



# Supply & Retrofit for AHUs/Ventilation Applications



 **Elon Musk**    
@elonmusk

We are nothing without our fans

 **Smoke-away**   @SmokeAwayyy · Jun 20  
Elon is building a giant GPU cooler in Texas.



9:03 PM · Jun 20, 2024 · **59.1M** Views





# Proud Leaders of Sustainability by Introducing Axial Fan Technology to the Indian Industry in 2016

Introduction

Current Systems

Design

Solution

Case Study

Our Process

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## Our Vision

“To contribute in energy savings with innovation technology” which are **Efficient, Effective & Economical**



## Our Mission

“To remove inefficiencies of HVAC Systems leading to **Xero Energy** wastage”



## Our Story

Team of expert engineers implementing High efficient ventilation solutions for its customers across India since 2016.

Introduction

**Current Systems**

Analysis

Efficiency curves

Common Fans

Design

Solution

Case Study

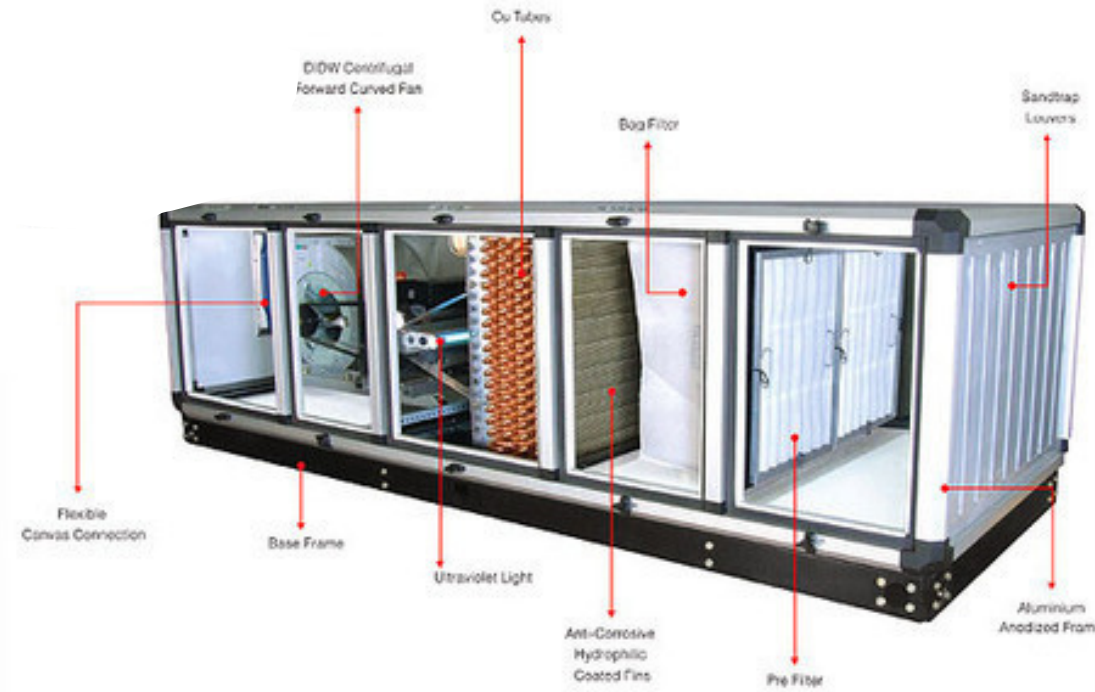
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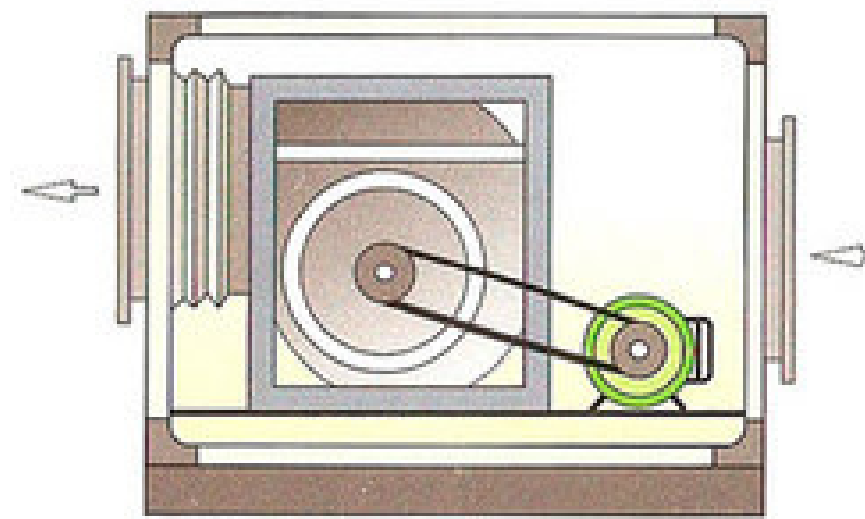
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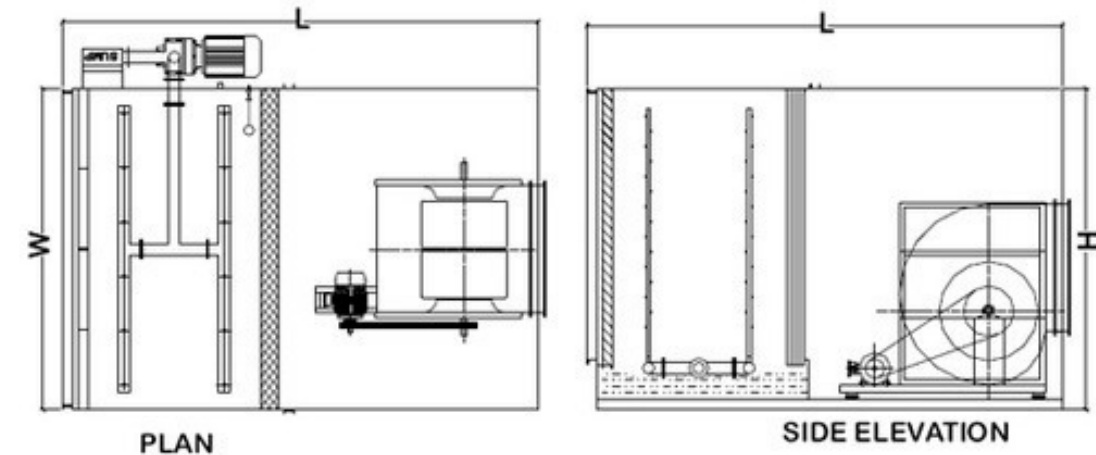
Chilled Water Air handling Units



Air Cooling Air Handling Units



Fresh Air Handling Units



H Plant or Spray Type Air Cooling Unit



## Areas of improvement in Fan System



### Aero Dynamic Efficiency of Impeller

Discussion can be done



### Motor Efficiency

Discussion can be done



### VFD Efficiency

Drives in the market are 97% efficient with almost no gap to improve



### Transmission Efficiency

Belt drive – Discussion of inefficiency; Direct drive – No discussion of inefficiency



### System Efficiency

Component of all the above



### System Effect

How smoothly the air flows through the fan without bends

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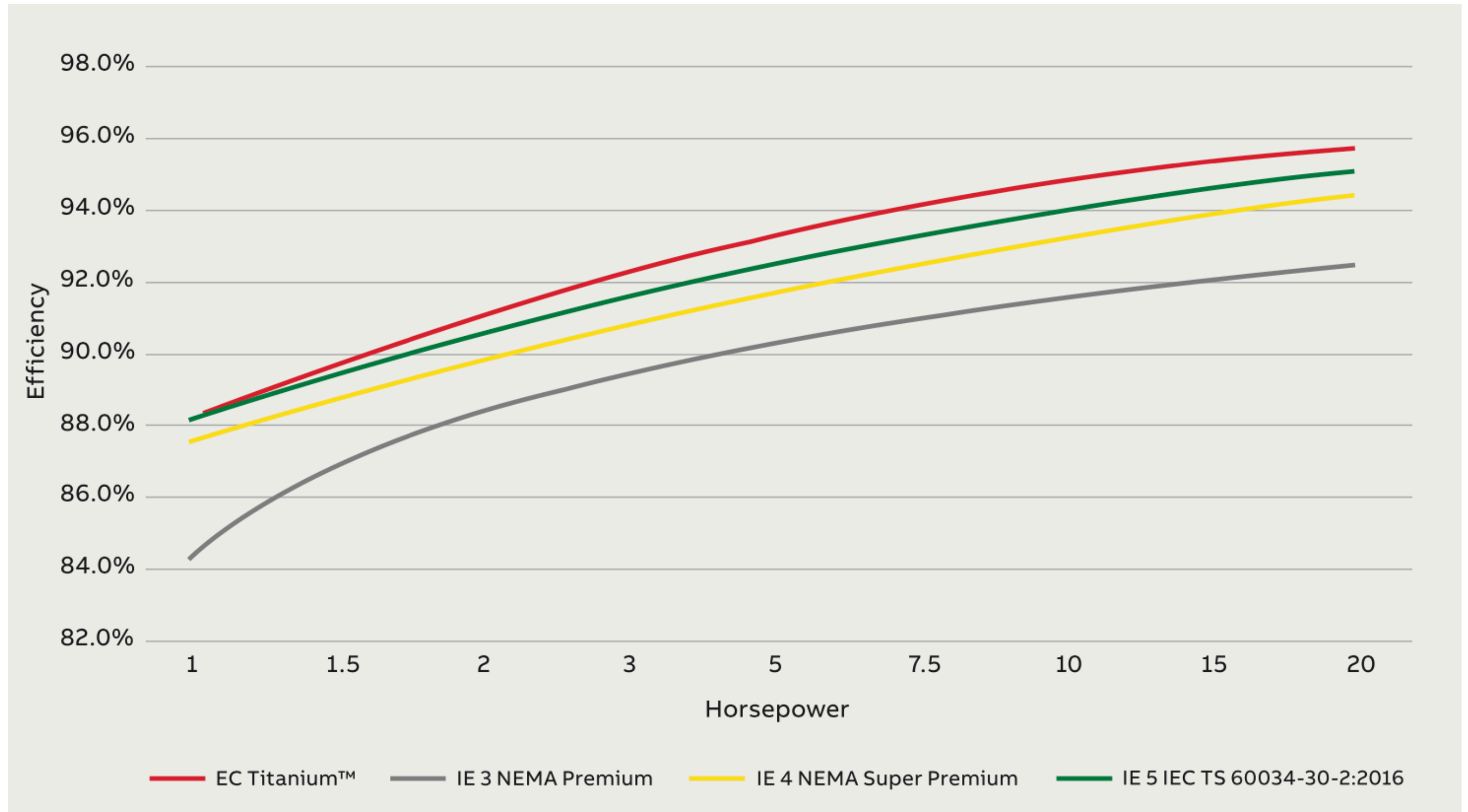
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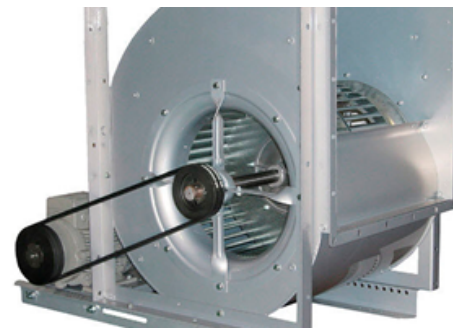
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# Commonly Seen Fan Types in Ventilation Systems




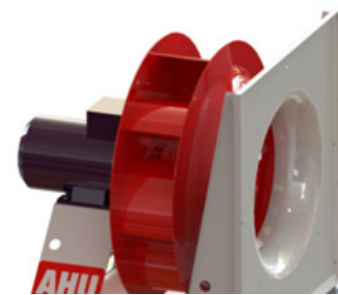
## Centrifugal Fan

-  Impeller Type:
- Forward & Backward curved


-  Motor Types:
- Induction/PM

-  Speed Control:
- VFD

-  Typical System Efficiency:
- Up to 63%**



## Plug Fan

-  Impeller Type:
- Backward curved

-  Motor Types:
- Induction/PM


-  Speed Control:
- VFD

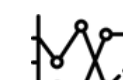
-  Typical System Efficiency:
- Up to 66%**




## Plug Fan (EC Fan)

-  Impeller Type:
- Backward curved

-  Motor Types:
- PM

-  Speed Control:
- Built-in speed controller

-  Typical System Efficiency:
- Up to 68%**



## Aeronaut Axial Fan

-  Impeller Type:
- Vane axial fans

-  Motor Types:
- Induction/PM

-  Speed Control:
- VFD

-  Typical System Efficiency:

**Up to 88%**

## What makes our Fans Efficient **Up to 94%**

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### Unique Impeller Design

Efficiency – pressure  
Maintains efficiency at part loads

### Motor & drives

Efficiency at part loads  
Can use AC/EC/DC Motor

### Downstream Guide Vanes

Efficiency – pressure  
Reduces Turbulence Losses



### Minimum Tip clearance

Efficiency – noise reduction  
Reduces Turbulence Losses

### Hub

Efficiency – pressure  
Aerodynamic Design

### Inlet Cone

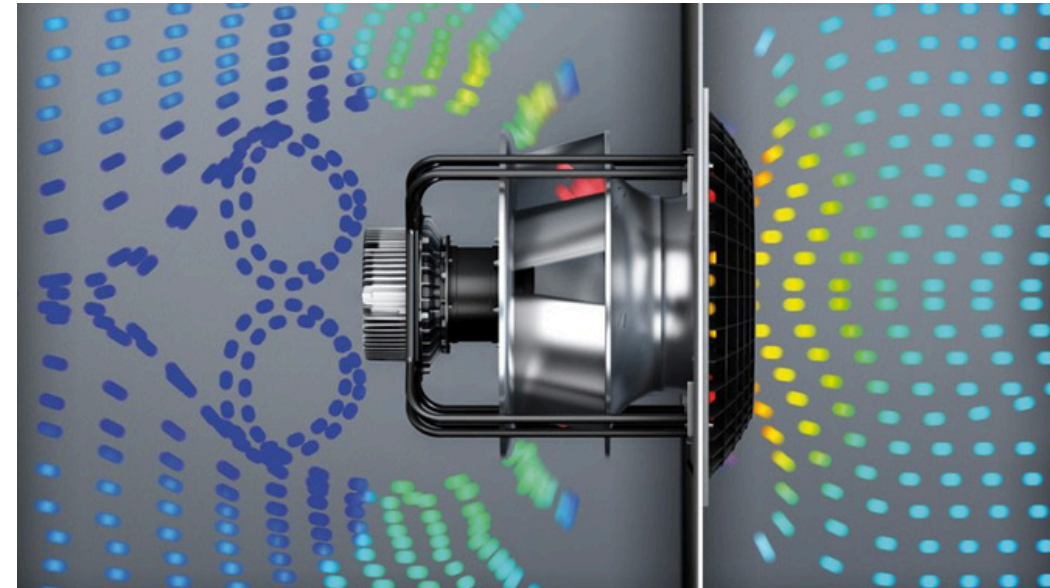
Efficiency – noise reduction  
Air introduced into the fan smoothly



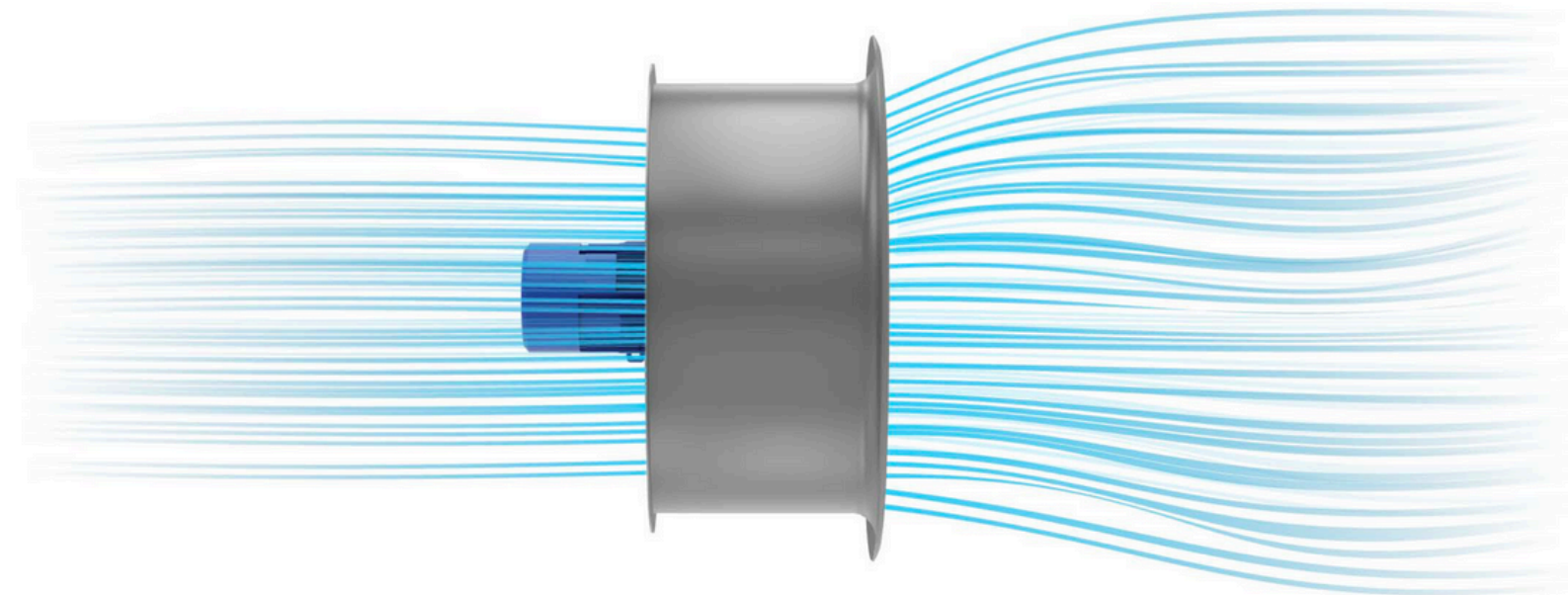
# Energy Efficient Air Movement with **AERONAUT Fans**

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- Design
- System Effect**
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**Plug/EC Fan**



**Aeronaut Axial Fan**



## Save 30% - 60% Straight – Hassle Free

- Guaranteed Savings with same AIR FLOW
- No change in your system design
- 6-8 Hrs of Quick Retrofit
- No maintenance
- No belt replacement - Centrifugal
- No Costly Fan replacements due to bearing or winding issues – EC
- Compact Fans - More space for service and cleaning



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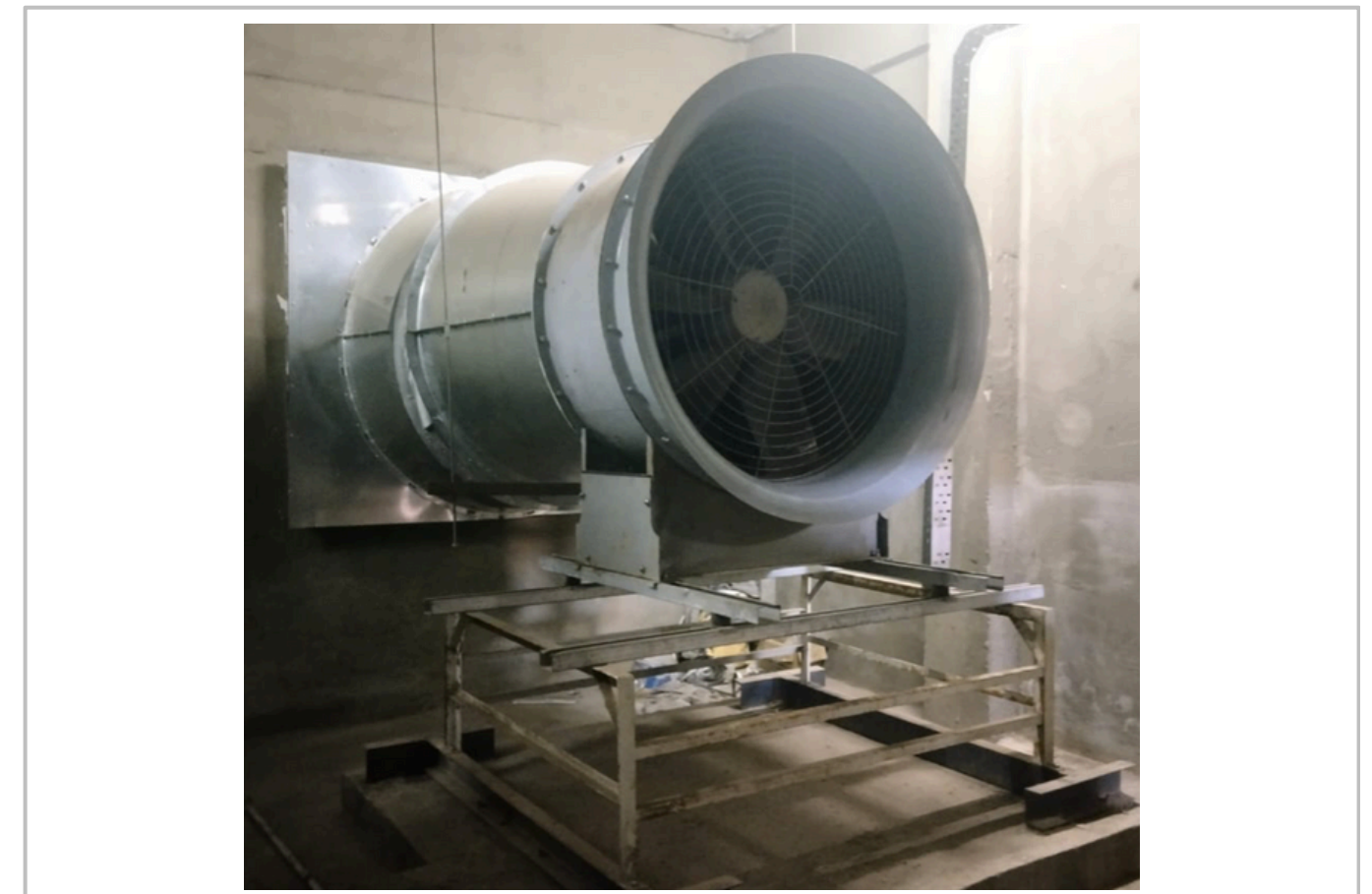
### Before Retrofit



Backward Curved Belt Driven Centrifugal Fan

Airflow: 80,915 CFM  
Motor Rated kW: 22kw \* 2 Nos  
Power Input kw: 34.44 kw

### After Retrofit



Aeronaut High Efficient Axial Fan

Airflow: 82,954 CFM  
Motor Rated kW: 15kw \* 2 Nos  
Power Input kw: 13.18 kw

• **62**  
**%**

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### Before Retrofit



Backward Curved Belt Driven Centrifugal Fan

Airflow: 40,586 CFM  
Motor Rated kw: 15kw\*2 Nos  
Power Input kw: 22.5 kw


### After Retrofit




Aeronaut - High Efficient Axial Fan

Airflow: 41,772 CFM  
Motor Rated kw: 11 kw\* 2 Nos  
Power Input kw: 8.7 kw


• **61%**

- 


**1 Meet**

  - Appointment with our engineers
  - Performance measurement with calibrated instruments
- 


**2 Proposal**

  - Innovative solutions suitable to any type of installation
  - Using worlds most efficient and adaptable technologies
- 


**3 POC**

  - Actual installation on site to prove our calculated savings for the same output
- 

**4 Evaluate**

  - Promised commitments with POC on site without liability on client
  - Testing facilities after installation with 24x7 on call service support
- 

**5 Full Project proposal**

  - Full project analysis and proposal after proving our commitments by doing POC.
- 

**6 Validate**

  - Hassel free pre proven project scaling for entire facility
  - 48 Hours guaranteed on site service support across India



# CII National Awards – Most Innovative Energy Saving Product

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Lupin – Vizag



Amaron – Andhra



JK Tyers – Gwalior



Hero – Haridwar



Diamler – Chennai



Hyundai – Chennai



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