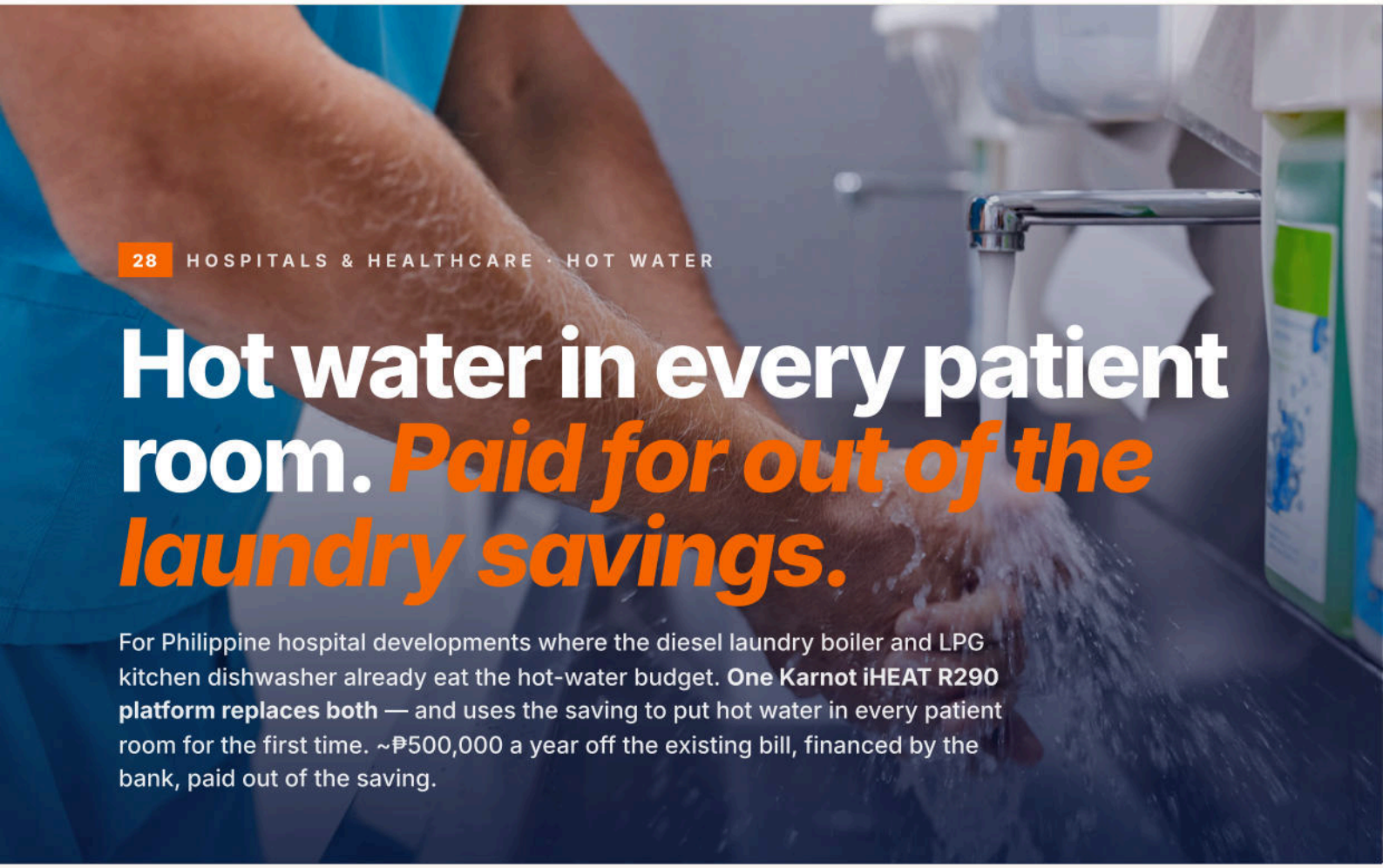

28 HOSPITALS & HEALTHCARE · HOT WATER

Hot water in every patient room. *Paid for out of the laundry savings.*

For Philippine hospital developments where the diesel laundry boiler and LPG kitchen dishwasher already eat the hot-water budget. **One Karnot iHEAT R290 platform replaces both** — and uses the saving to put hot water in every patient room for the first time. ~₱500,000 a year off the existing bill, financed by the bank, paid out of the saving.

MODELLED · TYPICAL 150-BED PHILIPPINE HOSPITAL · NEW-BUILD BASIS · ASK FOR YOUR WORKED CASE

₱500K

Off your hot-water bill, every year

~₱42K/mo gross saving · laundry & kitchen diesel / LPG / resistance retired

Every room

Hot water for the first time

Patient-room hot water at 60 °C · previously uneconomic on diesel

100 t

CO_2 avoided per year

Scope 1 emissions to zero · diesel / LPG retired in favour of R290

You pay nothing up front. *The bank does.*

DBP, LandBank and BPI all run **green-loan programmes** built for exactly this kind of project — **~6.5–8% p.a., 5–10-year terms, 70–80% LTV**. The monthly saving on laundry + kitchen (~₱42,000) roughly covers the loan payment (~₱49,000 on a 5-year ₱2.5M facility at 7%) — **and the trade is patient hot water in every room from day one, plus zero Scope 1, plus a backup heat pump always running**. Once the loan is paid in year 5, the full ₱500K saving stays with you for the rest of the asset life. Karnot files the loan application as part of the project — you don't fight the bank alone.

TODAY: COLD-WATER PATIENT ROOMS · DIESEL LAUNDRY · LPG KITCHEN

Most PH hospitals have no hot water in patient rooms. *Because the laundry boiler ate the budget.*

A typical Philippine hospital of 150 beds runs **two hot-water duties today**: a diesel or LPG boiler for laundry (60 °C) and LPG / electric resistance for kitchen dishwashing + canteen (60–75 °C). Combined: **~₱800,000 a year**. Patient rooms get cold-water washing because adding another diesel boiler for showers was uneconomic. The Karnot iHEAT R290 cuts the laundry + kitchen bill to ~₱190,000, and the saving funds **patient-room hot water for the first time** at ~₱120,000/yr.

Your boiler buys heat. The air gives it away.

A diesel boiler buys one peso of heat for one peso of diesel. A Karnot iHEAT R290 **moves four pesos of heat for one peso of electricity** — the other three come free from the air around your plant room. Same laundry sheet, same kitchen sink, same warm shower for the patient. **75% off the fuel bill.**

Hot water in every room *is finally affordable.*

A heat pump delivers 60 °C patient-room hot water at **roughly a quarter of the operating cost of a diesel boiler and a tenth of an electric instant heater**. The savings on laundry + kitchen pay for the addition. Same loan. Same monthly cash. A capability your hospital can put on every brochure and every Google review.

ONE PLATFORM. THREE LOADS. THE AIR IS THE FUEL.

KARNOT HOSPITAL HOT WATER · ONE R290 PLATFORM · LAUNDRY + KITCHEN + PATIENT ROOMS

SOURCE SIDE

Outside air · the fuel · 100% free

~28–34 °C ambient outdoor air, even at night. The iHEAT evaporator pulls heat **from the air around the plant room**. Electricity only runs the compressor — that's the only thing you pay for.

2 × IHEAT R290

*Two heat pumps installed — **one always running, one always backing up the other**. COP ~4 at 60 °C across all three duties.*

DELIVERY SIDE

Laundry · kitchen · patient rooms

Laundry @ 60 °C (diesel / LPG retired). Kitchen @ 60–75 °C (LPG / resistance retired). **NEW: patient-room hot water @ 60 °C** with Legionella pasteurisation to 70 °C.

LAUNDRY · EXISTING DUTY

Sheets, gowns, towels · **replaces the diesel / LPG laundry boiler entirely** · biggest hot-water consumer

ISTOR M500 PCM

60 °C PCM tank · 4+ hours buffer · rides morning peaks without restart

PATIENT ROOMS · NEW

Warm showers + handwashing in every room · **auto Legionella pasteurisation to 70 °C** · HTM 04-01 logged on iSAVE

THE FOUR BOXES

2 × iHEAT R290

The core · 25–50 kW each · always a spare

Two R290 modules — one always running, one always backing it up. Cover laundry,

iSTOR M500 PCM

The buffer · 100–250 kWh latent

60 °C PCM tank holds **4+ hours of hot water**. Rides morning laundry and patient-

iVOLT Solar · load-matched

Zero-export · 30–100 kWp

Sized to match the iHEAT's daytime electrical demand — **no export to the grid**. Midday

iSAVE monitoring

M&V · Legionella compliance · CFO report

Logs every Legionella pasteurisation cycle to **HTM 04-01**. Monthly M&V report to

WHAT YOU STOP PAYING · MODELLED FOR A 150-BED HOSPITAL

A 150-bed PH hospital — *one iHEAT platform, three duties, one bill.*

ANNUAL FIGURE · MODELLED 150-BED HOSPITAL	TODAY (DIESEL / LPG / RESISTANCE)	WITH KARNOT IHEAT	CHANGE VS TODAY
Laundry hot water (60 °C) · sheets / gowns / towels	₱500,000	₱115,000	**– ₱385,000**
Kitchen dishwashing + canteen (60–75 °C)	₱300,000	₱75,000	**– ₱225,000**
Patient-room hot water (60 °C) · *NEW capability*	₱0 (cold)	₱120,000	**+ patient experience**
Modelled CAPEX (iHEAT + iSTOR + iVOLT + iSAVE)	—	~₱2.5M	—
Scope 1 emissions	~100 tCO_2 / yr	Zero	**– 100 tCO_2 / yr**
Total annual hot-water spend	**~₱800K**	**~₱310K**	**~₱490K / yr**

Modelled scenario · typical 150-bed Philippine hospital · new-build basis · laundry + kitchen today, cold-water patient rooms · baseline diesel / LPG / electric resistance · typical PH utility commercial tariff April 2026 (~₱14/kWh delivered). Architecture: 2 × iHEAT R290 (one always running, one always backing it up) + iSTOR M500 PCM + iVOLT load-matched solar (zero-export) + iSAVE monitoring. Modelled gross payback ~5 years before BOI Pioneer ITH (~3 years after). Premium hospitals already running patient DHW spend ₱1.5–2.5M/yr on hot water and save proportionally more — numbers scale with bed count. ***Ask for your worked case.***

THE CASH FLOW · PLAIN AND DULL

MONTH 1

~ flat

~₱42K saving roughly covers the ~₱49K loan payment. **The trade is hot water in every patient room from day one** — plus zero Scope 1, plus a backup heat pump always running.

YEAR 1

₱490K

Cash bill avoided in year 1 vs the diesel + LPG + resistance baseline. Plus patient hot water that didn't exist before — **previously uneconomic on diesel**.

YEAR 5

₱2.45M

Loan paid off. From now on you keep **every peso** of the ~₱490K/yr saving — and the patient hot water stays on.

YEAR 10

₱4.9M

Cumulative bill avoided over the 10-year asset life vs running the existing diesel / LPG / resistance fleet.

HOW YOU PAY FOR IT · YOU DON'T

Three Philippine banks already lend for this. *Karnot files the paperwork.*

Philippine green-loan programmes *built for exactly this kind of project*

DBP · SEFP
Sustainable Energy Finance Programme
Healthcare-eligible · 70–80% LTV · 5–10 year terms · **~6.5–8% p.a.**

LANDBANK · SEILP
Sustainable Energy Investment Loan
Path of least resistance for hospitals already banking with LandBank · **~7% p.a.**

BPI · SDF
Sustainable Development Finance
Fastest decisions for established healthcare groups with BPI relationships · **~1–1.5% below standard SME rate**

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 project scope.** You sign at the bank window, not before. **BOI Pioneer + Income Tax Holiday under RA 11285** stacks on top.

WHY YOUR SOLAR SHOULD NOT EXPORT

ZERO-EXPORT · SIZED TO LOAD-MATCH

Your utility buys back at ~₱6. They sell to you at ~₱14. *Exporting kills the maths.*

A hospital runs round the clock. Daytime is laundry runs and kitchen production — the iHEAT is heavily loaded. Solar produced beyond the iHEAT's appetite exports at the Bilateral Generation Contract rate (~₱6/kWh). At 2am, when patient-room hot water demand stays steady, that same kWh is bought back at retail (~₱14/kWh). **You lose 60% on every kWh you exported.** The **iSTOR PCM tank fixes this**: midday solar surplus is stored as 60 °C water. Night-shift hot water pulls from the tank instead of the grid. We size PV at **~115% of iHEAT daytime demand** so the kit consumes essentially all of it — no net-metering paperwork, no export losses, no surprise bill from a wrong tariff classification.

"Most Philippine hospitals don't have hot water in patient rooms today. Not because the patient doesn't want it — because the diesel laundry boiler and the LPG kitchen dishwasher already eat the hot-water budget. The Karnot iHEAT R290 cuts the laundry + kitchen bill from ~₱800K to ~₱190K a year, and uses the saving to put hot water in every patient room at last. Two heat pumps installed — one always backing up the other. Same monthly cash. Zero Scope 1. A capability your competitors don't have. The maths is not subtle. The only question is when you want it to start."

Stuart Cox · Founder & CEO · Karnot Energy Solutions Inc.