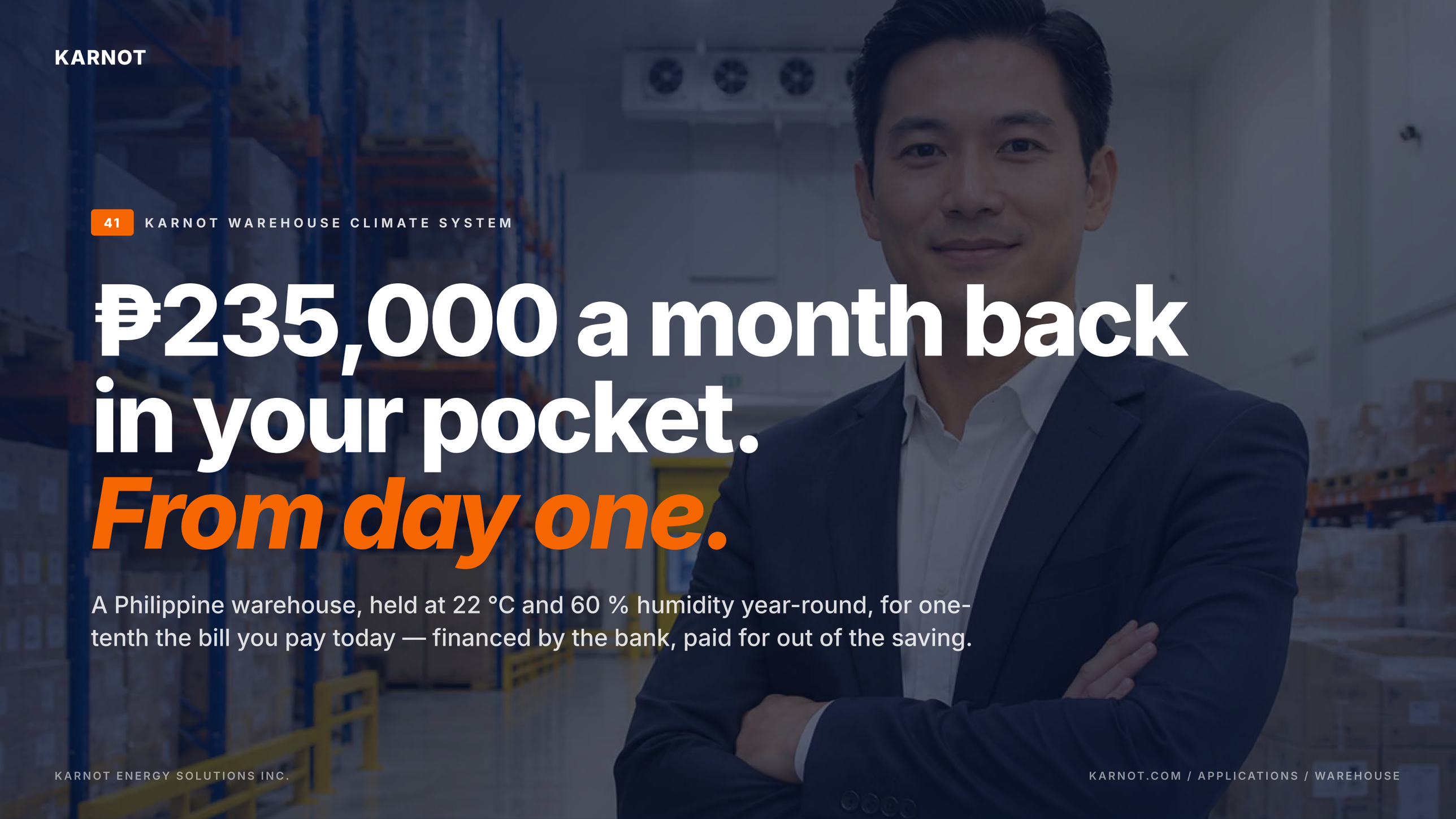
KARNOT

41 KARNOT WAREHOUSE CLIMATE SYSTEM

₱235,000 a month back in your pocket. *From day one.*

A Philippine warehouse, held at 22 °C and 60 % humidity year-round, for one-tenth the bill you pay today — financed by the bank, paid for out of the saving.



KARNOT

THE PROBLEM YOUR SPLITS CAN'T FIX

22 °C is easy. *60% humidity is the killer.*

A split aircon takes heat OUT of your warehouse and dumps it OUTSIDE. That's cooling. But your warehouse spec isn't cooling — it's **22 °C and 60% humidity continuously**. To take water out of the air you have to cool the air below its dew point (~12 °C), drop the moisture as condensate, then warm the dry air back up to 22 °C before it enters the room. Splits do half of that. They cool. They don't reheat. So the room hits 22 °C and 80% humidity, the moisture stays in the air, and cardboard sags, labels peel and mould blooms on the packaging.

Splits don't actually dehumidify

Latent load (moisture) is bigger than sensible load (temperature) in a PH warehouse — **Sensible Heat Ratio 0.42**. Split AC has SHR 0.7–0.85; they remove mostly heat, not water. Result: **22 °C achieved, 60% humidity not.**

Splits cool a corner, not the building

Each split cools a 50–100 m² slice while the rest stays hot. **Stacked product traps heat near the ceiling.** Aisle temperatures vary 6–8 °C between bays. A central air handler with proper duct distribution holds the whole space uniform; six wall splits cannot.

KARNOT

THE SYSTEM THAT DOES BOTH · COOLING AND REHEAT

One heat pump. Two thermal batteries. *AHU does the rest.*

ONE IHEAT R290 · CHARGES COLD AND HOT AT THE SAME TIME · AHU PULLS FROM BOTH

COLD THERMAL BATTERY

3 × iSTOR M500-Cold @ 22 °C

Coconut-oil PCM, 22.5 kWh thermal. Charged by the iHEAT **evaporator side**. Feeds the AHU cooling coil.

1 × IHEAT R290

Reversible heat pump in heat-recovery mode — makes cold AND hot at the same time, from one kWh.

HOT THERMAL BATTERY

1 × iSTOR M500-Hot @ 44 °C

Lauric-acid PCM, 12 kWh thermal. Charged by the iHEAT **condenser side** — the heat that would normally be dumped to ambient is captured here as **free reheat**.

WARM HUMID AIR IN

From the warehouse · **28 °C / 80% RH** typical wet-season return

AHU · COOL-THEN-REHEAT

Cool to 12 °C · drop moisture · reheat to 15 °C supply

COOL DRY AIR BACK

22 °C / 60% RH continuously · spec held year-round

KARNOT

THE FOUR BOXES · PER 200 M² ZONE

What we install. *Per zone, repeated.*

Karnot iHEAT R290

The heart · 18.5 kW reversible

One R290 heat pump per zone. Makes the cold AND the hot at the same time via heat recovery. Outdoor, no separate enclosure, 1.4 kg charge.

iSTOR M500 × 4

The thermal batteries · 3 cold + 1 hot

Store cold and hot through the day on solar, discharge through the night with the compressor off. **Decouples WHEN it runs from WHEN you need it.**

Cool-and-reheat AHU

The dehumidifier · 2,610 m³/h

Two coils in one box. Cooling coil knocks the dew point out; reheat coil brings the dry air back to room temp. The bit splits don't have.

iVOLT Solar · load-matched

15 kWp per zone · zero-export

Sized to match the iHEAT's electrical demand — **no export to the grid**. All the PV gets stored in the thermal batteries and used at night.

KARNOT

A 1,000 M² PH WAREHOUSE · FIVE 200 M² ZONES · WHAT YOU STOP PAYING

Same product, same spec. *One-tenth the bill.*

ANNUAL FIGURE · FULL WAREHOUSE	TODAY · SPLIT-AC FLEET	KARNOT WAREHOUSE CLIMATE SYSTEM	YOU STOP PAYING
Electricity to hold 22 °C / 60% RH	₱3,145,000	₱325,000	**₱2,820,000**
Saving per month (over 12 months)	—	—	**₱235,000 / month**
Reduction	baseline	−89%	**10× less / kWh delivered**
Annual electricity cost	**₱3.14 M**	**₱0.33 M**	**₱2.82 M/yr**

Modelled · 1,000 m² PH tropical warehouse, five 200 m² zones at 22 °C / 60% RH 24/7 · Meralco GP commercial tariff April 2026 (~₱14/kWh including 3-phase premium). Per zone: 5×3 HP + 1×2 HP splits replaced by 1 iHEAT R290 18.5 kW + 3 iSTOR M500-Cold + 1 iSTOR M500-Hot + cool-and-reheat AHU + 15 kWp rooftop solar (load-matched, zero-export). Real numbers come from a site audit.

KARNOT

THE CASH FLOW · PLAIN AND DULL

Money in your pocket. *Every month. From day one.*

MONTH 1

+₱73K

Saving on the bill **minus** the green-loan payment. Net cash in pocket. Every month. New-build basis.

YEAR 1

+₱0.88M

In your pocket while the loan is still being repaid. The kit has paid for itself in cash terms before year three.

YEAR 5

+₱4.4M

Loan paid off. From now on you keep **every peso** of the ₱2.82M annual saving.

YEAR 15

+₱32.6M

Total cash retained over the 15-year asset life vs running the existing splits. The bill you stopped paying.

KARNOT

HOW YOU PAY FOR IT · YOU DON'T

Three Philippine banks *already lend for exactly this.*

DBP

Sustainable Energy Finance Programme (SEFP)

Agri-industrial priority · 70–80% LTV · 5–10 year terms · designed for energy-efficiency CAPEX.

~6.5–8% p.a.

LandBank

Sustainable Energy Investment Loan (SEILP)

Path of least resistance if you already bank with LandBank. Standard SME terms with green-discount.

~7% p.a.

BPI

Sustainable Development Finance (SDF)

Fastest decisions for established SMEs with a BPI relationship. Sized for renewable + efficiency CAPEX.

~1–1.5% below standard SME

These are **loans**, not grants. We don't pretend otherwise — if you call the bank expecting a grant the conversation ends fast. They are real green-discounted commercial loans, with payment schedules sized to fit on top of the monthly savings. **Karnot files the application as part of the project scope.** You sign at the bank window, not before.

KARNOT

THE REGULATORY REBELLION · APRIL 2026

You've been told 100 kWp is the cap. *It isn't. And it hasn't been since April.*

THE MYTH

~~100 kWp~~

What every solar quote you've received told you was the maximum. The net-metering cap, pre-April 2026. Covered **4–8%** of an industrial electricity bill.

APRIL 2026 ONWARDS

1 MW

DOE Circular lifted the net-metering cap to 1 MW (or contracted capacity, whichever is lower) for commercial & industrial consumers. 10× more solar, same paperwork.

SGF · ZERO EXPORT

No cap

The Self-Generating Facility route has never had a cap. Meralco's own FAQ: "no limitation on the generating capacity that the customer can install to avail of Zero Export." ERC SGF approvals up **170% q/q**.

The 20% offset you've been quoted ***isn't a regulatory ceiling. It's the economic ceiling of solar without storage.***

KARNOT

WHY THERMAL STORAGE BEATS EXPORT

Three ways to spend a midday solar kWh. *Only one keeps the value.*

EXPORT IT

₱6

/ kWh · Net metering BGC

Meralco pays you the Bilateral Generation Charge — about half of what you pay to buy electricity back at night. **You lose 60% of the value** on every kWh you exported.

CURTAIL IT

₱0

/ kWh · wasted

No export permission, no demand on site at midday, no storage. The inverter clips the surplus and it's gone. **Zero value recovered.** The cost of installing solar you can't use.

STORE IT THERMALLY

₱13

/ kWh · full retail avoided

Midday solar runs the iHEAT, charges the iSTOR tanks as cold AND hot. At night the AHU pulls from those tanks. You don't buy a single kWh at retail to replace it. **Full retail value kept.**

A kWh of solar stored thermally and consumed at night is worth *2.4× the same kWh exported.*

KARNOT

THE NEXT STEP

Three things from you. *The rest is on us.*

01 **Your warehouse m² + product type**

Floor area, ceiling height, product (tobacco, pharma, dried food, electronics, 3PL). Tells us the duty per zone.

02 **12 months of Meralco bills**

Just the front summary page. We compute today's climate cost — usually 3–4× what the owner thinks.

03 **Your bank relationship**

DBP, LandBank or BPI — tell us which you already work with. That's the fastest route to the green loan.

WHAT YOU GET BACK

A sized system, a fixed price, a monthly cash-flow plan and the bank application *ready to sign.*

Stuart Cox · Founder & CEO
stuart.cox@karnot.com
+63 75 510 8922
karnot.com / applications / warehouse