



Efficiency and availability with NH₃ compressor packs

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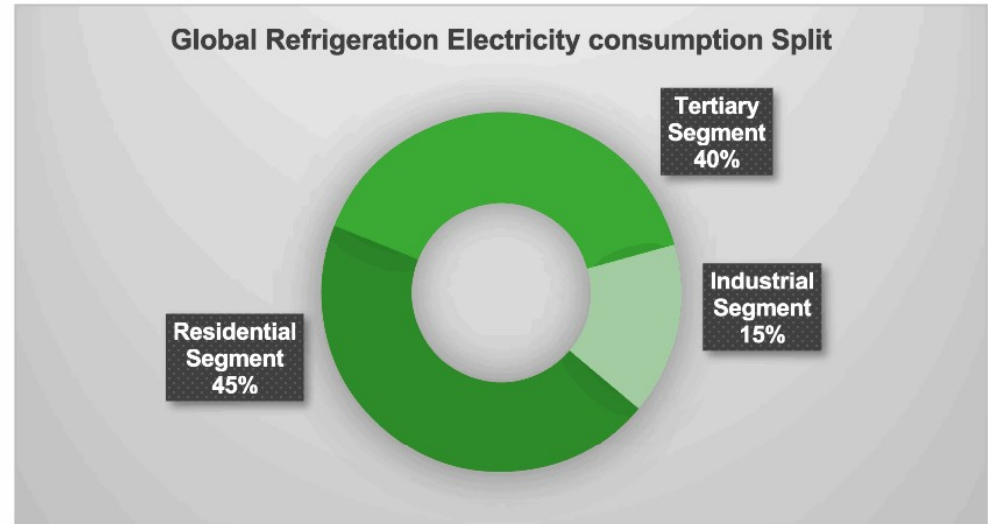
GLOBAL FACTS & PROJECTIONS



RAC accounts for ~17% of global electricity consumption



Global food production set to double by year 2050



Need for Refrigeration & A/C to grow multi fold



Electricity consumption by RAC systems will increase by factor of 3 to 5 in next decades

Source: IIR

EFFICIENCY 24/7

Full Load Process



Petrochemical

Semi-Full Load Process



Frozen Food Processing



Brewery



Dairy

Part Load Process



Leisure



Cold storage

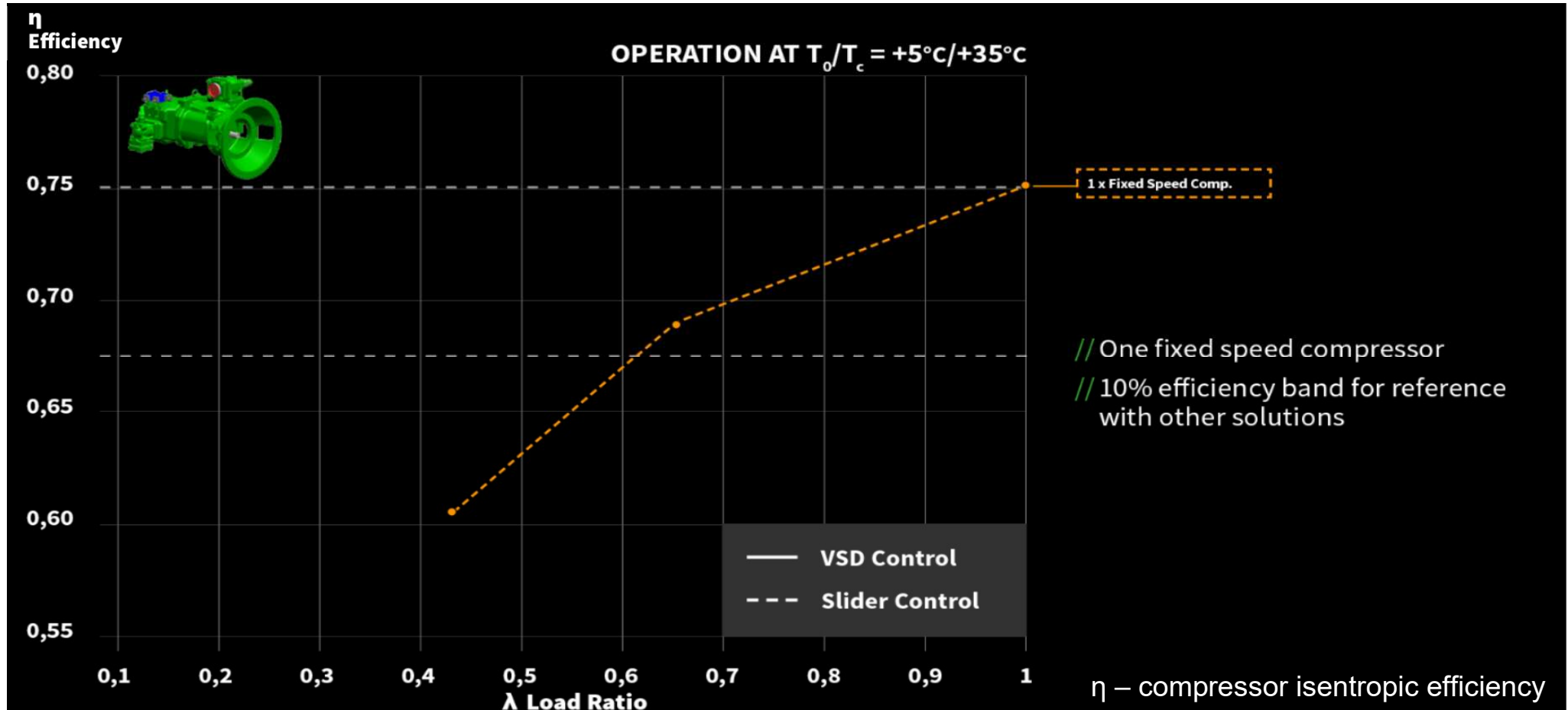


AC

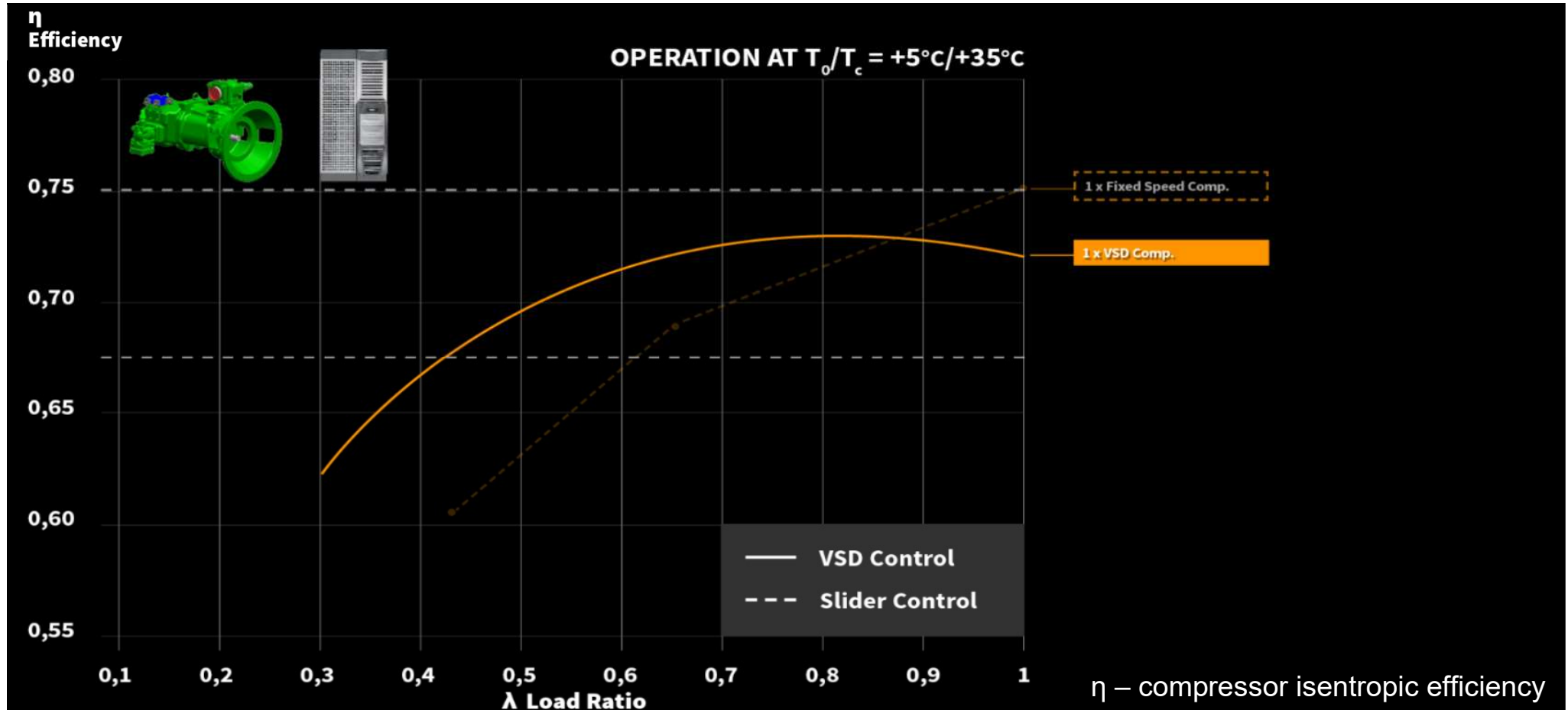
Part Load Efficiency needs to be as good as Full Load Efficiency in all applications

Variations in process load and ambient conditions drive the need for higher part load efficiency

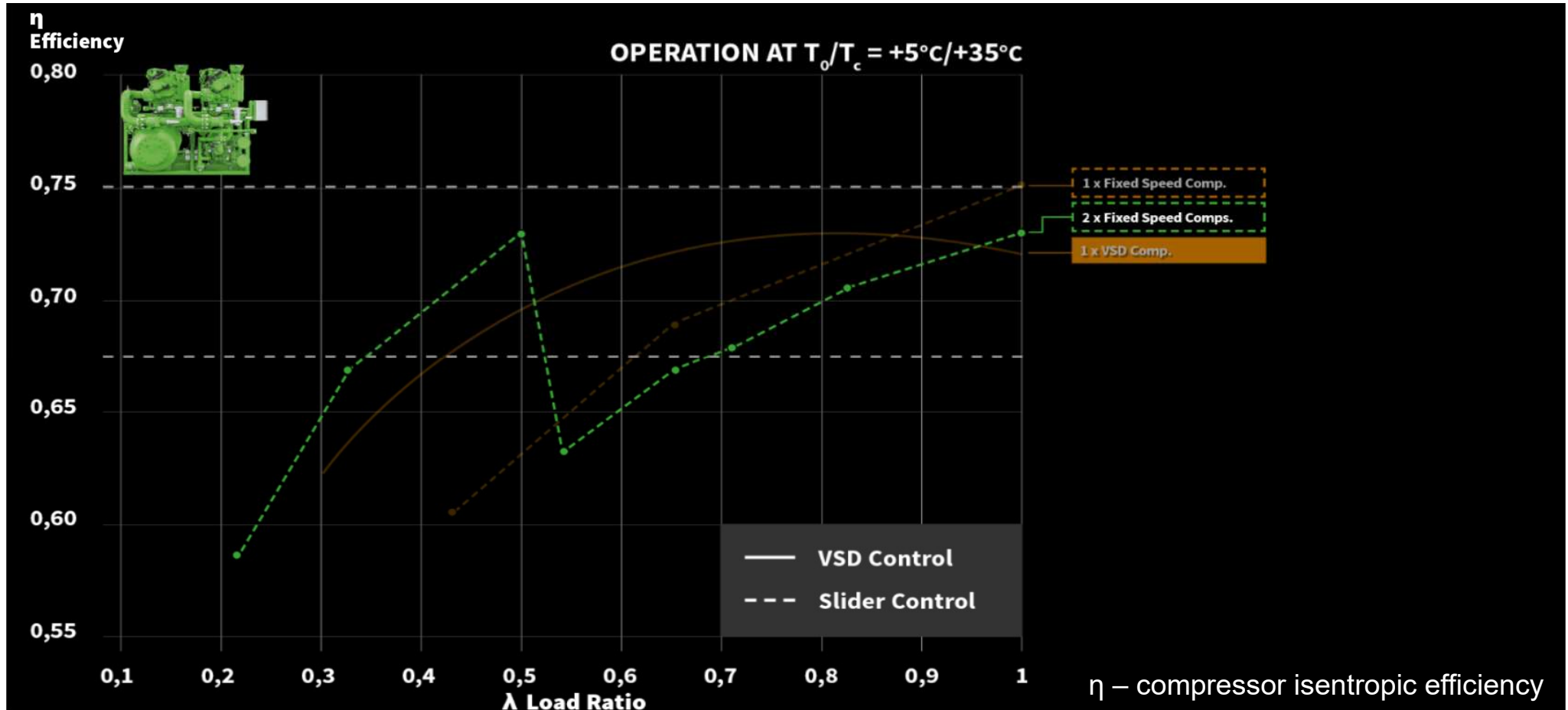
PART LOAD EFFICIENCY – 1 OR 2 COMPRESSORS



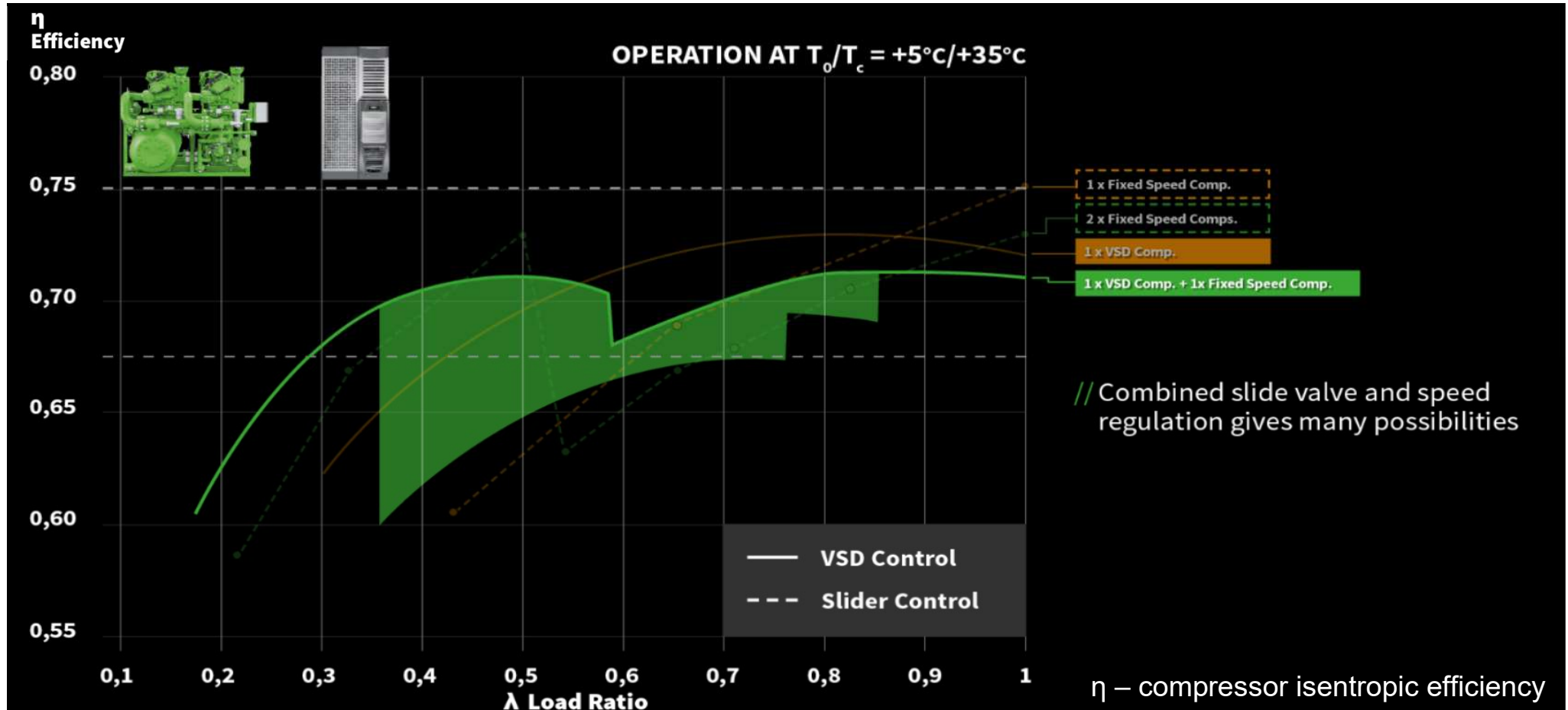
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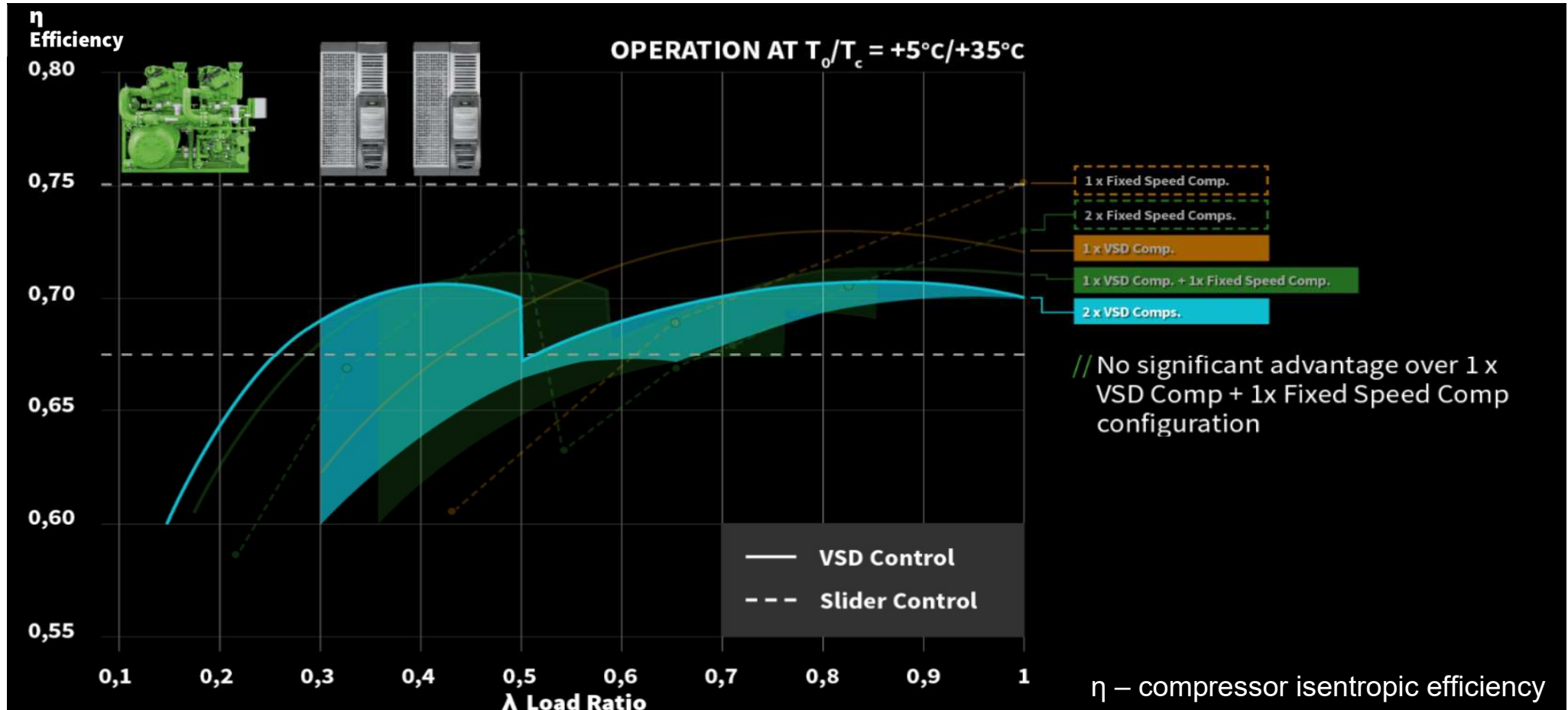
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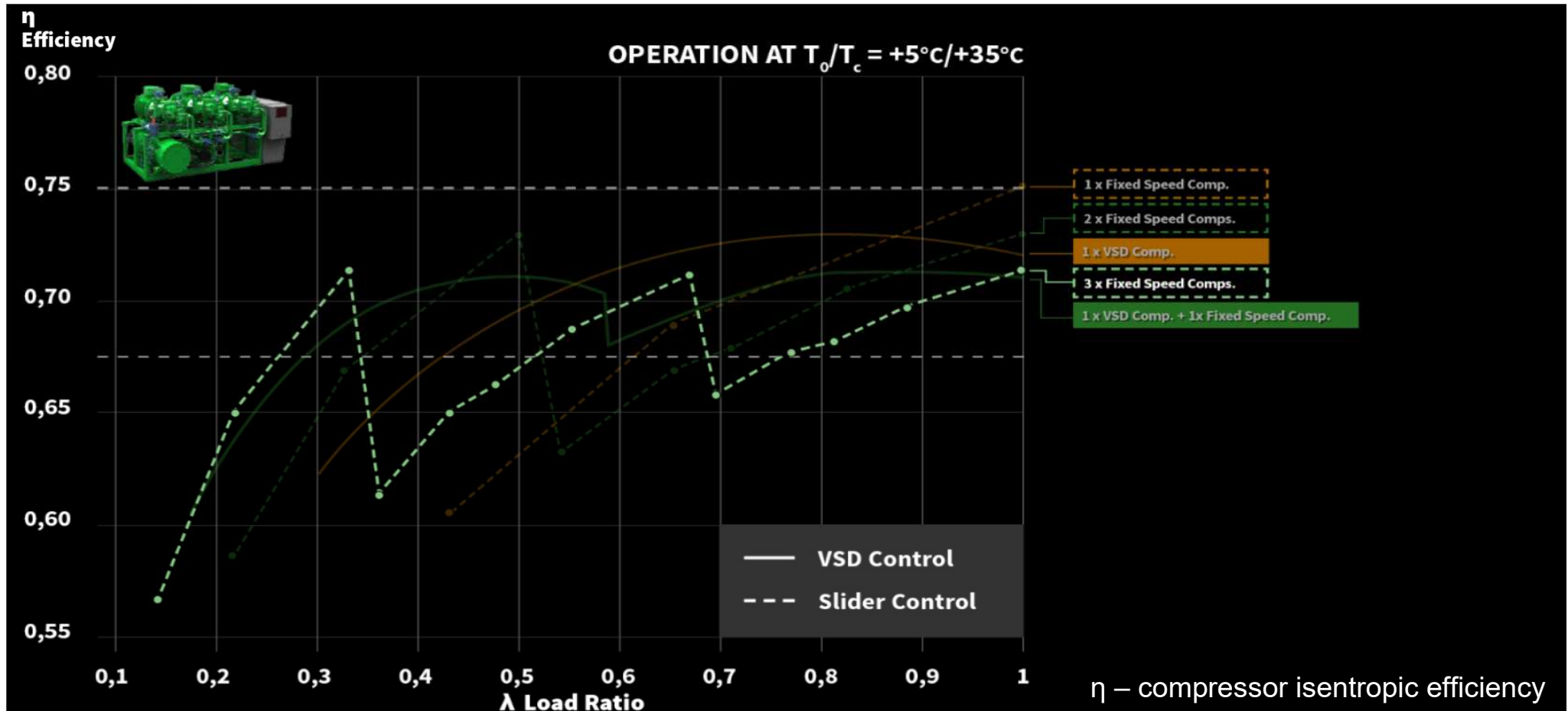
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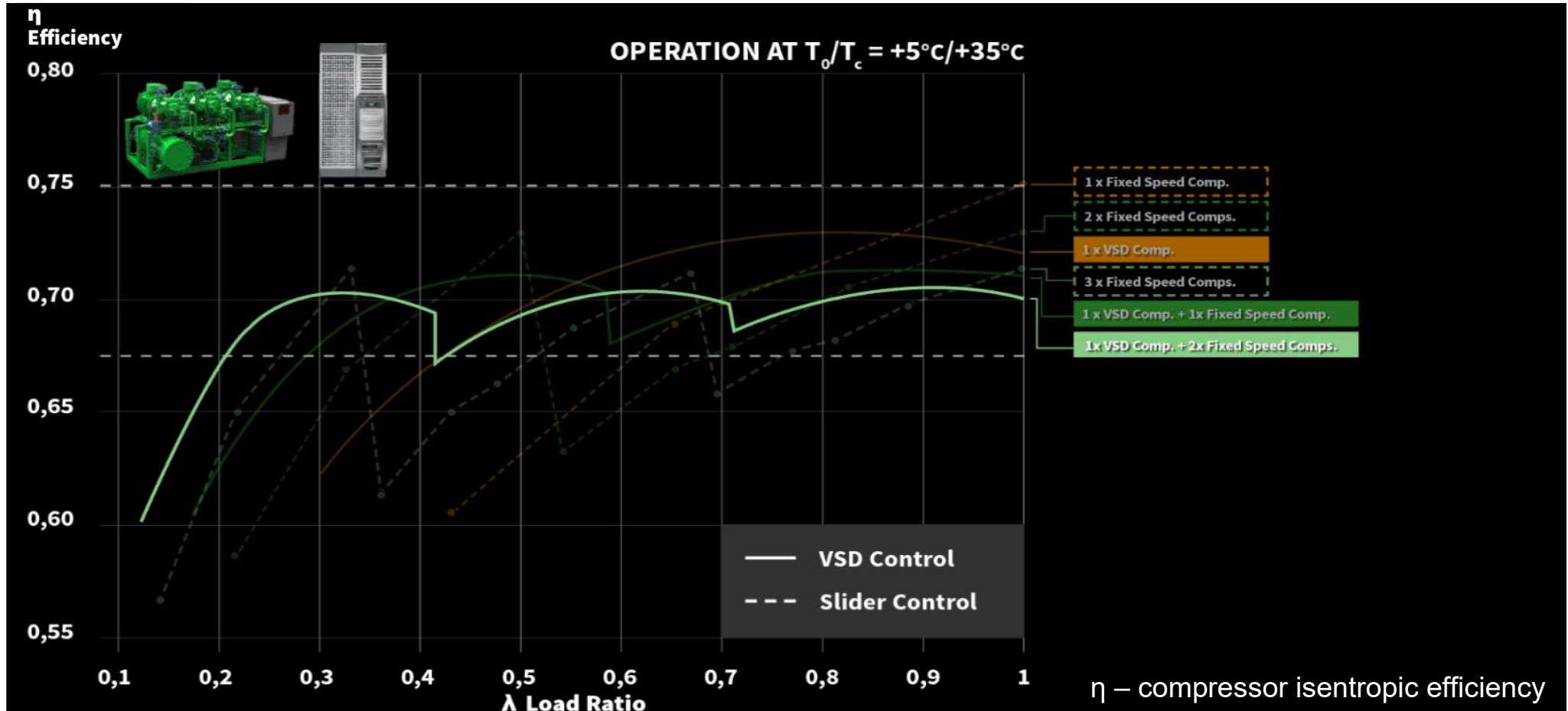
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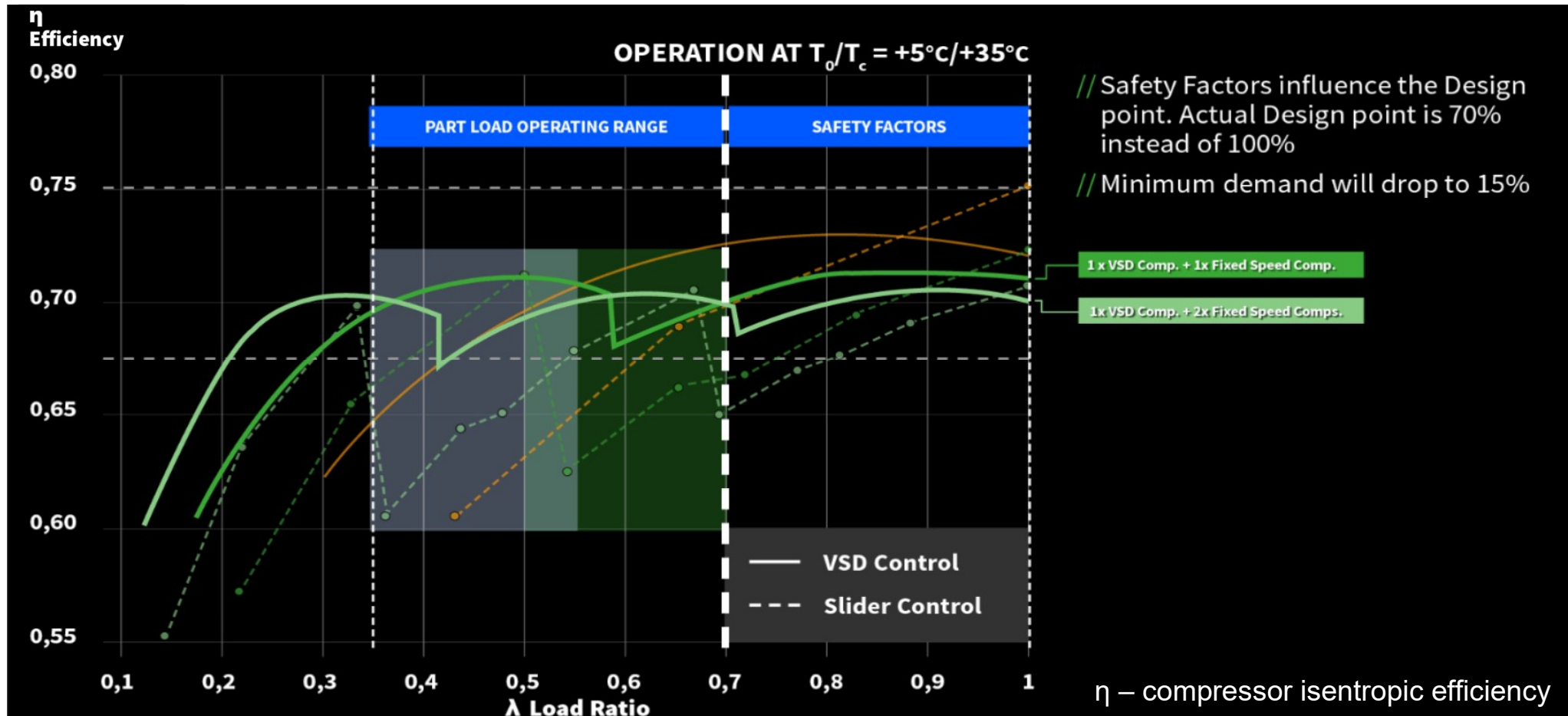
PART LOAD EFFICIENCY – 2 OR 3 COMPRESSORS



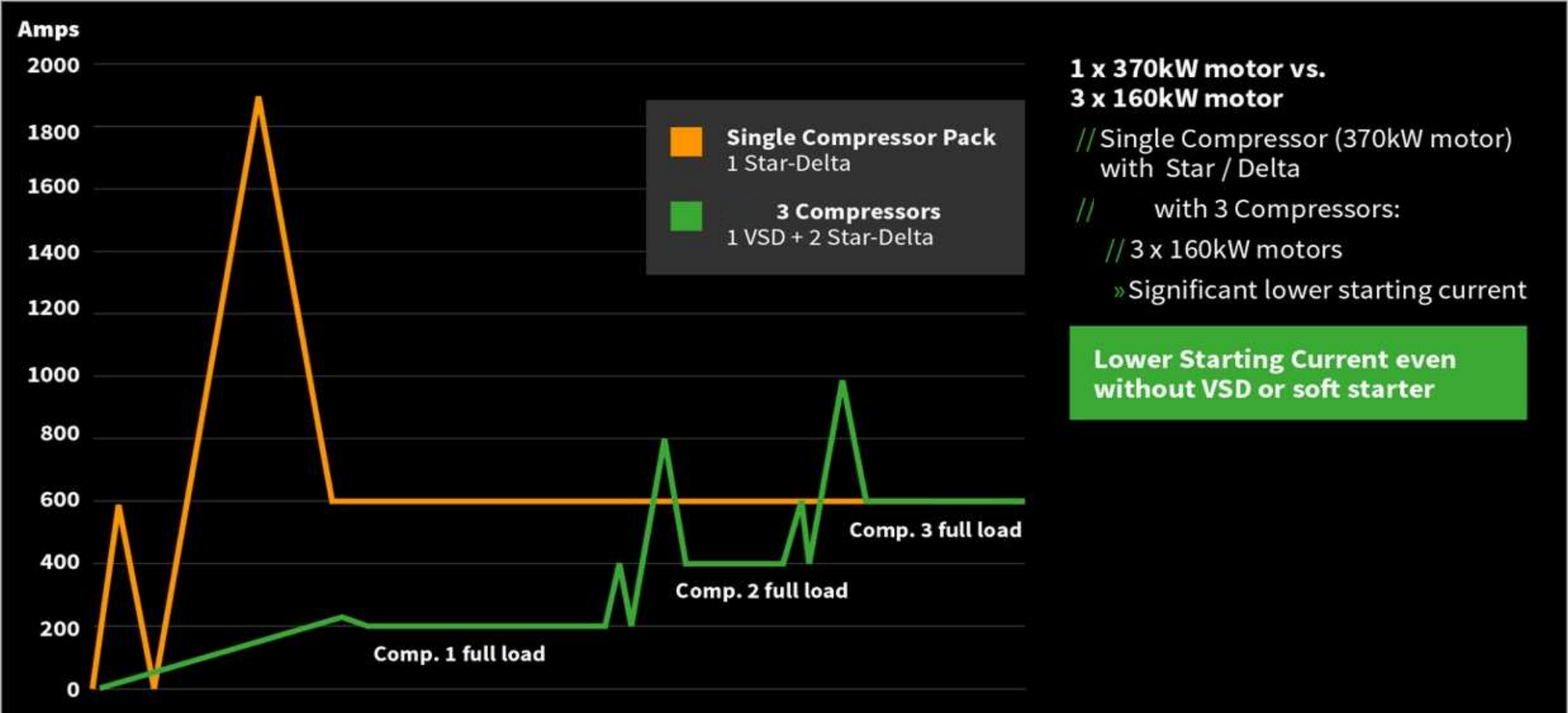
PART LOAD EFFICIENCY – 2 OR 3 COMPRESSORS



EFFECT ON OPERATION



LOWER STARTING CURRENT

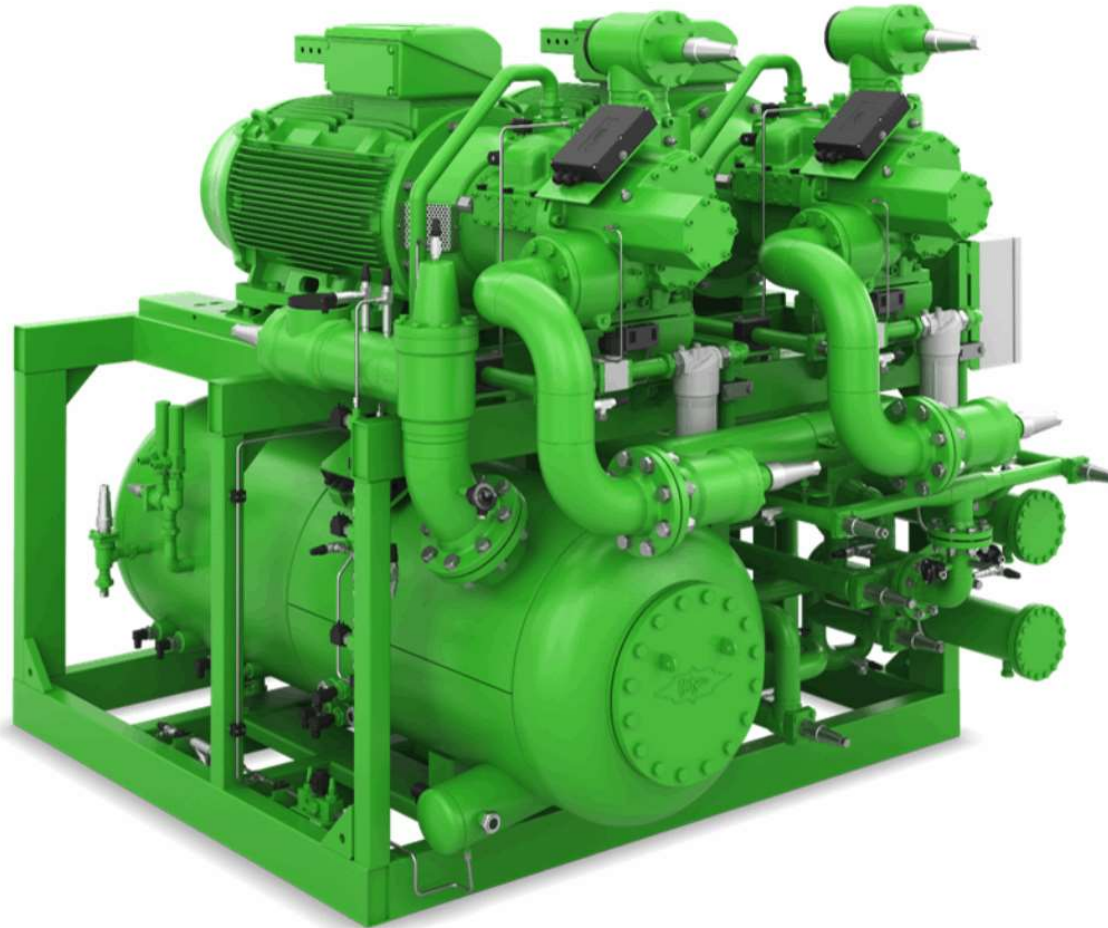


POSSIBLE SOLUTION: BITZER AMMONIA COMPRESSOR PACK (ACP)

Open type
compressor OS.A
85 or 95 series with
flanged IE3/IE4
motors

Rigid box profile
frame
All discharge, oil
and control pipes
incl.

Oil separator OAHC
series



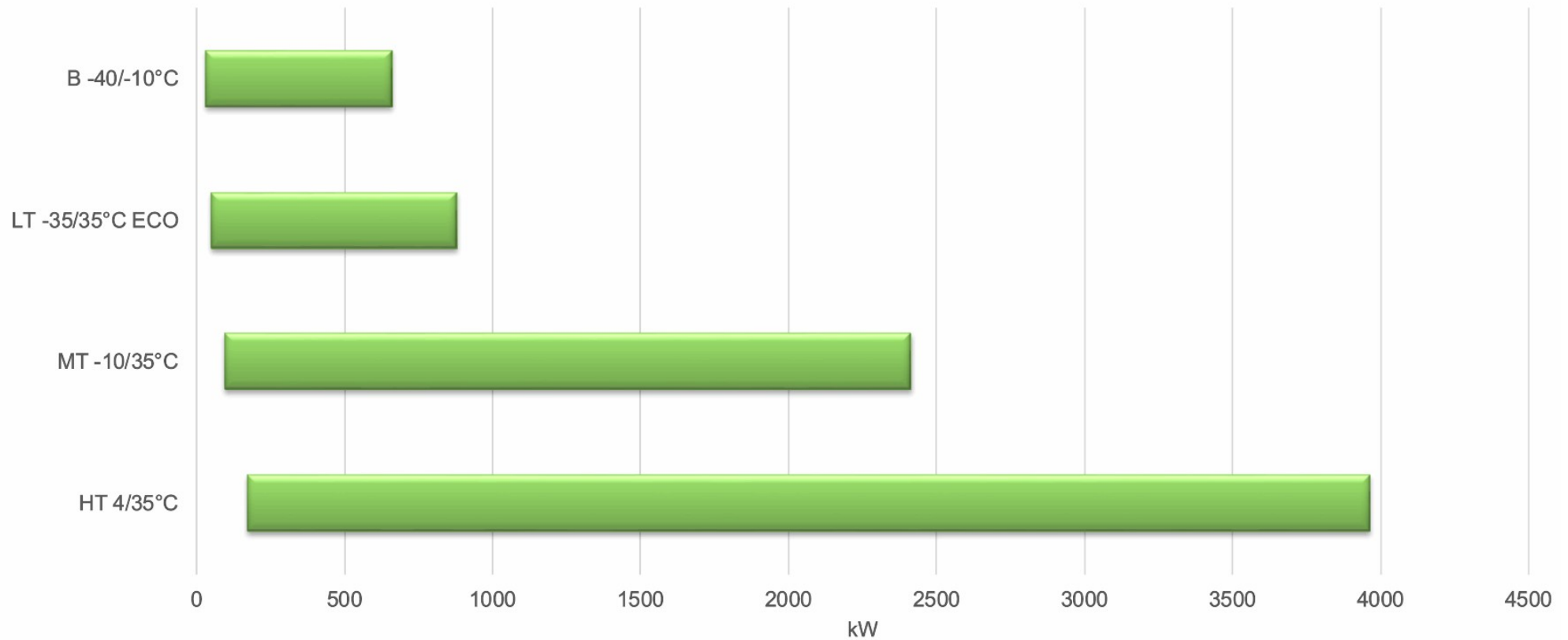
IQ Technology on
compressors and oil
separator prewired
& tested

ACP LINK for
optimum efficient
operation and
application envelope
surveillance

Oil cooler and oil
mangement system

ACP CAPACITY RANGE IN KW

Cooling Capacity @ 50Hz



ACP INSTALLATIONS



Dairy - Denmark
6 x ACP95103K-2C
 $Q_o=12.000 \text{ kW}$; $t_o=-0,5^\circ\text{C}$; $t_c+30^\circ\text{C}$



Poultry Slaughterhouse - South Africa
2 x ACP95103B-3V for $Q_o=824 \text{ kW}$; $t_o=-40^\circ\text{C}$; $t_c=-5^\circ\text{C}$
1 x ACP95103K-3V for $Q_o=2.217 \text{ kW}$; $t_o=-5^\circ\text{C}$; $t_c+34^\circ\text{C}$

OS.A105 - A NEW GENERATION OF BITZER AMMONIA SCREW COMPRESSORS



// Natural Refrigerant

- NH₃ // R717
- Applicable to *Low Charge NH₃* systems

// Higher Cooling Capacity

- up to *8.000 kW* in A/C application with 3 compressors

// A new level of Full- and Part-Load Efficiency

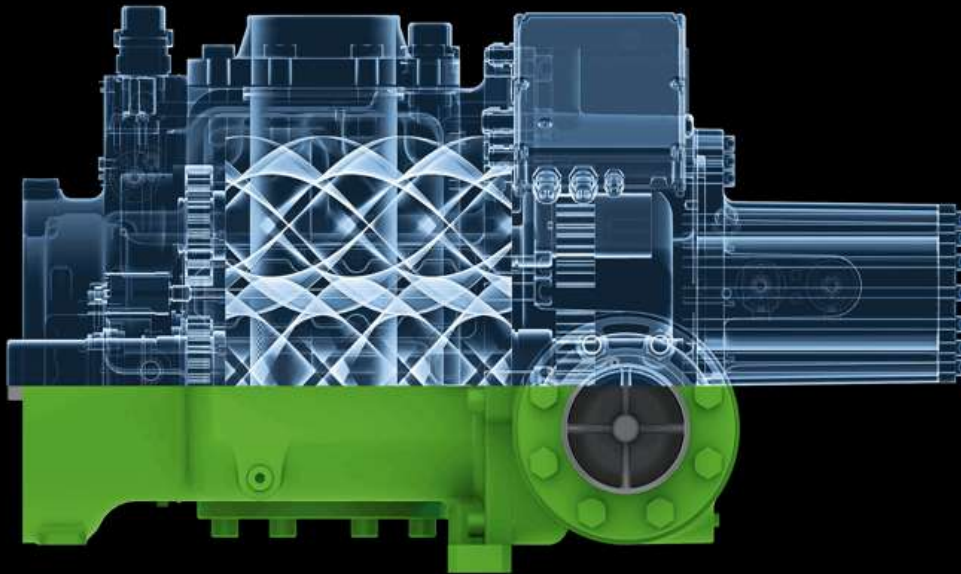
- combined Vi + CR Slider Technology
- optimized for VSD operation

// Easy to use

- On-board IQ Module
- Easy Datalog and Communication
 - BEST
 - Modbus



ARE THERE ANY QUESTIONS?
COMMENTS, IDEAS OR INPUT?



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eurammon e. V. is always available as a sparring partner for questions on refrigeration with natural refrigerants.

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