



ENERGY EFFICIENCY SERVICES LIMITED
A JV of PSUs under the Ministry of Power

ODS, ENVIRONMENTAL IMPACT, KIGALI AMENDMENT AND TRANSITION TOWARDS ENVIRONMENT FRIENDLY REFRIGERANTS AND TECHNOLOGIES

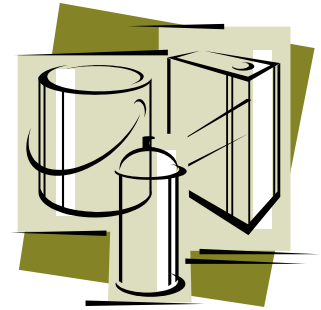
Manoj Kumar M
Project Manager GEF-6, EESL

Ozone Depleting Substances (ODS)

- Refrigerants



- Foam Blowing agents



- Cleaning solvents



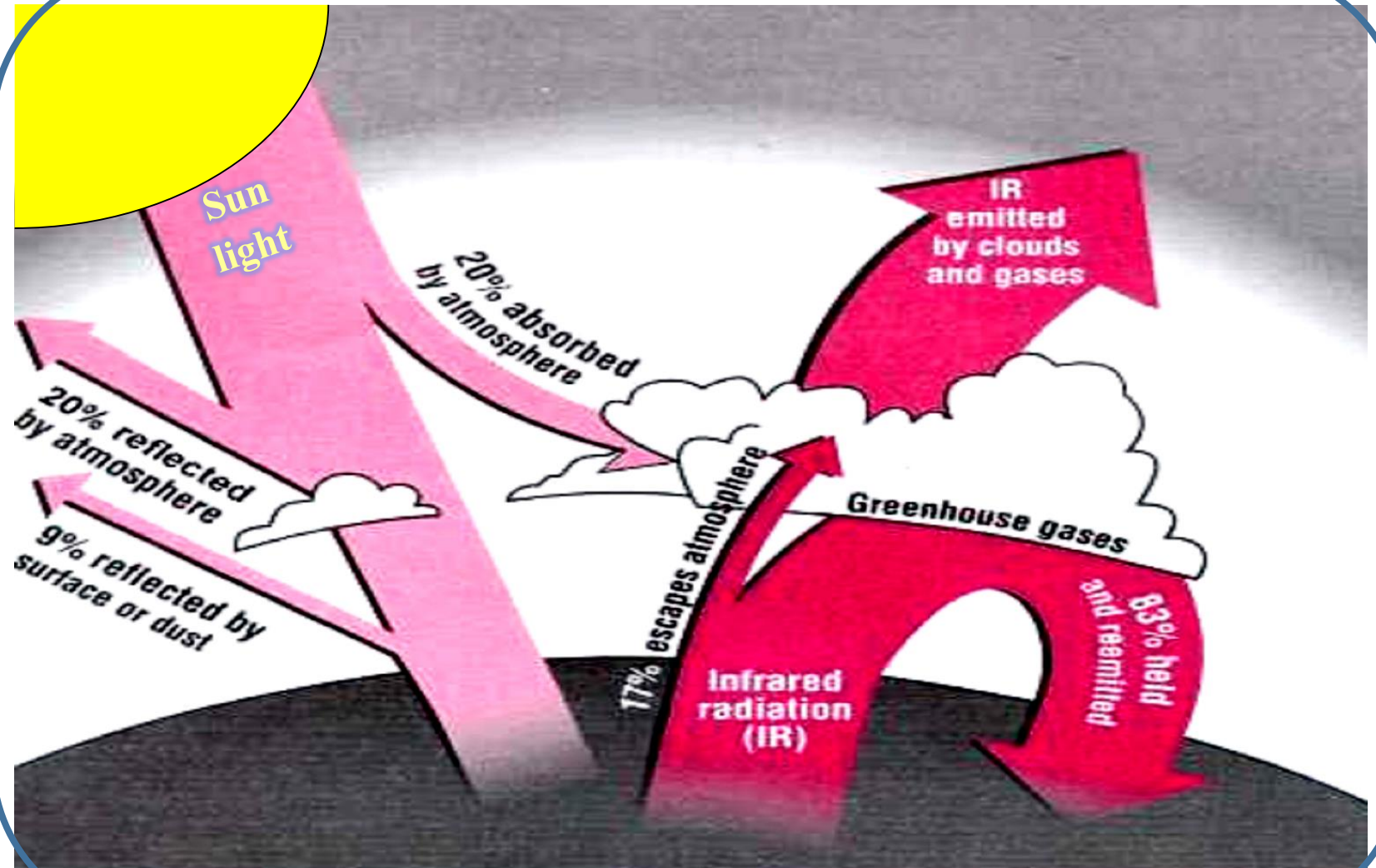
- Fumigants



- Fire extinguishers




- Depletion of Ozone Layer
- Climate Change (Global Warming)





Consequences of Ozone Layer Depletion

	UV-B radiation 
Plastics	++++
Wood	+++

++++ Very susceptible,
+++ Moderately Susceptible,

1% ozone reduction causes
2% increase in cancer cases

1% increase in UV-B causes
10% decrease in food production



**SUPPRESS BODY
IMMUNE SYSTEM**



SKIN CANCER



EYE DAMAGE

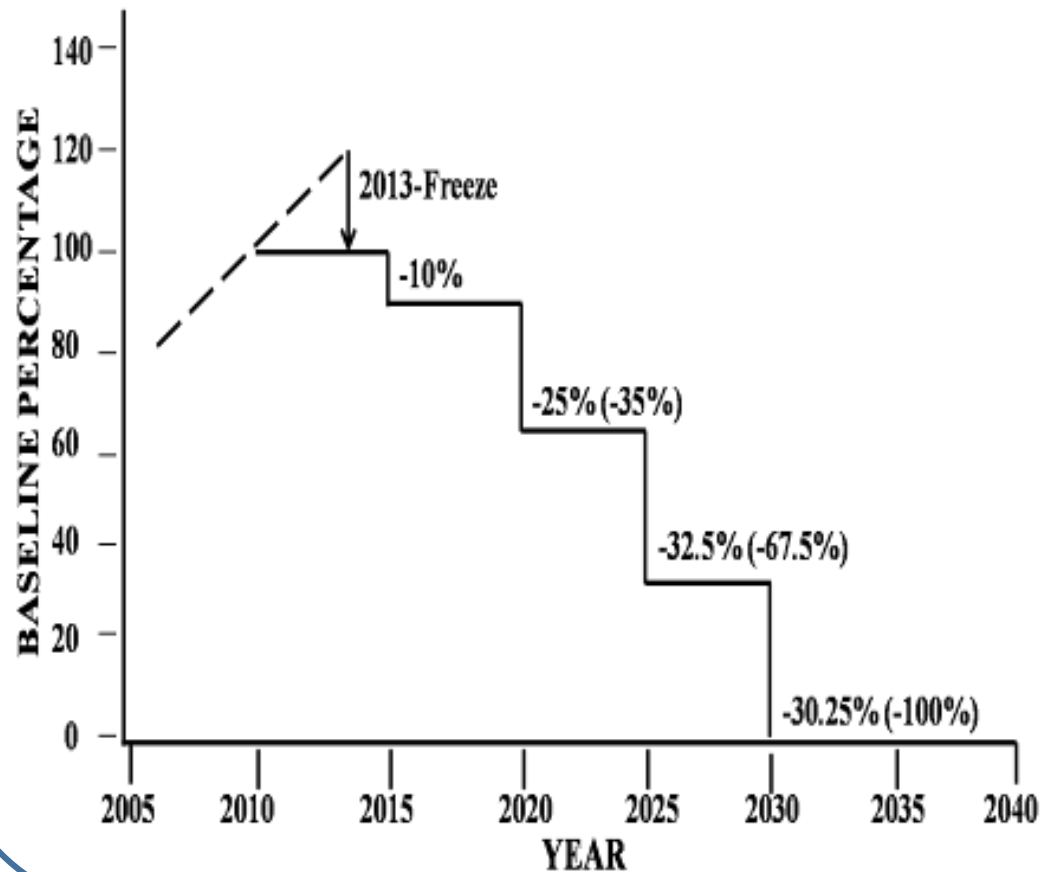


**AFFECT FISH AND
OTHER OCEAN
LIFE**

Montreal Protocol to Kigali Amendment

To Save Ozone Layer

CFCs, HCFCs, CTC, and many more



To Save Climate Change

Group I & II: HFCs like R-134a, R-404A, and many more

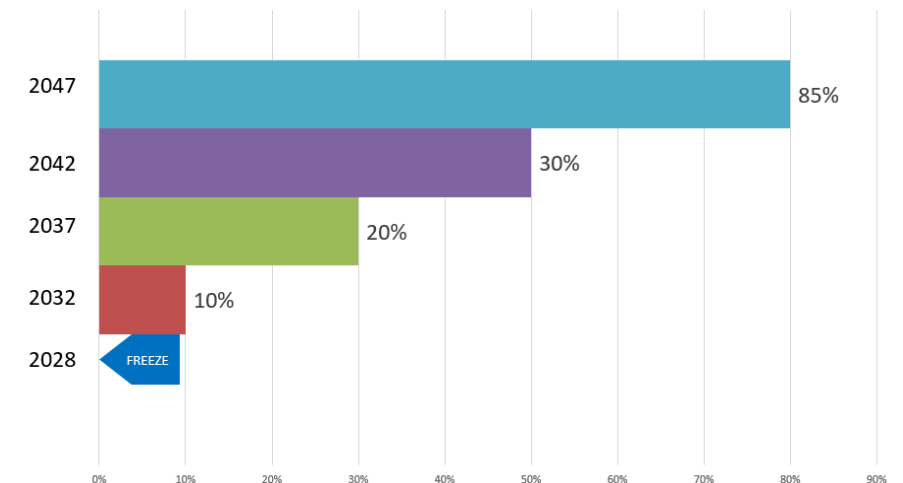
India Group 2 :

Base Year: 2024 – 2026

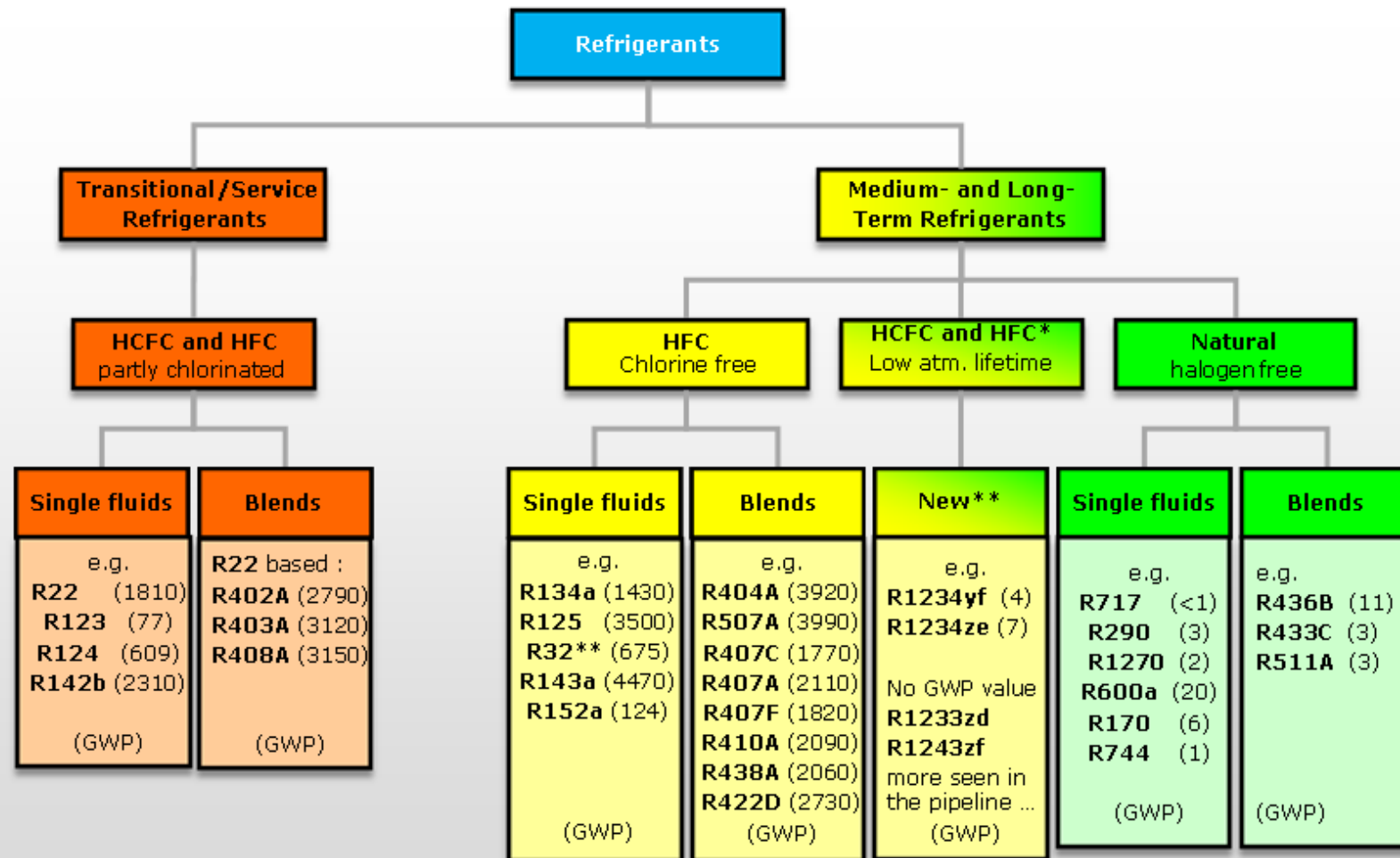
Baseline: Average HFC consumption for 2024- 2026 + 65% of HCFC baseline

Total Phase-down : 85% by 2047

Phase-down Schedule:



Transition towards environment friendly refrigerants and Technologies



* Also called HFO. Molecules contain weak double bonds causing a fast breakdown in the atmosphere

** R32 (HFC) and many of the new refrigerants are flammable or mildly flammable. Natural refr. are mainly flammable except R744.

Transition towards environment friendly refrigerants and Technologies



Adoption of more energy efficient technologies



Policy and regulations – supportive for technology adoption



Harness “System and component design”



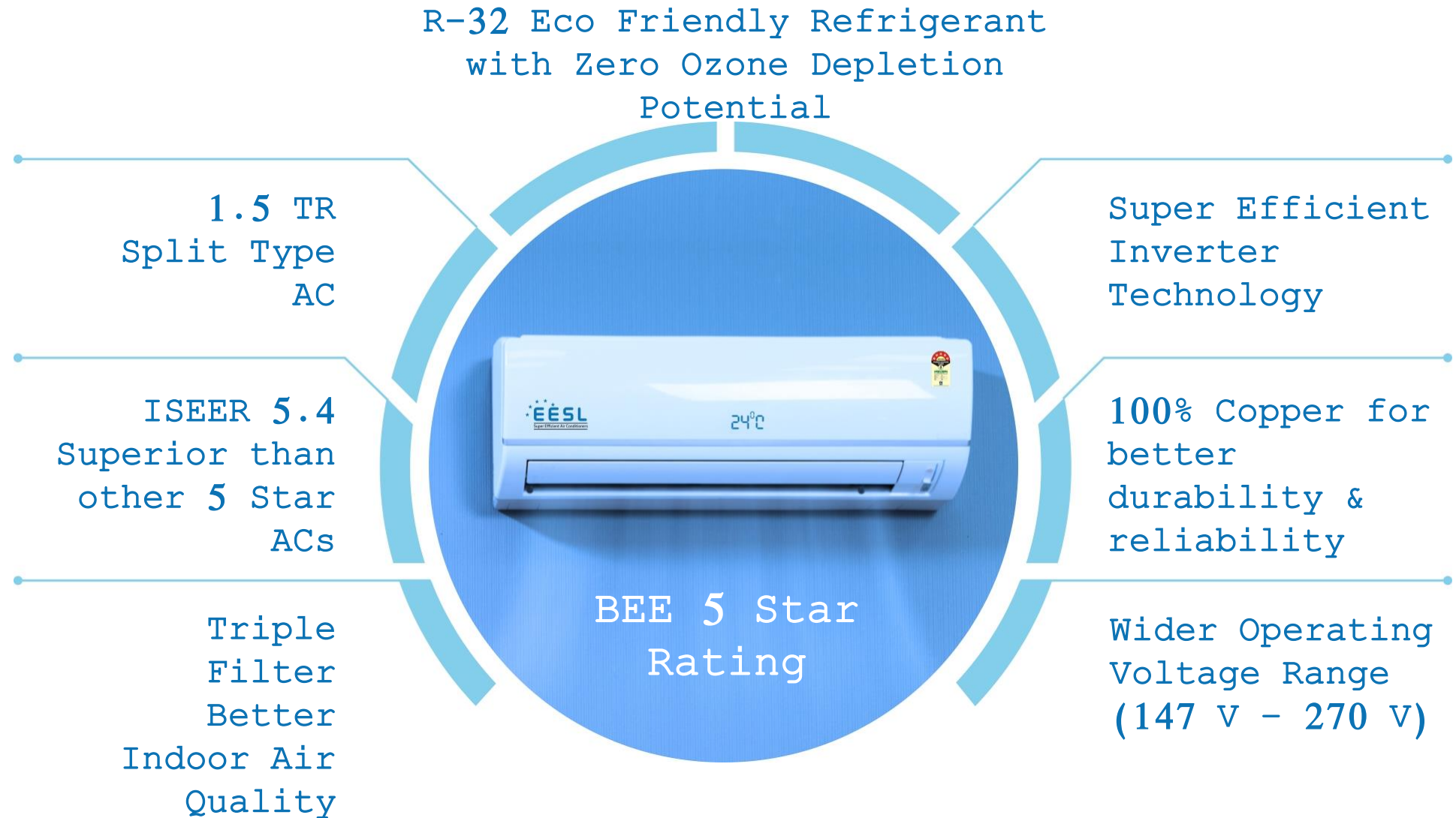
Less damage to the Environment



Higher Energy Efficiency Ratio (EER)



Green employment



R-32 Eco Friendly Refrigerant
with Zero Ozone Depletion
Potential

1.5 TR
Split Type
AC

Super Efficient
Inverter
Technology

ISEER 5.4
Superior than
other 5 Star
ACs

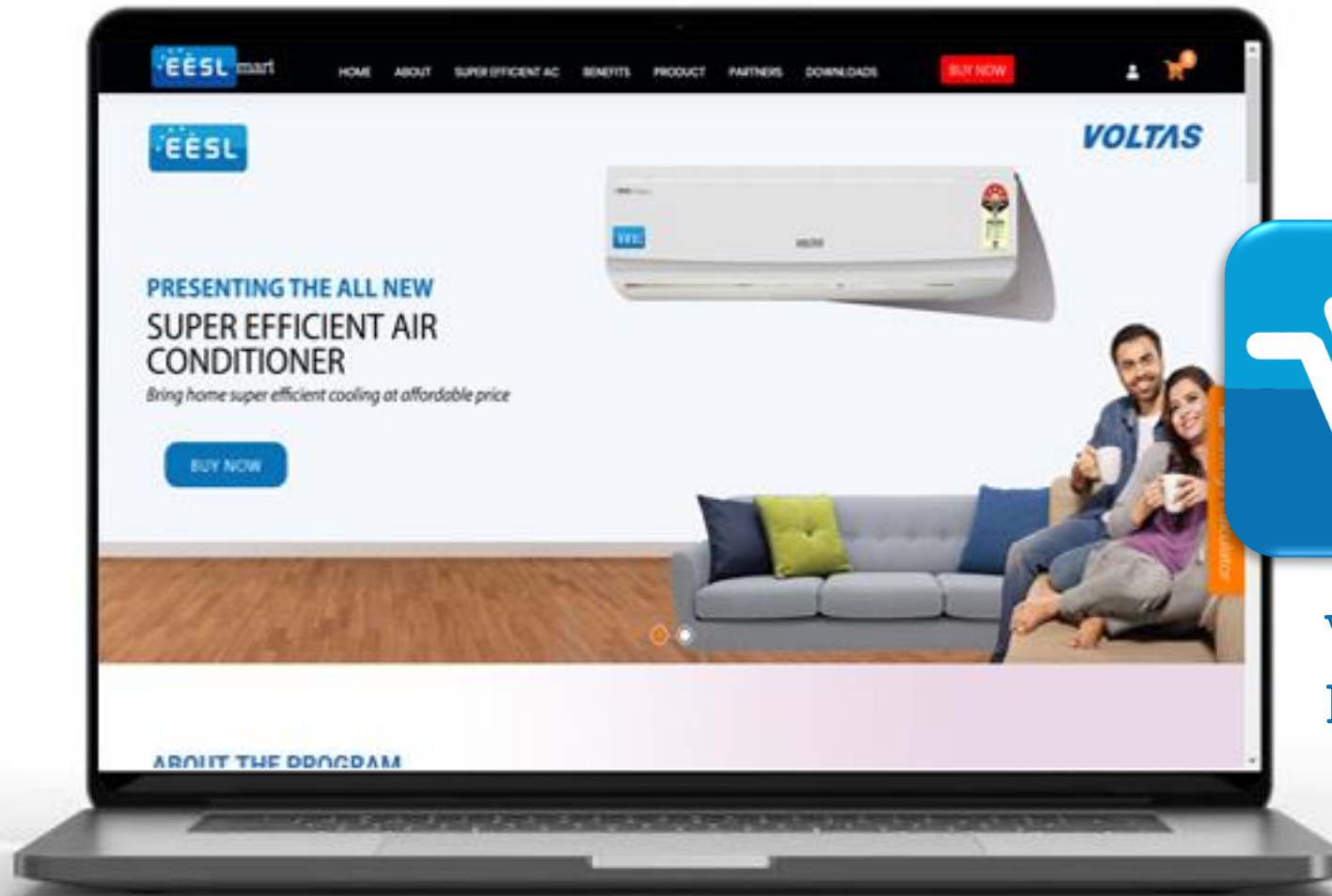
100% Copper for
better
durability &
reliability

Triple
Filter
Better
Indoor Air
Quality

Wider Operating
Voltage Range
(147 V – 270 V)

BEE 5 Star
Rating

FOR RETAIL PROCUREMENT



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GET IN TOUCH



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