

# Webinars Presented by PAT CELL DNHDD from Oct to Dec 2023

## WEBINAR-1

*Webinars organised by PAT CELL DNHDD , BEE AND SDA DADRA NAGAR & HAVELI in  
October, November & December 2023*

### 1. Topic: “Energy Savings Opportunities in Compressed Air System”

Speaker: Mr Puneet Hegde, Dynamic Engineers, Pune

Date: 9<sup>th</sup> October 2023

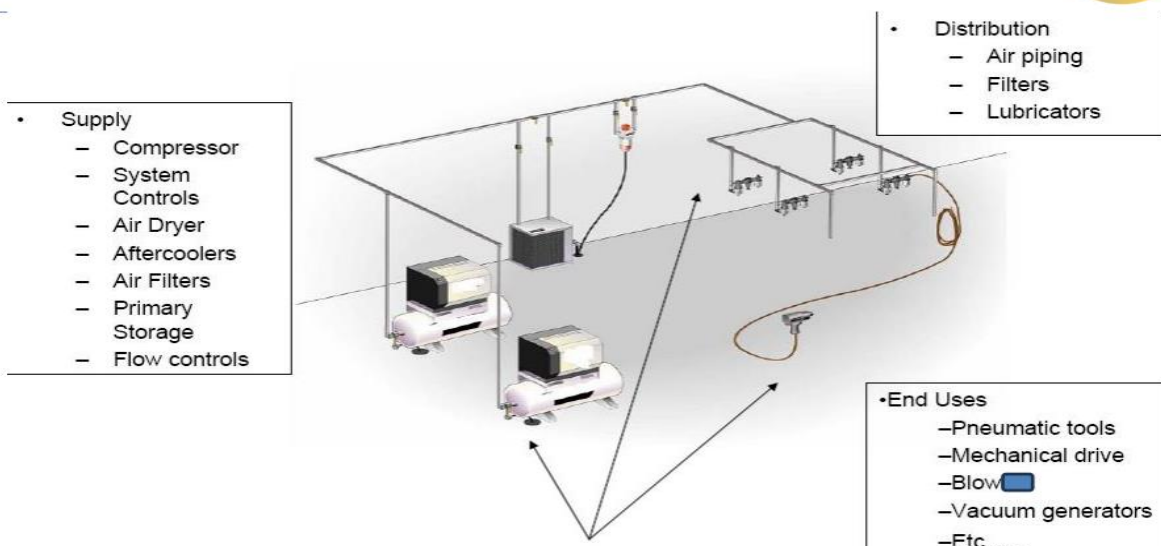
Duration: One and a half hour

Participants: 28

#### **Brief Highlights**

- Air is Free but Compressed Air is Expensive
- Operate The Air Compressor At The Lowest Possible Set Pressure
- Study Compressed Air Applications
  - I. Study Pressure Drop and address issues like line size & leakage
  - II. Provide suitable receivers for buffer air storage
  - III. Apply multiple strategies like low pressure / high pressure line segregation
  - IV. Air booster for specific small application
- Compressed Air Leakage Reduction
- Air Compressors – Substitute compressed air

### Schematic of Compressed Air System



All elements of Compressed Air System  
provide opportunity for energy savings

## WEBINAR-2

### 2. Topic: “Sustainable Textile Production and Impact calculator-Carbon and water footprint”

Speaker: Dr Rajkumar Samuel, M/s HOHENSTEIN INDIA PVT LIMITED

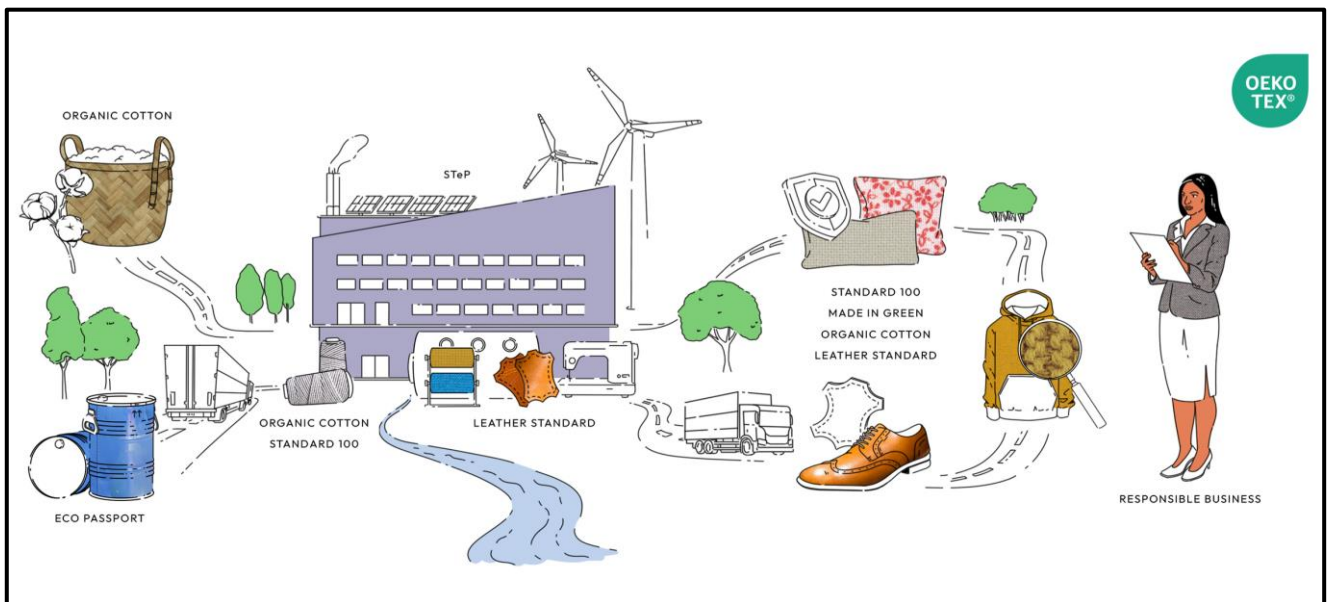
Date: 29<sup>th</sup> November 2023

Duration: One and a half hour

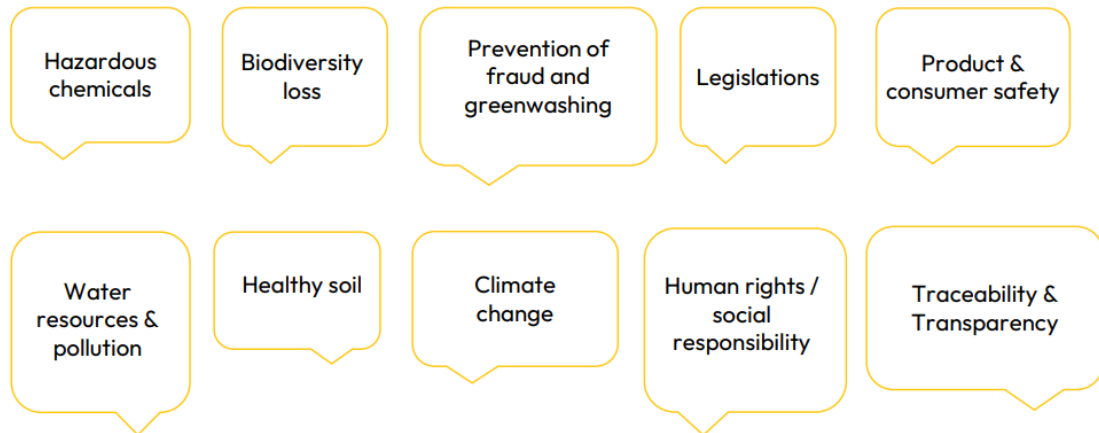
Participants: 20

#### Brief Highlights

- The talk covered sustainable textile production for people and planet.
- The OEKO-TEX is a certifying body for providing certificated to textile industries which follow sustainable methods.
- **THE PRODUCT** OEKO-TEX® STeP certification sets the highest standards for both social and environmental aspects of textile and leather production. This certification is a sign of responsibility towards employees and the environment and supports a company’s journey towards more sustainable production.
- The talk covered in detail on chemical management, social responsibility, quality management, health and safety, environmental management, environmental performance, and carbon footprint impact calculator.
- It also covered the contribution to the UN Sustainable Development Goals.
- Website- [www.oeko-tex.com](http://www.oeko-tex.com)



## Current market environment



## STeP contribution to the UN Sustainable Development Goals



## WEBINAR-3

### 3. Topic: "ENERGY EFFICIENCY OPPORTUNITIES IN TEXTILE INDUSTRIES "

Speaker: Mr RAVINDRA DATAR, Director, Senergy Consultants PVT. LTD., Mumbai

Date: 26<sup>th</sup> December 2023

Duration: One and a half hour

Participants: 18

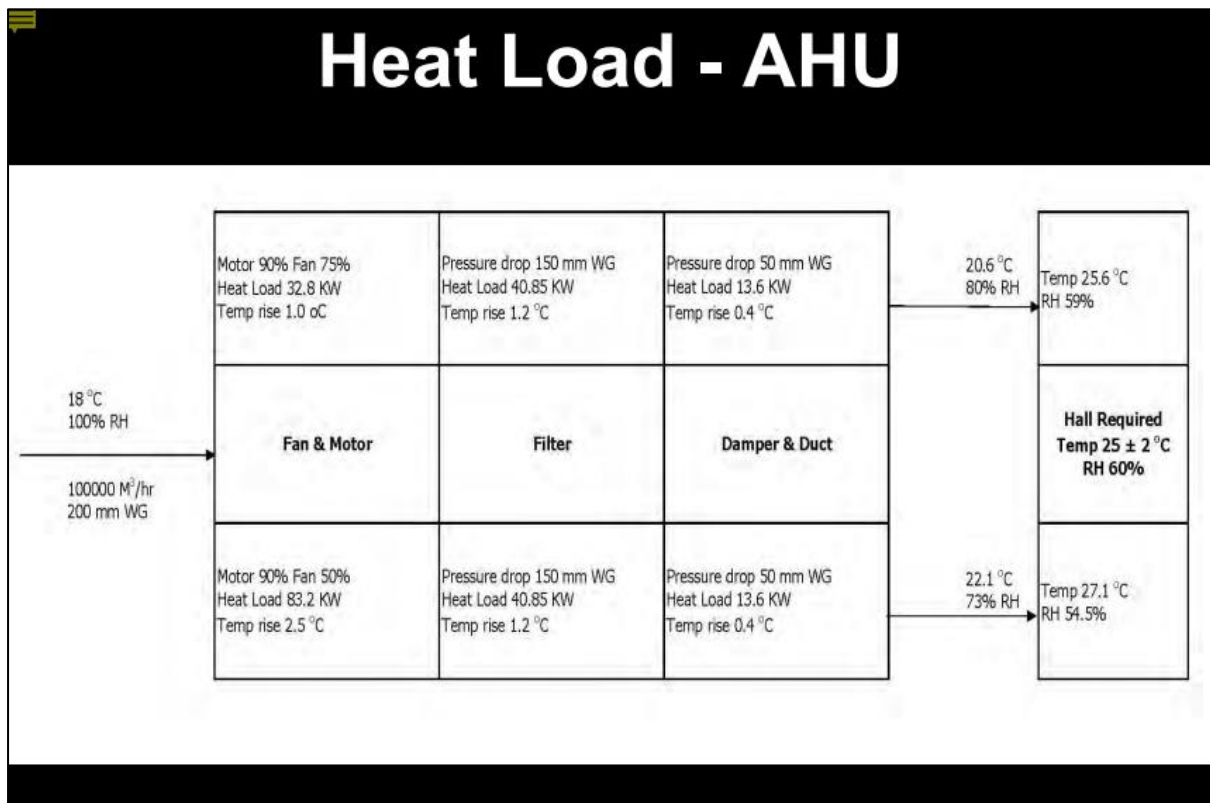
#### Brief Highlights

##### A. Major areas covered

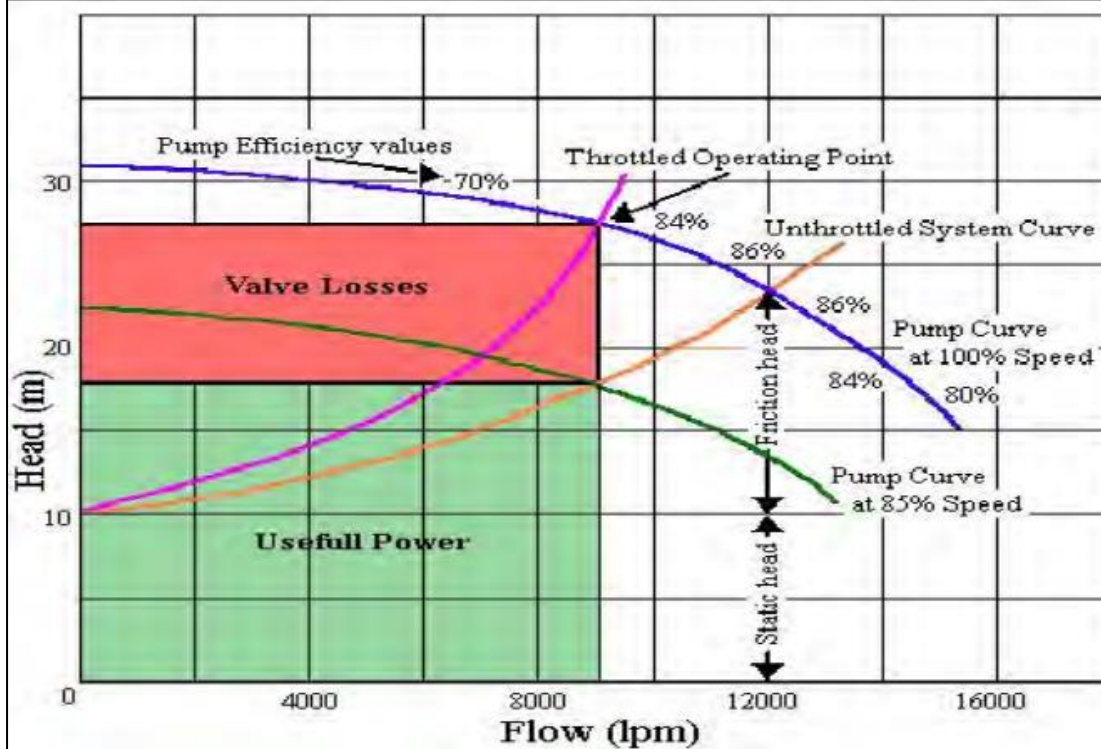
- Air conditioning system
- Pumping Systems
- Fans and blowers
- Cooling towers
- Compressed air system
- Illumination and lighting

##### B. Energy efficiency tips for Air conditioning system

- a) 1°C drop in **evaporation** temperature leads to
  - 3 to 4% increase in specific power consumption
  - 2 to 3% drop in the refrigeration effect
- b) 1°C drop in **condensing** temperature leads to
  - 3 to 4% increase in specific power consumption
  - 1 to 2% drop in the refrigeration effect



# Throttling Loss (Intentional / Unintentional)



## C. Energy efficiency tips for Compressors air system

### I. Suction parameters- pressure, temperature & RH

- 1°C temperature drop leads to 0.2% saving in power.
- 100 mm WG increase in pressure leads to 1% increase in power.

### II. Discharge parameters- pressure

- 1kg/cm<sup>2</sup> reduction saves 5 to 9% in the specific power

### III. Inter stage parameters- temperature, pressure drop in cooler

- 1°C temperature rise leads to 0.4% increase in power.

### IV. Leakage

- Leakage could leads to substantial losses, in some cases 60% of energy losses are observed in many plants

## Alternatives to Compressed Air

- Provide high flow blowers for low pressure applications like body cleaning, agitation, general floor cleaning.
- Replace pneumatic equipment with motorized gadgets wherever possible.
- Pneumatic transport may be replaced with mechanical system as it consumes about 8 times more energy.
- Pneumatic tools such as drill and grinders consume about 20 times more energy than motor driven tools. Hence they have to be used efficiently. Wherever possible, they should be replaced with electrically operated tools.

## Air Compressors

Description	Reciprocating	Rotary Screw	Centrifugal
Efficiency at full load	High	Higher	Highest
Efficiency at part load	Decent due to staging	Poor: keeps dropping at lower loads	High up to 60% Very Poor: below 40%
Efficiency at no load	Decent	Poor	Very Poor
No Load Power as % of full load	10-25%	25-60%	30-50%