



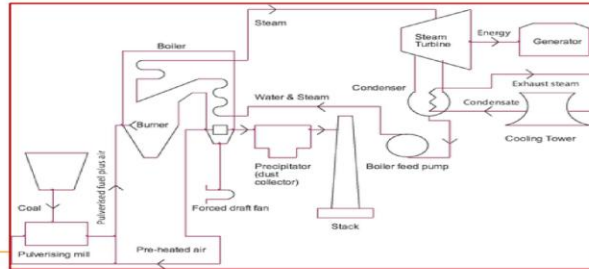
**National Productivity Council**  
(Under DPIIT, Ministry of Commerce & Industry, Government of India)  
Regional Directorate Gandhinagar

*Announces webinar on*  
**“How to Evaluate Improvements to the Performance of Boilers and Steam Turbine systems”**

**Friday, September 18, 2020  
11:00 hrs (IST)**



**Expert Speaker:**  
**Mr. Avijit Nayak**  
Deputy Director  
NPC



**Expert Speaker:**  
**Mr. R. Muthukrishnan**  
NPC empanelled  
Consultant

**E-certificate would be issued to the participants**

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## Webinar on:

# “How to Evaluate Improvements to the Performance of Boilers and Steam Turbine systems”

**Webinar Type:** - Paid

Registration Fee (including GST):- **Rs. 444/-**

**Expert Speaker:** –

- 1) Mr. R. Muthukrishnan, Empanelled Consultant of NPC
- 2) Mr. Avijit Nayak, Deputy Director, NPC

**Webinar Date:** 18<sup>th</sup> September 2020 at 11:00 Hours | **Duration:** 120 Minutes

**About Webinar:** -

We all know that the key energy influencing parameters of a boiler are the stack temperature and the oxygen content in the flue gas. But do we know what is the effect of incremental changes to these parameters on fuel consumption and the boiler efficiency. Similarly, in the steam turbine systems, several energy influencing variables such as inlet steam temperature, isentropic efficiency, cooling water supply temperature, etc. play a major role in steam consumption per unit of power generated. But do we know what changes should be done to which parameter to get the targeted efficiency of the boiler or the targeted steam consumption per unit of power generated from the steam turbines.

**Webinar Coverage:** -

This webinar explains a step by step calculation procedure using Excel worksheet for the following:

- Calculating boiler efficiency using direct and indirect methods using coal as fuel.
- Calculating the isentropic efficiency of a condensing cum extraction steam turbine.
- Learn to do a sensitivity analysis using energy influencing variables on the energy performance of boilers and steam turbines.

### Speaker Profile:-

 <p><b>Mr. R. Muthukrishnan</b></p>	<p>Mr. R. Muthukrishnan is an experienced chemical engineer with over 40 years of experience in the field of project management, detailed engineering, commissioning and operation of large petrochemical plants. While working in Reliance Industries Limited, Mr. R. Muthukrishnan was associated with DuPont, the world leaders in Process Safety, and was instrumental in implementing Process Safety Management Systems in all the manufacturing locations of Reliance Industries. He is an associate member of Process Safety in the Institution of Chemical Engineers, UK and the senior member in the American Institute of Chemical Engineers, USA.</p>
 <p><b>Mr. Avijit Nayak</b></p>	<p>Mr. Avijit Nayak is working as Deputy Director at National Productivity Council since 2009 in energy management group. He has holds MBA Degree in Power management, Post graduate certificate in energy management, and bachelor degree in Electrical engineering. He is certified energy auditor and secured position among top 10 energy auditors in the 13<sup>th</sup> National certificate examination for energy auditor and mangers. He is certified measurement &amp; verification professional (CMVP) awarded by the Association of Energy Engineers (AEE) in conjunction with Efficiency Valuation organization (EVO). He has also worked at Central Power Research Institute, Bangalore as research fellow prior joining to NPC. His experience includes energy auditing and conservation studies in Thermal Power stations, steel &amp; Iron industries, industrial establishments and electrical distribution system.</p>

### Register to learn:

- Know the calculation procedure for boiler efficiency using direct and indirect method using coal as a fuel
- Know the calculation procedure for isentropic efficiency of a steam turbine on condensing and extraction modes.
- Understand the quantitative effect of energy influencing variables on the performance of the boiler and steam turbines.

**Contact Details: Tel:** 079-23287345/23287344, **e-mail:** npcgnrem@gmail.com

Thanks & Regards

Regional Director  
National Productivity Council  
RD, Gandhinagar