

## **DESIGNERS**

### **DAY 1**

#### **CLIMATOLOGY**

- Solar Radiation (monthly and daily values, tilt and azimuth angles)
- Air temperature

#### **SOLAR COLLECTORS**

- Different Typologies of collectors (Flat collectors, Flat CPC collectors, Vacuum direct flow, collectors, Vacuum heat pipe collectors, Vacuum direct flow CPC collectors, Vacuum heat pipe CPC collectors)
- Performances of different collectors (effect of solar radiation, effect of difference between temperature of panel and air temperature)
- Characteristics of territorial market, local availability of the technologic equipments
- How to read technical/commercial brochures
- Voices of cost (production, purchase, installation, maintenance, durability)

### **DAY 2**

#### **CHILLERS SYSTEMS**

- Definitions, functioning principles
- Different Typologies of Chillers (single/double effect)
- Range of temperatures of work
- Performances of different chillers systems
- Characteristics of territorial market, local availability of the technologic equipments
- How to read technical/commercial brochures
- Voices of cost (production, purchase, installation, maintenance, durability)

### **DAY 3**

#### **THE BUILDING**

- Thermal behaviour of buildings (walls, windows, energy demand for heating/cooling, heat and mass flow...)
- Basic data for design

#### **NORMATIVE MATTERS**

- National and regional nomatives
- Local legal prescriptions
- Bureaucratic procedures

#### **PLANT DESIGN**

- Different layouts: solar thermal panels and chillers
- Different layouts: cooling plant-building

### **DAY 4**

#### **ECONOMICAL MATTERS**

- Methodologies of cost evaluation
- Access to financial loans, possibility of ESCO involvement
- Supply contracts (TPF, result assurance...)

#### **CASE-STUDIES**

### **DAY 5**

#### **PRACTICAL WORKSHOP**

#### **FINAL TEST OF KNOWLEDGE**

## **INSTALLATION AND MAINTENANCE FIRMS**

### **DAY 1**

#### **CLIMATOLOGY**

- Solar Radiation (monthly and daily values, tilt and azimuth angles)
- Air temperature

#### **SOLAR COLLECTORS**

- Different Typologies of collectors (Flat collectors, Flat CPC collectors, Vacuum direct flow, collectors, Vacuum heat pipe collectors, Vacuum direct flow CPC collectors, Vacuum heat pipe CPC collectors)
- Performances of different collectors
- Maintenance of different collectors
- Characteristics of territorial market, local availability of the technologic equipments
- How to read technical/commercial brochures

### **DAY 2**

#### **CHILLERS SYSTEMS**

- Definitions, functioning principles
- Different Typologies of Chillers (single/double effect)
- Range of temperatures of work
- Performances of different chillers systems
- Maintenance of different chillers systems
- Characteristics of territorial market, local availability of the technologic equipments
- How to read technical/commercial brochures

### **DAY 3**

#### **CHOICE OF PLANT LAYOUT**

- Different layouts: solar thermal panels and chillers
- Different layouts: cooling plant-building
- Maintenance of different layouts

#### **NORMATIVE MATTERS**

- National and regional nomatives
- Local legal prescriptions
- Bureaucratic procedures

#### **ECONOMICAL MATTERS**

- Methodologies of cost evaluation
- Access to financial loans, possibility of ESCO involvement
- Case-studies

## **PUBLIC POTENTIAL USERS**

### **DAY 1**

#### **THE BUILDING**

- Thermal behaviour of buildings (walls, windows, energy demand for heating/cooling, heat and mass flow...)
- Basic data for design

#### **CHILLERS SYSTEMS**

- Definitions, functioning principles
- Different Typologies of Chillers (single/double effect)
- Range of temperatures of work
- Performances of different chillers systems
- Characteristics of territorial market, local availability of the technologic equipments
- How to read technical/commercial brochures
- Voices of cost (production, purchase, installation, maintenance, durability)

### **DAY 2**

#### **CLIMATOLOGY**

- Solar Radiation (monthly and daily values, tilt and azimuth angles)
- Air temperature

#### **SOLAR COLLECTORS**

- Different Typologies of collectors (Flat collectors, CPC collectors, Vacuum collectors)
- Performances of different collectors (effect of solar radiation, effect of difference between temperature of panel and air temperature)
- Characteristics of territorial market, local availability of the technologic equipments
- How to read technical/commercial brochures
- Voices of cost (production, purchase, installation, maintenance, durability)

### **DAY 3**

#### **NORMATIVE MATTERS**

- National and regional nomatives
- Local legal prescriptions
- Bureaucratic procedures

#### **ECONOMICAL MATTERS**

- Methodologies of cost evaluation
- Access to financial loans, possibility of ESCO involvement
- Supply contracts (TPF, result assurance...)

### **DAY 4**

#### **CHOICE OF PLANT LAYOUT**

- Different layouts: solar thermal panels and chillers
- Different layouts: cooling plant-building
- Maintenance of different layouts

#### **CASE-STUDIES**

### **DAY 5**

#### **PRACTICAL WORKSHOP**

## **PRIVATE POTENTIAL USERS**

### **DAY 1**

#### **THE BUILDING**

- Thermal behaviour of buildings (walls, windows, energy demand for heating/cooling, heat and mass flow...)
- Basic data for design

#### **CLIMATOLOGY**

- Solar Radiation (monthly and daily values, tilt and azimuth angles)
- Air temperature

#### **SOLAR COLLECTORS & CHILLERS SYSTEMS**

- Different Typologies of collectors (Flat/CPC/Vacuum collectors)
- Performances and Maintenance of different collectors
- Definitions, functioning principles
- Different Typologies of Chillers (single/double effect)
- Range of temperatures of work
- Performances of different chillers systems
- Characteristics of territorial market, local availability of the technologic equipments
- Voices of cost (production, purchase, installation, maintenance, durability)

### **DAY 2**

#### **CASE-STUDIES**

#### **NORMATIVE MATTERS**

- National and regional nomatives
- Local legal prescriptions
- Bureaucratic procedures

#### **ECONOMICAL MATTERS**

- Methodologies of cost evaluation
- Access to financial loans, possibility of ESCO involvement
- Supply contracts (TPF, result assurance...)

#### **CHOICE OF PLANT LAYOUT**

- Different layouts: solar thermal panels and chillers
- Different layouts: cooling plant-building
- Maintenance of different layouts