NTPC's DETAILED PROPOSAL FOR CAPACITY BUILDING

A Maharatna Company

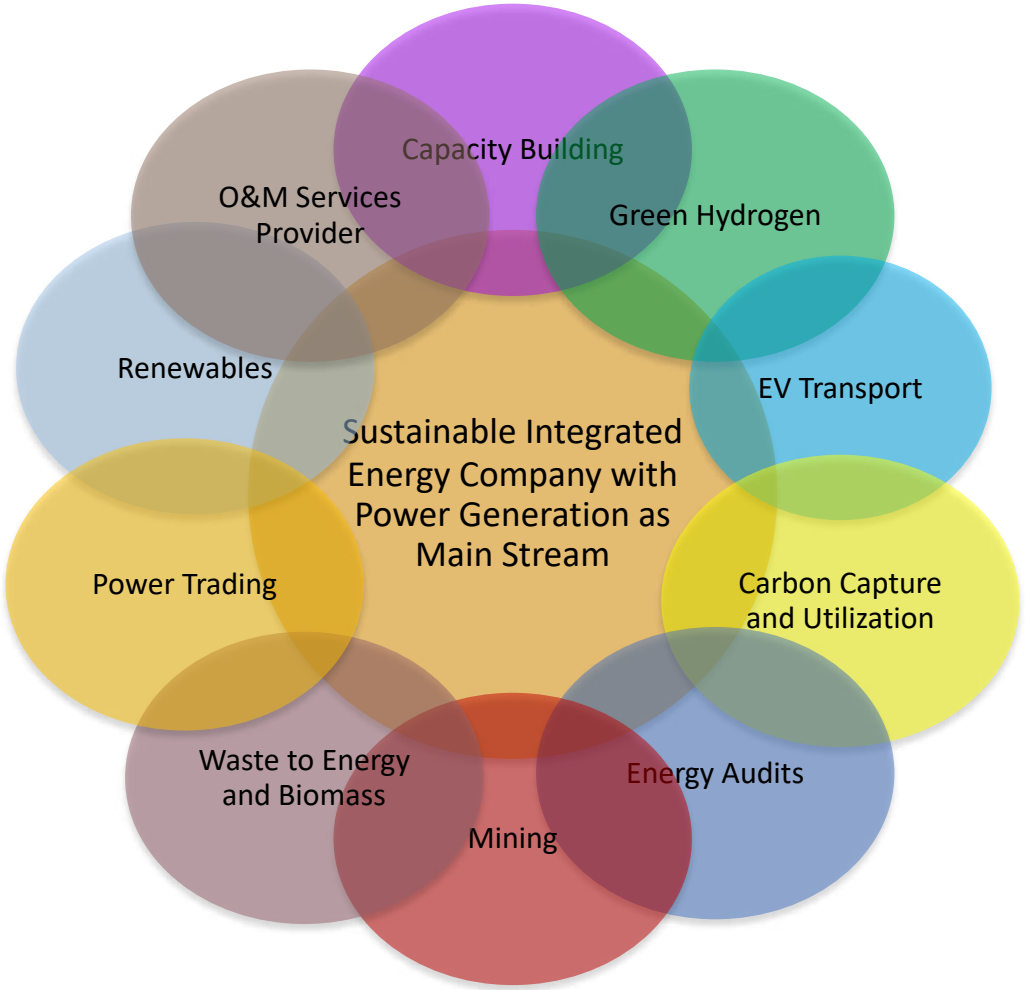
CAPACITY BUILDING OFFERINGS FOR RAS AL KHAIMAH





ABOUT NTPC

- NTPC - A premiere Government of India Enterprise
- 67907 MW under Operation, Under Construction: 17000+ MW
- USD 16 Billion - approx. Net Worth of the company
- 18000 plus committed employees
- 16 JVs and 12 Subsidiaries in Generation, Services etc.
- A global provider of capacity building services
- World's no. 2 IPP & Energy Trader as per Platt's ranking



NTPC's Power Management Institute (PMI)

- NTPC PMI - A globally recognized institute of excellence having state-of-the-art infrastructure to ensure world class learning outcomes;
- The institute has won the prestigious **ATD BEST Award** from **Association for Talent Development, USA** for the fourth time in a row in recognition of its talent development endeavors;
- NTPC has, over the years, trained a large number of professionals from India and abroad in diverse areas of technical and managerial disciplines;
- NTPC's PMI receives participants regularly from **the Middle East, Bangladesh, Nepal, Bhutan, Africa and South-East Asia** apart from NTPC's internal participants;
- Few of our overseas client include **National Grid Saudi Arabia, ABB - Abu Dhabi, GE - Saudi Arabia, Siemens, BPDB, BIFPCL and Electric Power Generation enterprise - Myanmar, Dubai Electricity & Water Authority (DEWA) - Dubai**;

NTPC's Power Management Institute

Training Modules Summary

SN	PROGRAM NAME	DURATION (in Days)	Rate for piecemeal participants (in USD)*	DATES
1	Hydrogen Energy and Fuel Cell Systems	2	USD 440 per participant	22nd – 23rd Feb. 2022
2	Solar Energy and Photovoltaic (PV) Systems	3	USD 660 per participant	8th – 10th Mar. 2022
3	Energy Efficiency in Gas based Power Plants	2	USD 440 per participant	5th – 6th Apr. 2022

This rate is after a **discount of 20% on the standard rates and applicable only if 2 or more participants from the same organization / UAE register for the program.*

Kindly note the following:

1. The soft copy of the training presentations shall be provided at the end of the program.
2. The program will be delivered online through the MS Teams platform.
3. On completion of pre and post-test for the program as well as submission of feedback form through Google form, successful training completion certificate (soft copy) shall be provided to all the participants.
4. The discounted rates offered in this proposal, are applicable for both RAK Govt. employees & other trainees and are exclusively for the above-mentioned programs only. No future reference of these rates shall be taken. NTPC may revise the rates offered on case to case basis.
5. These rates represent the best available rates for the above training courses offered by NTPC to customers in UAE. This training proposal is for organizations that register for the courses via RAK Municipality.
6. 100% advance payment is required before the commencement of the program, as per our policy.

1. Hydrogen Energy and Fuel Cell Systems

OBJECTIVES

With the growing share of renewable based electricity in the power grid, storing renewable electricity during off-peak hours as green hydrogen offers many technical and commercial benefits. This programme is intended to discuss the potential of hydrogen as an energy carrier; which can be used as a fuel in conventional burners, internal combustion engines, combustion turbines and fuel cells to generate mechanical power and electricity.

PARTICIPANT BENEFITS

After attending this programme, the participants will be able to:

- Realize the properties of hydrogen
- Describe the hydrogen production methods from various resources
- Understand the capability of hydrogen as an energy storage means, issues and challenges of H2 storage
- Understand the energy conversion methods from hydrogen into other forms
- Appreciate the capabilities of hydrogen as a means to
- reduce the impacts of variability due to RE fluctuations

A training certificate (soft copy) shall be provided to all the participants

COURSE COVERAGE

Major topics that will be covered during the course:

- Power generation using wind turbines, solar PV etc.
- Issues & challenges of renewable energy on power grid
- Energy storage methods
- Hydrogen production methods from conventional and renewables
- Storage and transportation of hydrogen
- Safety issues of hydrogen
- Power generation methods using hydrogen
- Application of hydrogen in automobiles

TARGET AUDIENCE

This programme is intended to the managers / engineers of the organizations that play a significant role in renewable energy policy making. Specifically, engineers who wish to establish or lead renewable energy implementation programs are most suitable for this course. The course is open for all levels of management, O&M staff as well as entrepreneurs.

VENUE & DURATION

Mode of Training : Online / Classroom
Duration : 2 Days

LEARNING METHODS

Lecture and Discussions

2. Solar Energy and Photovoltaic (PV) Systems

OBJECTIVES

This programme will cover an overview of solar energy, technology aspects of different solar PV modules, their application in ground-based and rooftop systems, major subsystems of rooftop PV such as inverter, batteries; their sizing, and maintenance activities relating to grid-connected and off-grid PV systems.

PARTICIPANT BENEFITS

After attending this programme, the participants will be able to understand:

- The energy level of solar radiation
- Working of PV cells, modules, inverters and batteries
- Grid connected and standalone PV systems
- Technical issues and challenges associated with intermittency associated with solar PV
- The design aspects of PV rooftop systems
- Maintenance methods and practices of PV systems
- The applications of PV design software

A training certificate (soft copy) shall be provided to all the participants

COURSE COVERAGE

Major topics that will be covered during the course:

- Basics of solar energy
- Physics of crystalline and non-crystalline PV cells
- PV rooftop systems: standalone and grid connected
- Inverters and batteries for PV systems
- PV maintenance practices & inspection schedules
- Demonstration of solar PV system design software

TARGET AUDIENCE

This programme is intended to the managers / engineers of the organizations that play a significant role in renewable energy policy making. Specifically, engineers who wish to establish or lead renewable energy implementation programs are most suitable for this course. The course is open for all levels of management, O&M staff as well as entrepreneurs.

VENUE & DURATION

Mode of Training : Online / Classroom
Duration : 3 Days

LEARNING METHODS

Lecture and Discussions

3. Energy Efficiency in Gas based power plants

OBJECTIVES

This programme will cover an overview of energy efficiency in various systems and equipment used in various industries specifically in the power sector. Available energy efficient technologies and their applicability for Gas based power plants. Systematic approach towards energy management and auditing. Evaluation methodology of investment decision for energy efficiency projects.

PARTICIPANT BENEFITS

After attending this programme, the participants will be able to understand:

- Concepts of energy and its conversion in different forms
- Benefits and Methodology of energy audit in industry
- Efficiency calculation for various systems
- Gas turbine performance optimization and concept of co generation
- Use of efficient technologies for energy conservation
- Cost benefit analysis of different energy efficiency investment alternatives

A training certificate (soft copy) shall be provided to all the participants

COURSE COVERAGE

Major topics that will be covered during the course:

- Basics of energy & its various forms
- Energy Management and audit
- Energy efficiency in Compressed air system, Fans & Blowers, Pumping system, Cooling tower , Lighting & HVAC etc.
- Efficiency in Gas turbine, DG sets & co generation
- Energy efficient technologies
- Financial & project management for energy efficiency projects

TARGET AUDIENCE

This programme is intended to the managers / engineers of the organizations engaged in operation & maintenance of plant. Specifically, engineers responsible for plant efficiency with respect to use of energy and commercial aspects are most suitable for this course. The course is open for all levels of management, O&M staff as well as entrepreneurs.

VENUE & DURATION

Mode of Training : Online / Classroom
Duration : 2 Days

LEARNING METHODS

Lecture and Discussions

Thank You

Contact Details:

VIVEK KUMAR GUPTA
International Business Department
NTPC LIMITED (A Govt. of India Enterprise)
Mobile & WhatsApp: +91-8005442166 | Office: +91-120-4946779
Address: 7th Floor, EOC, Plot No.A-8A Sector 24 | Noida (UP)
Delhi NCR | INDIA
Email: vkgupta06@ntpc.co.in | Website: www.ntpc.co.in