

# Energy Efficient Fans & Impact On Overall Energy Of Buildings



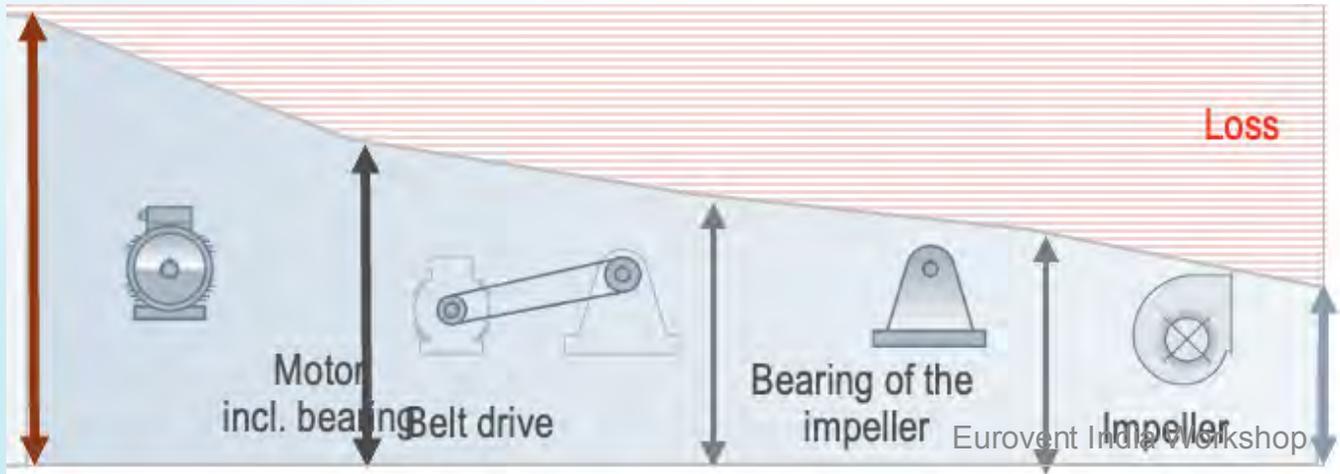
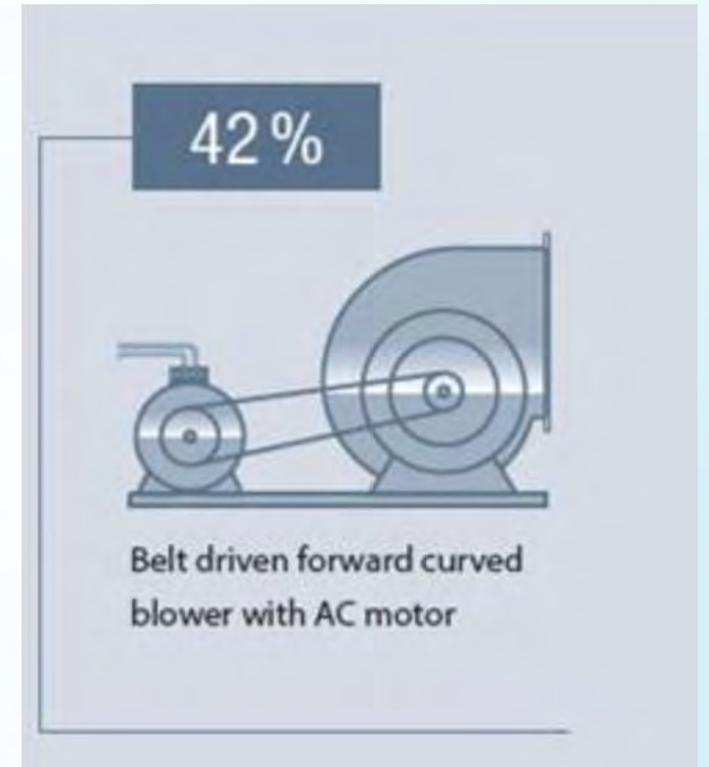
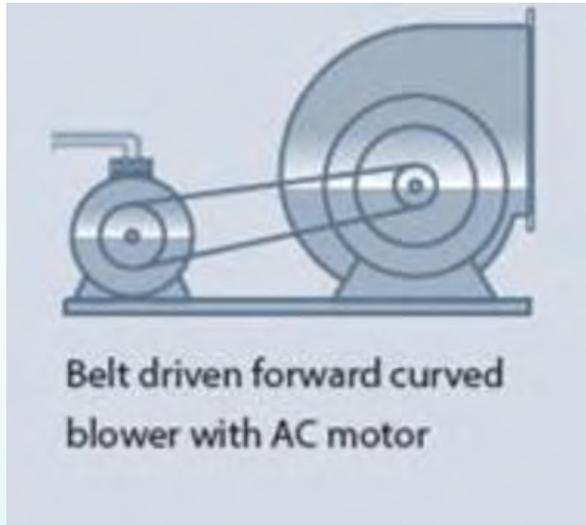
**Mr Nitin Tiwari**  
AGM Sales  
ebm-papst India

# Key topics

- Type of fans
- Energy Efficient EC Fans
- Energy Savings in Buildings

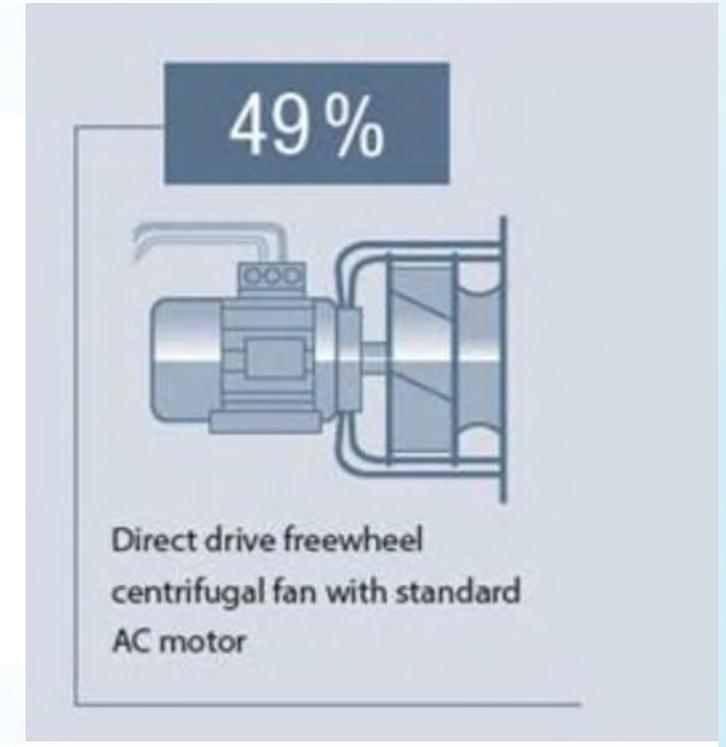
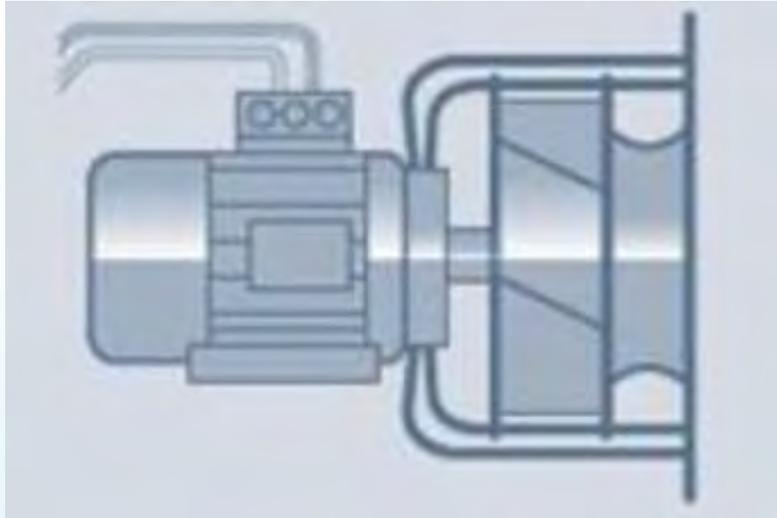
# Type Of Fans

# Belt Driven Fans



- Transmission loss
- Higher maintenance : belt and pulley
- Higher footprint

# Direct Drive Fans



Relatively lower losses  
Still high losses in the air side

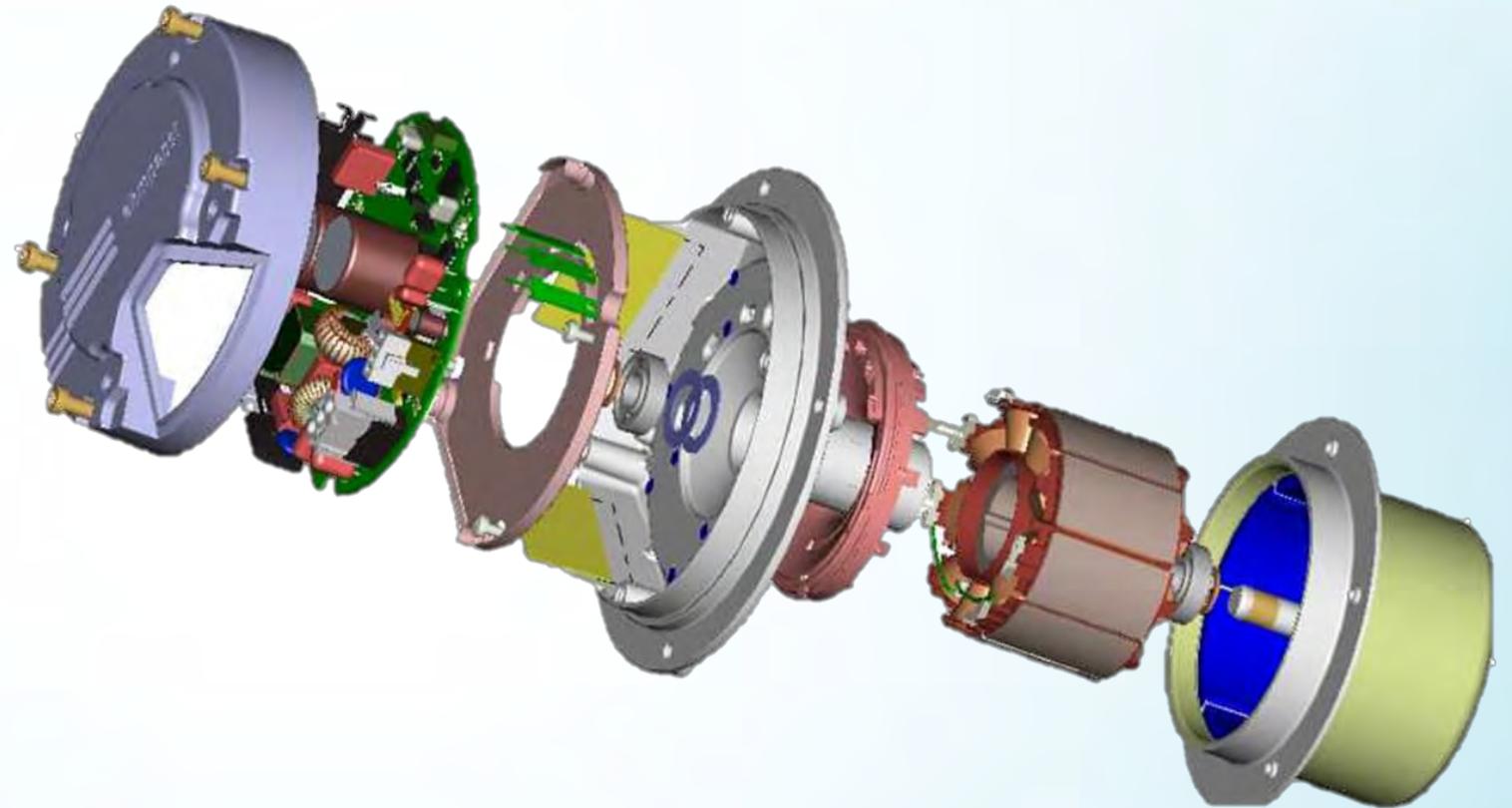
# Energy Efficient EC Fans

# What is EC?

It is a mains-powered,  
brushless, permanently excited  
synchronous motor with  
“Electronic Commutation”

*We simply named it*

## EC motor

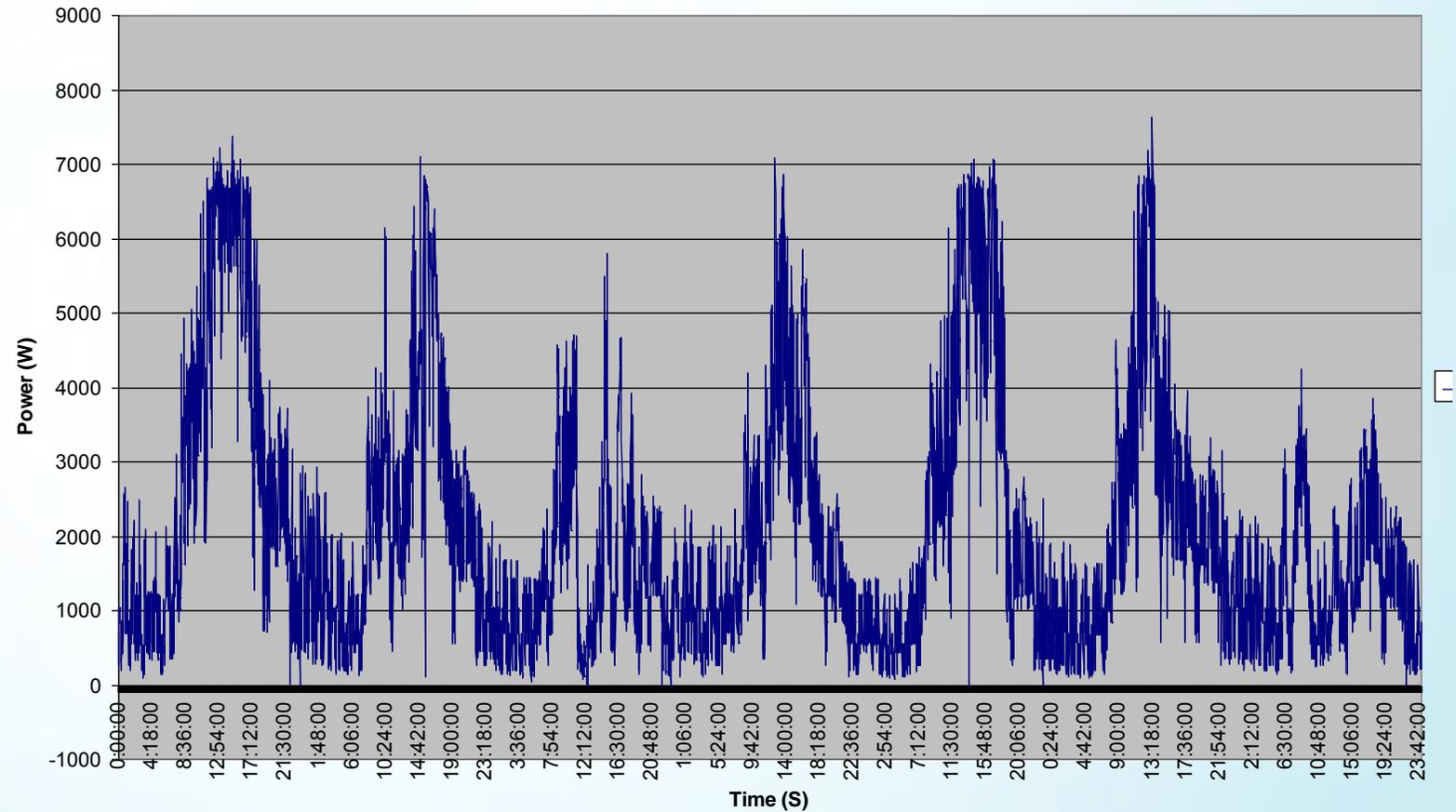


# Why EC?

Increasing Energy Costs

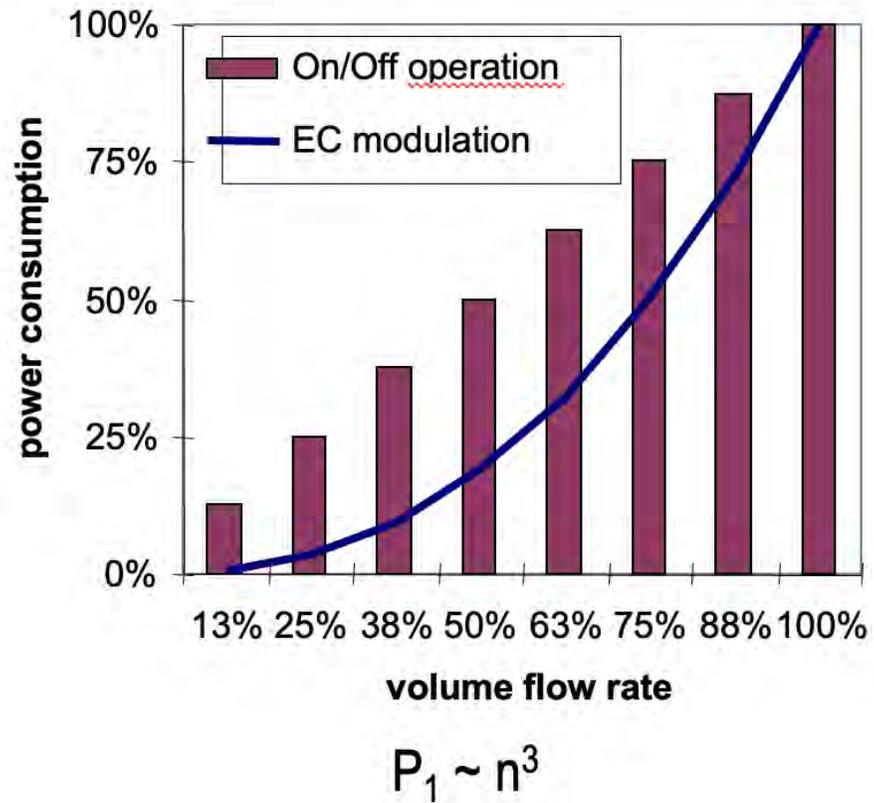


The load is variable



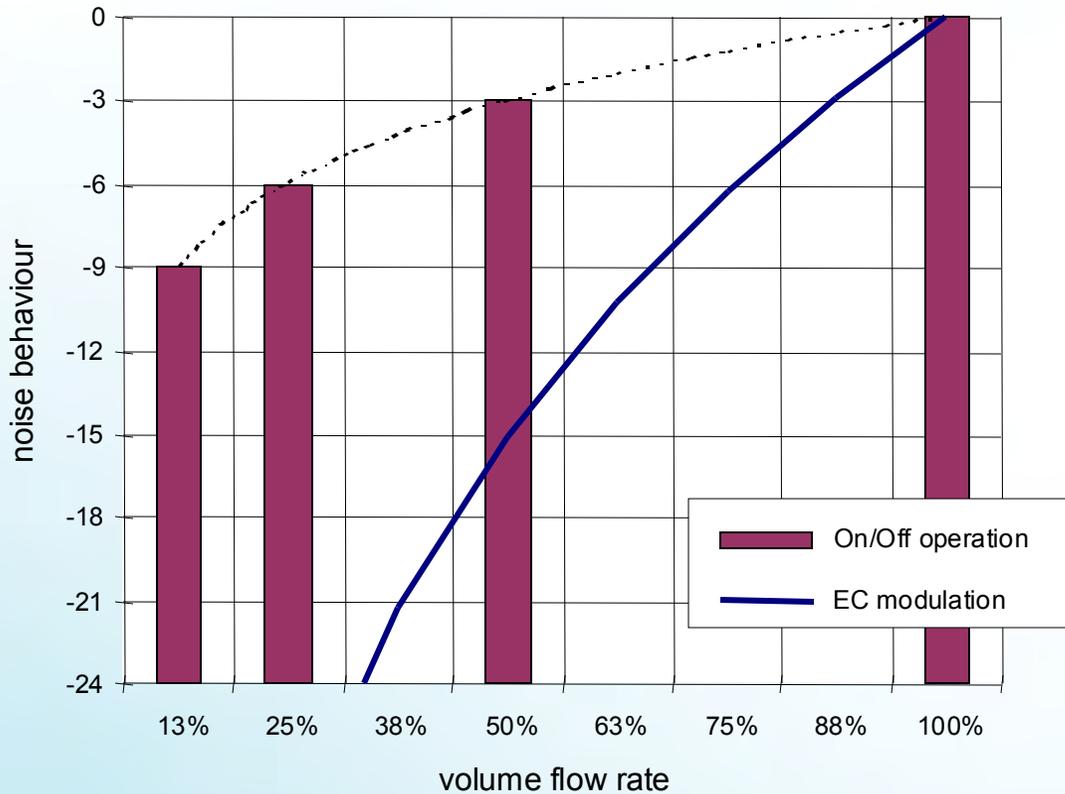
# Why EC?

## Energy Savings In Part Load



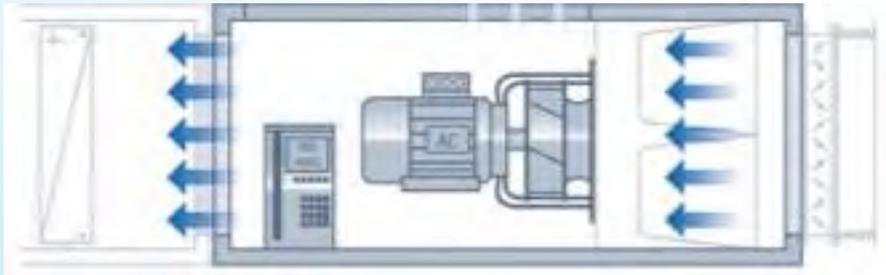
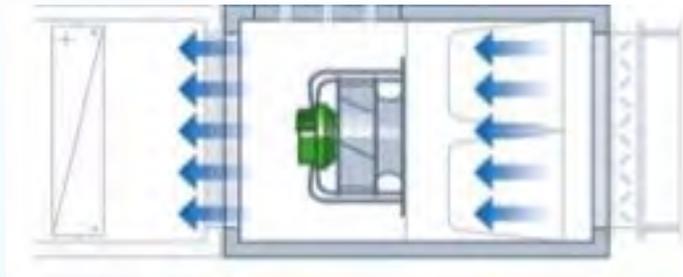
# Why EC?

## Noise Reduction

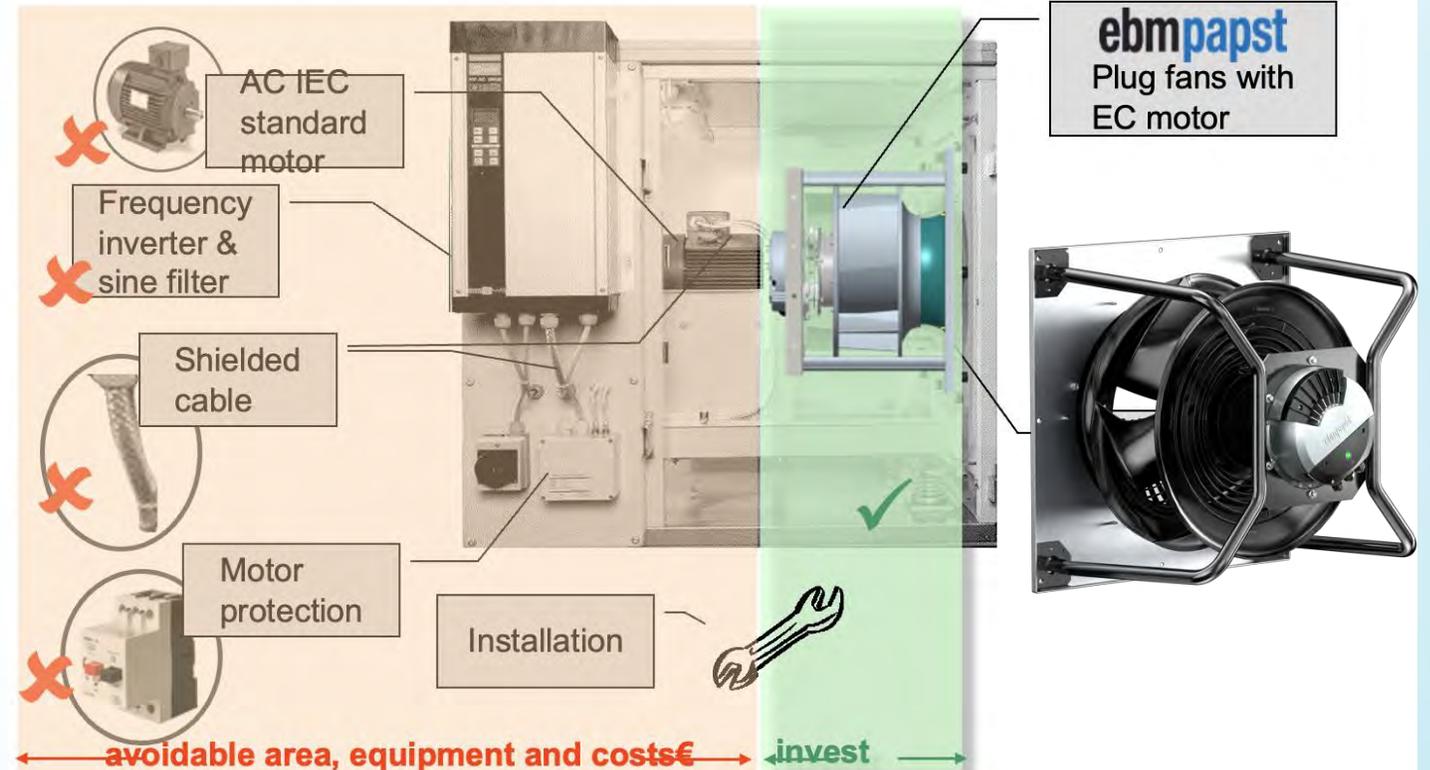


# Why EC?

Compact



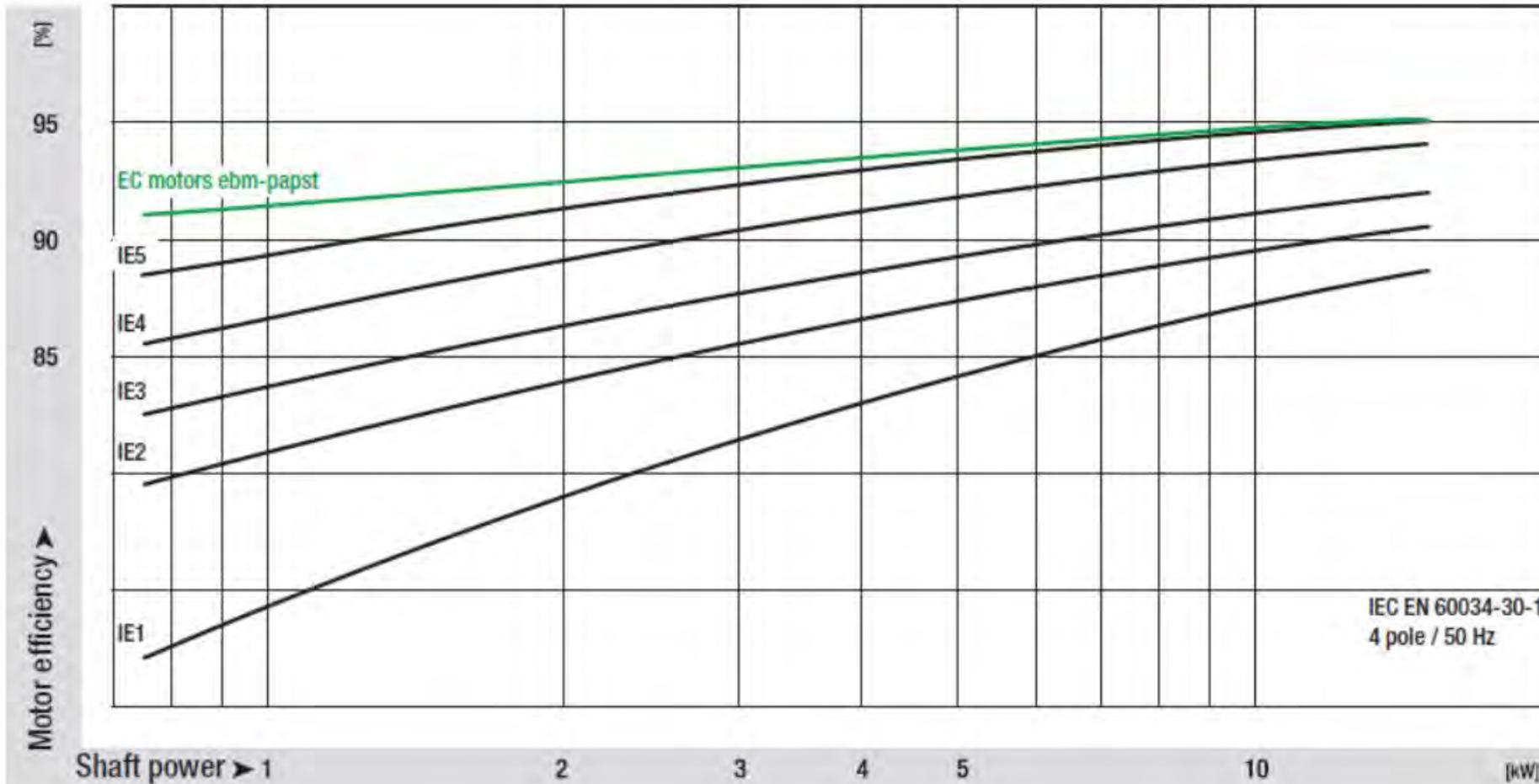
Space savings



No need of ancillaries like Motor, VFD, Cables, etc

# Why EC?

## Efficient EC motors above IE5 limits

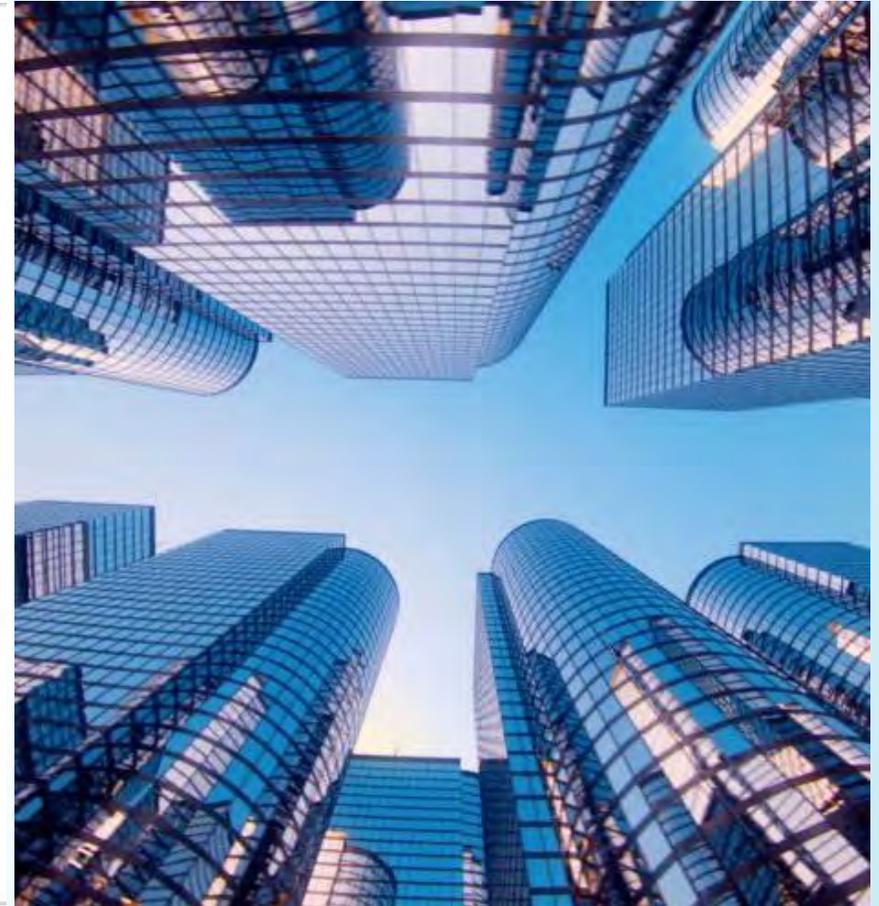
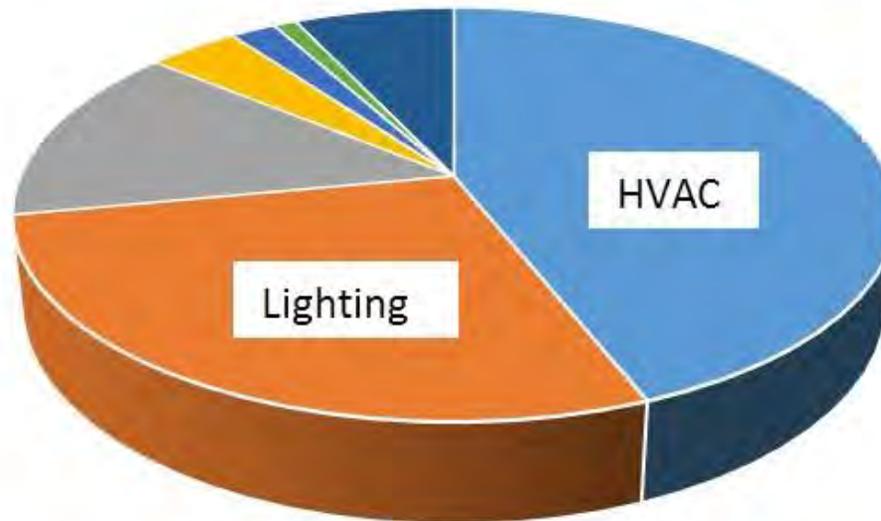


# Energy Savings In Buildings

# Energy Savings In Buildings

44% of a Commercial Building's Energy Consumption is Attributed to HVAC Systems

- HVAC 44%
- Lighting 28%
- Ofc. Equipment 14%
- Water Heat 4%
- Refrigeration 2%
- Cooking 1%
- Other 7%



# Energy Savings In Buildings With EC Technology



**Air Handling Units**



**CRAC/PAC**



**Condensers**



**Fan-Arrays Data Centers**



**Chillers**



**Cooling Towers**



**FCU/CSU**



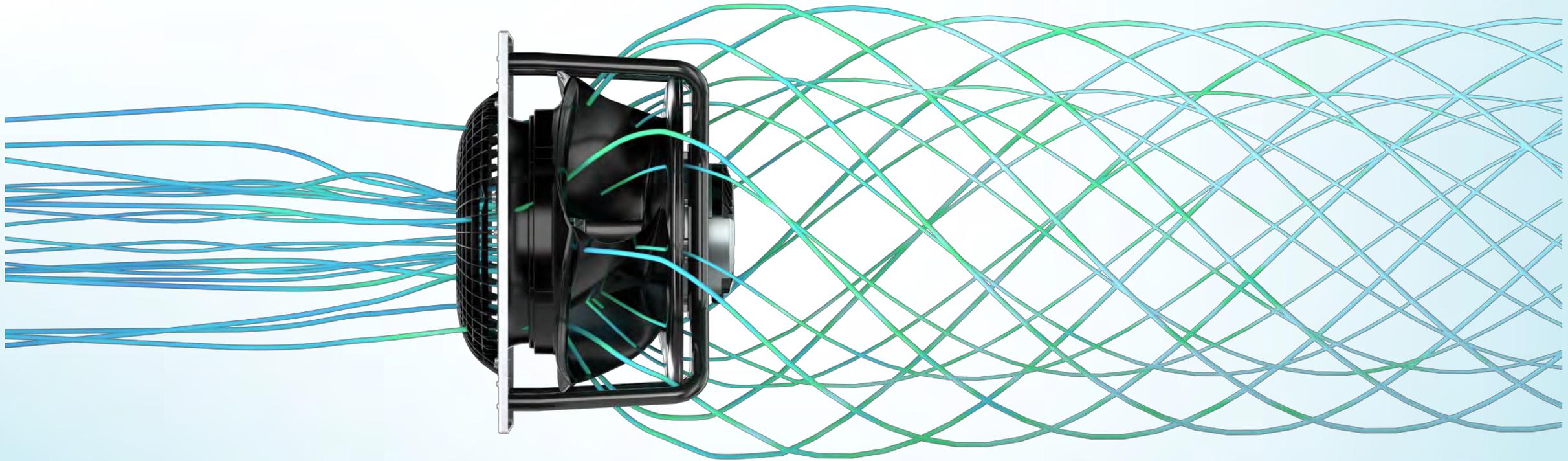
**Exhausts/ Ventilation**

# Evolution of Energy Savings With EC Technology



**Energy consumed for 10,000 CMH at 1000 Pa →→→**

# *Thank You For Your Attention!!*



# Thank You!

Mr Nitn Tiwari  
AGM Sales  
ebm-papst