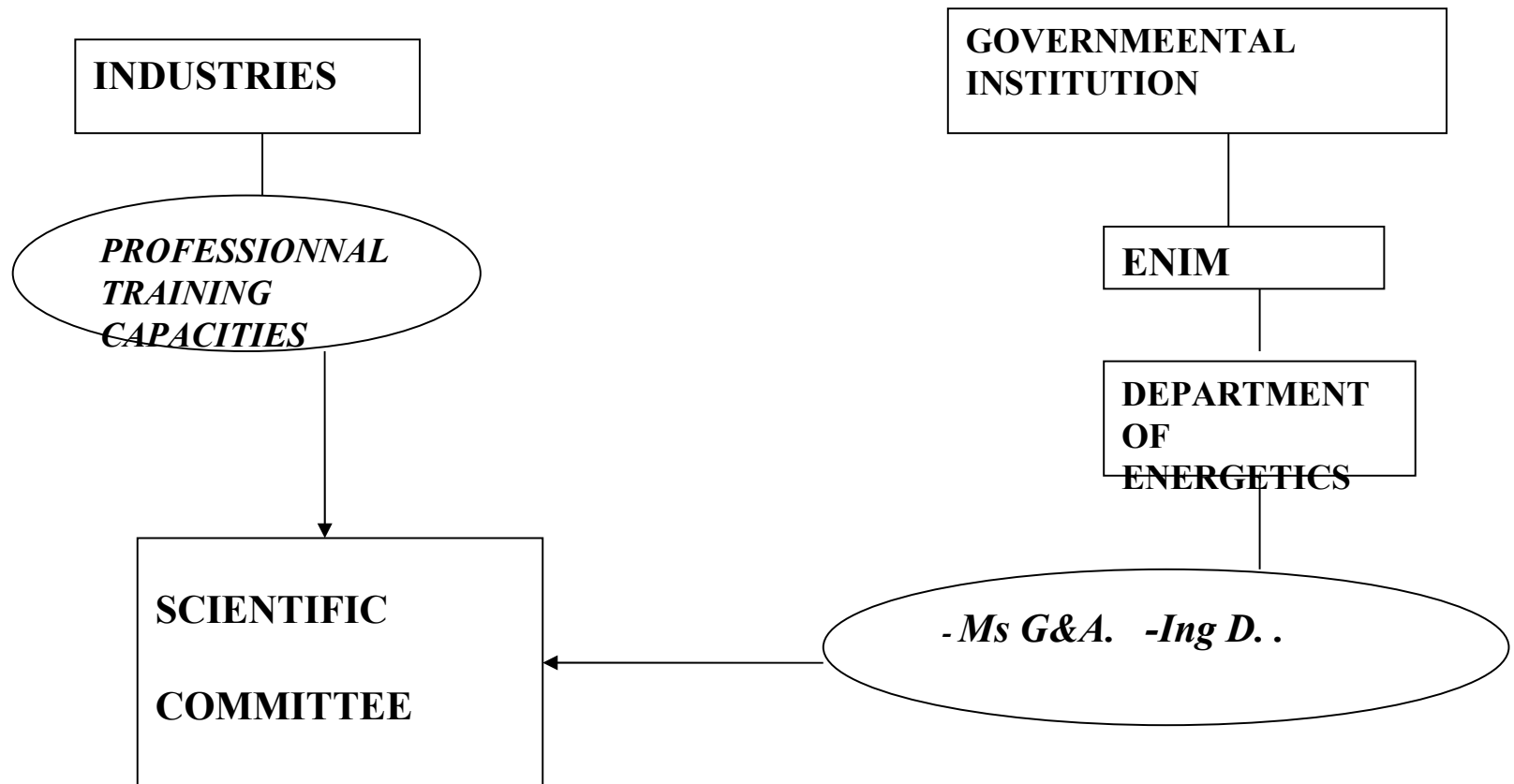
## Ms Degree

### Wide Range of Topics Ensure Availability of human resources

<b>Block</b>	<b>Module</b>
<b>B1 Energetic Audit</b>	Energy Accounting, Metrology Qualification, Certification, Norms and Standards Corporation Management Table Diagnostic Of Electricity Quality Methodology Guides
<b>B2 Progress Direction</b>	Innovative tools in thermals and thermodynamics Innovative technologies and improvement relationships New management modelling National rules, environmental impact Deregulation
<b>B3 Best Techno-logies Choice</b>	Generation power curves Availability and production factors curves Energy efficiency alternatives and costs involved
<b>B4 “Purchasing “ Determinants of Energy Price</b>	Energy purchase: tarification; choice criteria of suppliers Energetic Services Purchasing (ESCO) Energetic resources evolution International context of the energy environment
<b>B5 Projects Management</b>	Economic evaluation and calculation Project financing Consultation files International financing

***Means to implement competency profile  
in consultation with the energy /industry sector,***

**Attractive and positive answer**



**BLOCK I**

**Mathematics For Engineering**

Applied Mathematics  
Finance – Mathematics

**BLOCK II**

**Demand-Side Management and Forecast**

Energy Sectors and Activities – Energy Accounting  
Energy Balance - Energy Efficiency

**Energy Commodities Market**

International Markets - Deregulation  
Demand & Supply Mechanisms - Pricing  
Norms and Environmental Impact

**Energy Markets Applied to CDM**

International Carbon Market  
Value of Energy Efficiency - CDM Projects

**BLOCK III**

**Nuclear Power and Innovations**

Physical Concepts - Nuclear Fuel Cycle - Reactors Codes & Calculations

**Renewable Energy** Solar - Wind Power – Hydro

**Fossil Energy Technologies**

Coal - Natural Gas- Fuel Oil

Clean Technologies

**Comparative Analysis Of Power Production Projects**

*Costs Methodology & Assessment - Externalities*

*Modélisation Tools - Multicriteria Analysis for Energy Choices*