



enerco

smart a/c efficiency

COMPANY OVERVIEW

October 2025

ENER.CO COMPANY OVERVIEW

Ener.co® was founded in New York City in 2009, driven by the demand for more effective and durable coating solutions for HVAC/R applications. Since then, Ener.co® has become a recognized leader in protective thermal coatings for heat exchangers across the United States.

Building on this proven foundation, Ener.co Nederland B.V. was established to serve the European and Middle Eastern markets from our headquarters in Rotterdam, The Netherlands

Ener.co® is offering a unique approach to sustainable HVAC/R performance with European engineering standards.



ENER.CO COMPANY OVERVIEW



Vision

Attack one of the biggest opportunities to reduce the carbon footprint of the world's buildings by accelerating the adoption of resilient cooling systems.

Mission

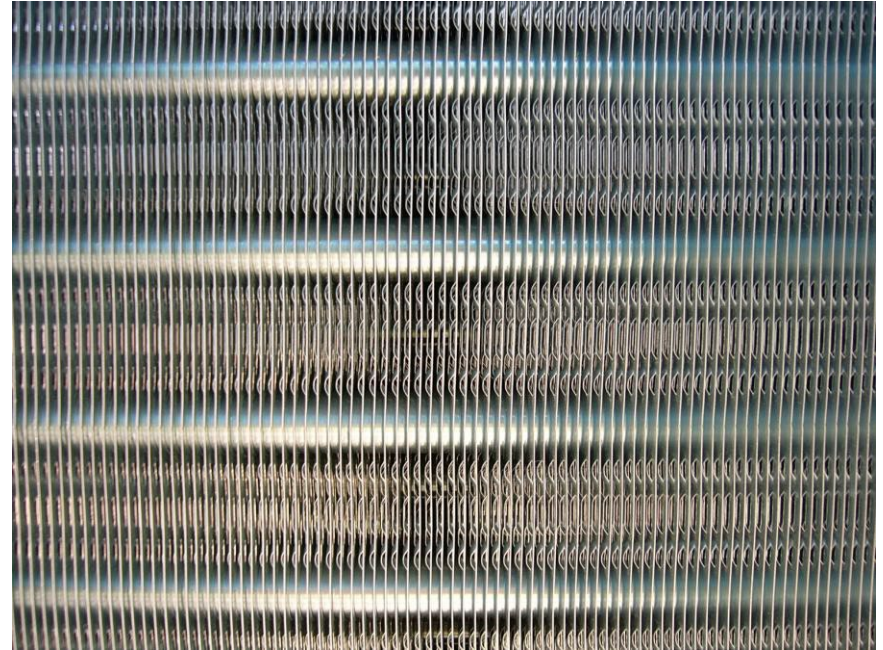
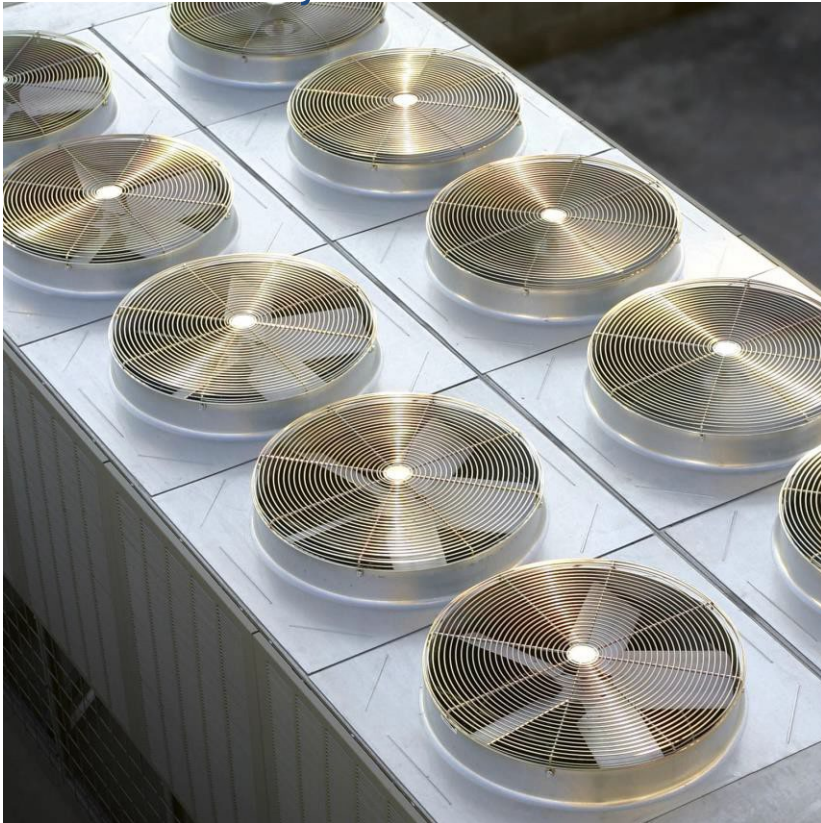
Maintain optimal performance of air conditioning units by protecting and enhancing their air-side heat exchangers, the largest unprotected engineered surface in the world.

MARKET PROBLEM



THE MARKET PROBLEM

Dirt and Corrosion degradation begins on the first day of installation – coils can only be found in the condition shown below when new out of the factory



Overlooked Problem: Dirt and Dust Build-Up

Dirt and dust buildup is a silent but serious issue that significantly reduces cooling capacity and increases energy consumption.



WHAT IS CORROSION?

- Corrosion is a natural and destructive process in which a refined metal is converted into a more stable form
- Corrosion affects all types of metals – even corrosive resistant metals – over time and under certain conditions
- **Heat transfer significantly degraded compared to base metal**

Environmental



- Reaction with environment: salt, pollution w/oxygen
- Formation of a non-protective layer on the material surface – process called “passivation”

Galvanic



- Fin-to-tube decoupling
- Two dissimilar metals: copper and aluminum
- Electrolyte: humidity and rain
- The less noble material will dissolve: aluminum

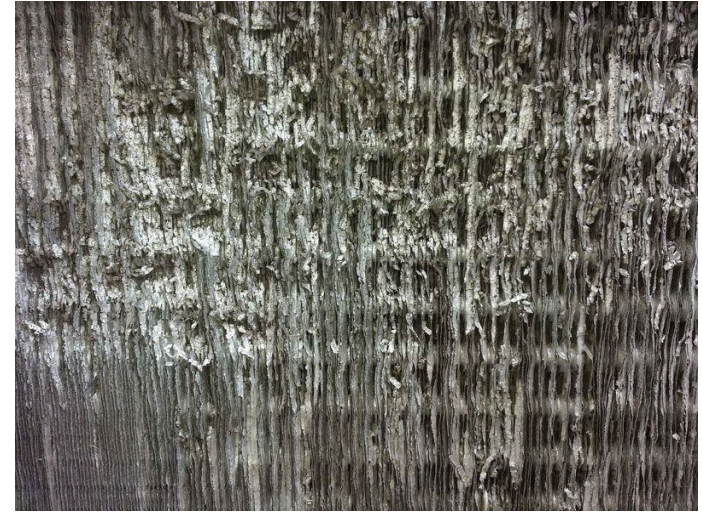
SITUATION: REALITY IN THE FIELD

Even with factory coatings (pre-paint), corrosion will ultimately prevail



CORROSION: THE IMPACT

- Heat exchange coils will corrode if left untreated
- When they corrode, the machine works harder to produce the same level of cooling
- As it works harder it burns more energy, compressors and fans break down more quickly, and it struggles to maintain indoor comfort levels



The results are:

- Higher energy costs
- Higher maintenance costs
- More frequent service interruptions
- Inconsistent comfort levels

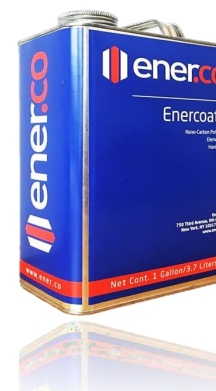
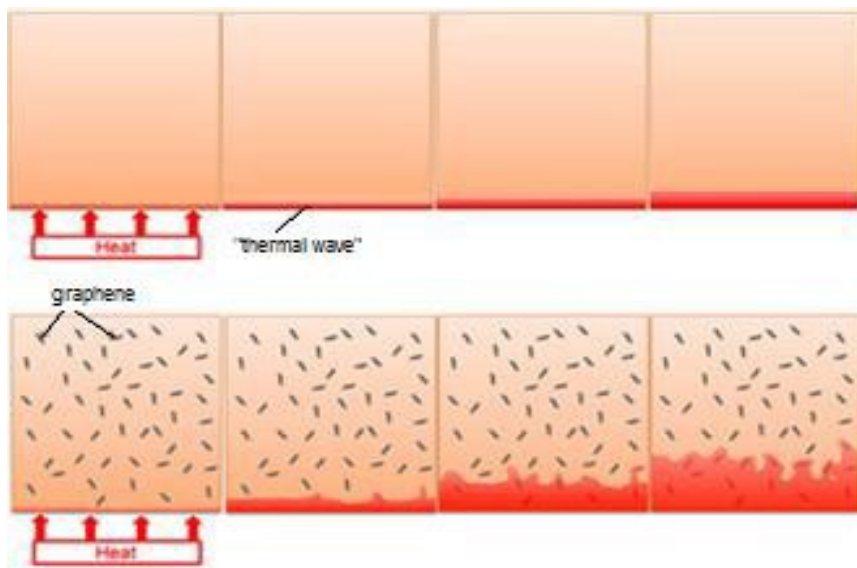


MARKET SOLUTION



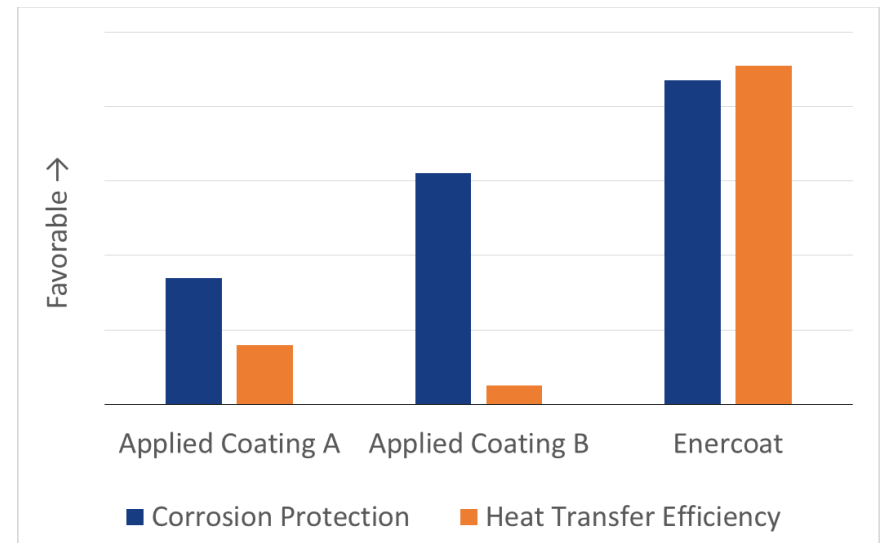
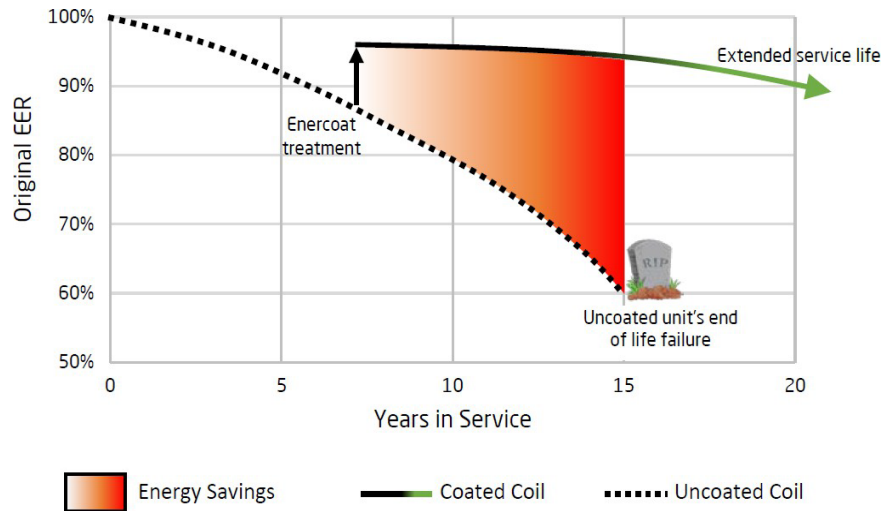
ENERCOAT'S COMPETITIVE ADVANTAGE

- Traditional coatings are applied very thinly to minimally reduce the heat transfer at the expense of corrosion protection
- Alternately, traditional coatings can be applied with greater thickness for more protection, though suffer significant heat transfer efficiency loss (upwards of 10%)
- Enercoat provides superior corrosion protection without a tradeoff with heat transfer efficiency



TEST	STANDARD	PERFORMANCE
Salt Spray Test	ASTM B117	3,000+ Hours
Cross Hatch Adhesion	ASTM D5339	4B-5B
Specular Gloss	ASTM D523-89	High gloss black
Film Hardness	ASTM D3363-92A	Superior hardness of 2H
Thermal Properties	ASTM C177	14.7 W/m*K thermal conductivity

CORROSION LEADS TO INEVITABLE COST INCREASE



TREATMENT PROCESS



ENERCOAT: A SIMPLE TREATMENT PROCESS



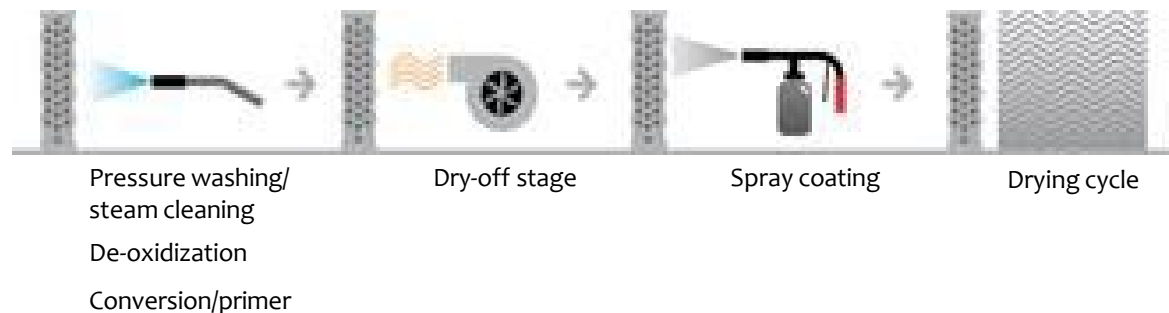
1 mil thick coating applied by spray application for deep uniform and durable result.

Non-Invasive One-Time Application

- Fin alignment and mechanical repair
- Hydrojet coil cleaning
- Foam/pressure clean
- Deoxidization
- Etching
- Spray Application – full penetration

YouTube Link:

https://www.youtube.com/watch?v=6_3WVoXxhDk&list=PPSV&ab_channel=Enercool



ENERCOAT: A SIMPLE TREATMENT PROCESS



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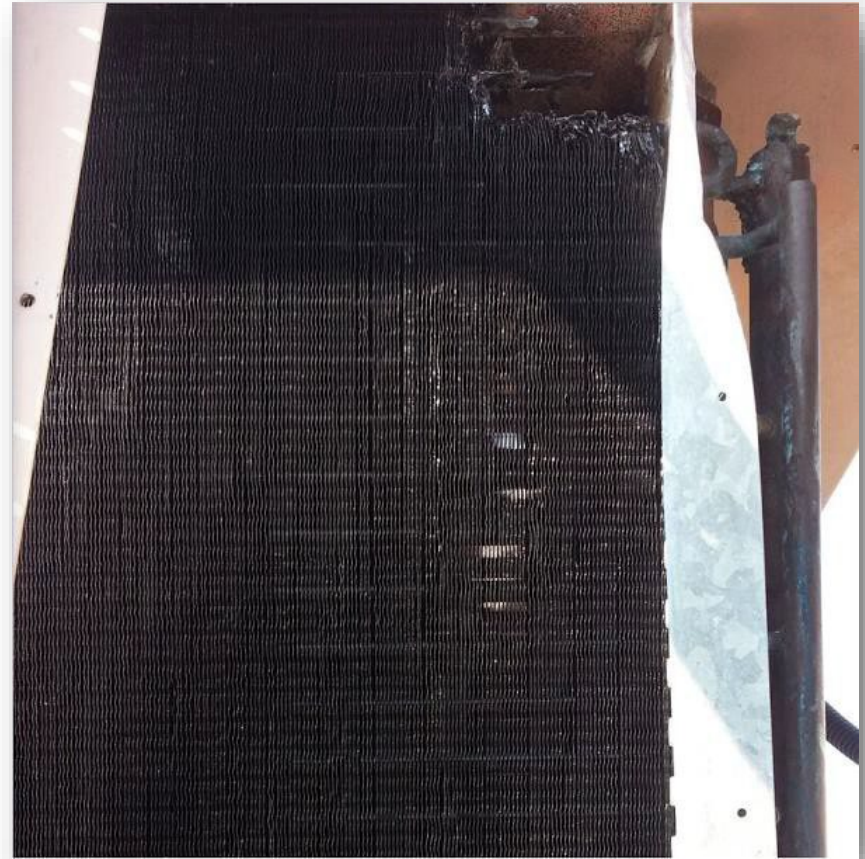


ENERCOAT: A SIMPLE TREATMENT PROCESS



THE IMPACT: BEFORE AND AFTER

Before and after treatment of condenser coil of 11 year-old



MEASUREMENT AND VERIFICATION

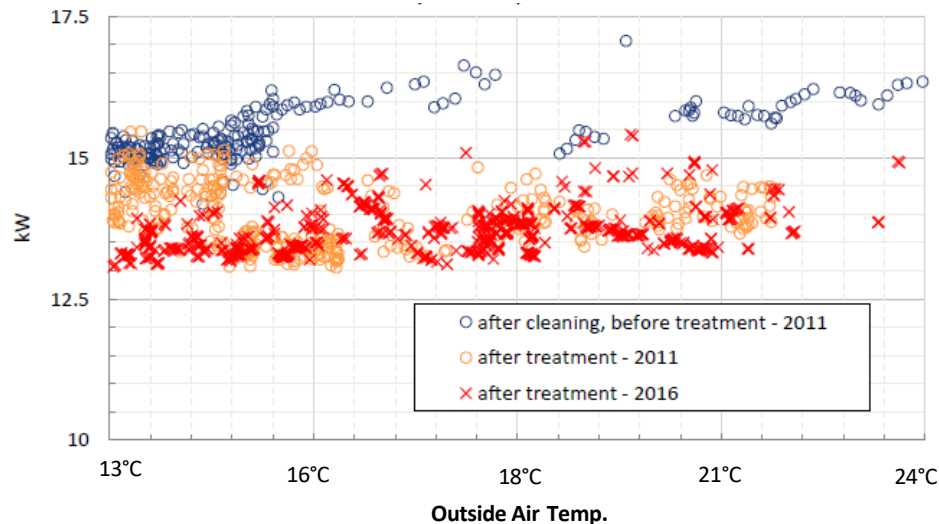


LONG-TERM PERSISTENCE OF PERFORMANCE

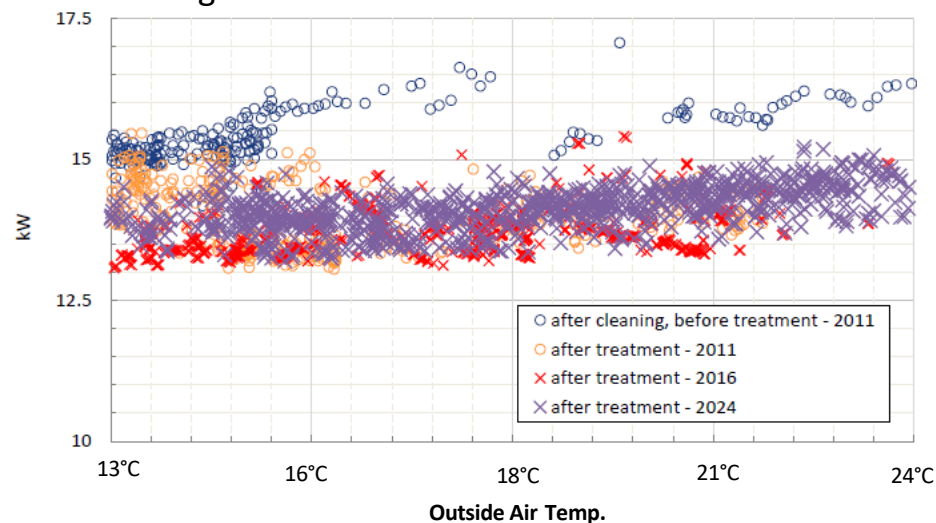
Unit's performance was found to remain nearly unchanged after 13 years

- Air-cooled condenser treated in 2011 (NY Blood Center)
- Baseline data after cleaning, before treatment

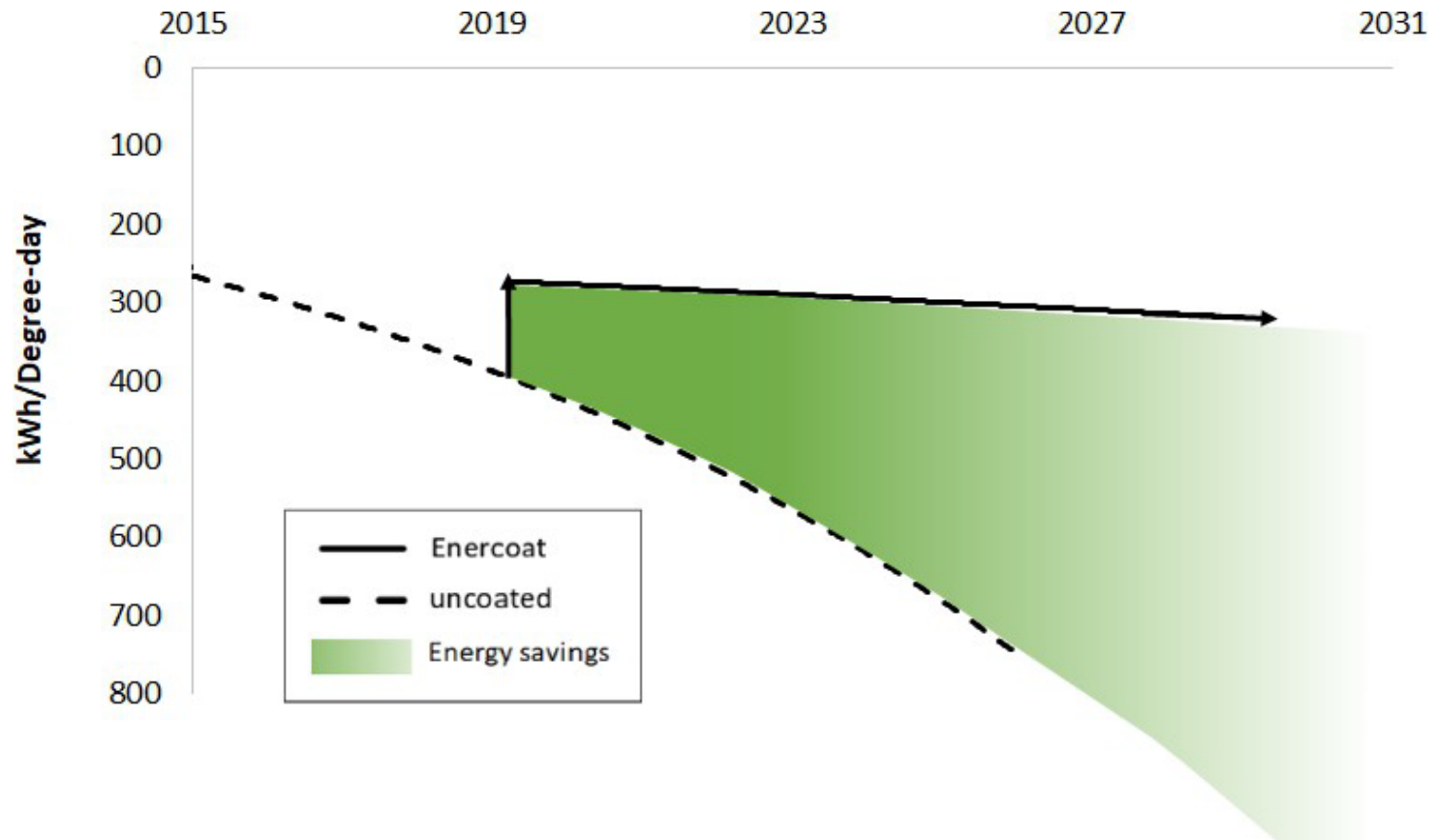
Compressor Power
Immediate Impact – 2011 vs. 2016



Compressor Power
Long-Term Persistence – 2011 vs. 2016 vs. 2024



LONG-TERM PERSISTENCE OF PERFORMANCE



Awards:



CLP Smart Energy Award 2022 - Innovation Award,
through EnerCool Nano-coating treatment solution

Enercoat® Nano-coating Treatment Example



Actual Case	Efficiency Enhancement	Payback Period
Regal Hong Kong Hotel	30%	1 Year
Hong Kong International Airport	15%	1.5 Year
Equinix	15%	1.5 Year

Innovation Award 2022 Enercoat Treatment Hong Kong



Innovation and Sustainability Award 2024



Netherlands
Business Council UAE

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