



THE COMPLETE GLOBAL EDITION



Cool Savings

The Air Conditioning Money-Saving Handbook

How negligence and wrong settings quietly burn your money, and exactly how to stop it. With real, step-by-step calculations.



40+

money-saving
actions

30+

worked
calculations

8

currencies
°C and °F

50%

possible cut
in AC bills

Homes · Apartments · Offices · Shops | Split, window, portable & central systems





CONTENTS

What's inside

Welcome: meet Breezy and Watt	4
Your savings at a glance	5
Meet the reference room	6
● Part 1 • Understand your AC	7
How an air conditioner works	8
Where the heat comes from	9
Decoding BTU, tons, EER, SEER and COP	10
From kilowatts to cash	11
● Part 2 • Smart settings	12
The setpoint: your most powerful number	13
What each setpoint costs per year	14
The "18 °C cools faster" myth	15
Know your modes	16
The fan + AC combo	17
Timers and sleep mode	18
● Part 3 • The energy wasters	19
The dirty filter	20
Open doors and windows	21
Sunshine through glass	22
Cooling empty rooms	23
Hidden heaters in your room	24
The suffocating outdoor unit	25
Dirty coils and low refrigerant	26
Standby: paying for "off"	27
Leaky ducts (central systems)	28
The waste league table	29
● Part 4 • Buy and size it right	30
Choose the right size	31
Too big is as bad as too small	32
Inverter vs fixed-speed	33
Efficiency ratings and payback	34
The true cost of owning an AC	35
● Part 5 • Maintenance pays	36
Your maintenance calendar	37
Cleaning filters step by step	38
The professional service	39
● Part 6 • A cooler home	40
Seal, insulate and cool the roof	41
Smart controls and zoning	42
Time-of-use tariffs and pre-cooling	43
Free cooling and heat-pump heating	44
● Part 7 • Offices and shops	45
Ten rules for an efficient workplace	46
Case study: a small office	47
● Part 8 • Put it all together	48
Case study: the family home	49
Myths vs facts	50
The one-page cheat sheet	51
Worksheet: what does your AC cost?	52
The 30-day Cool Savings challenge	53
Formulas, conversions and glossary	54





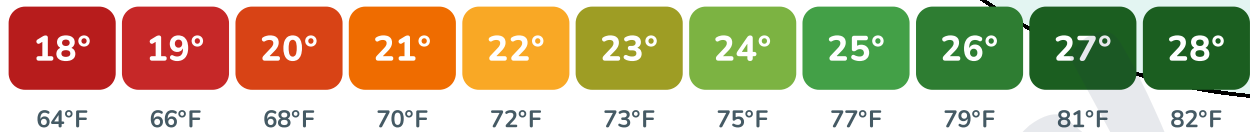
SETTING #1

The setpoint: your most powerful number

The temperature on your remote decides how big a gap the AC has to hold between outdoors and indoors. A bigger gap means more heat leaks in, and more work to pump it out.

◀ Expensive & over-cold

Comfortable & cheaper ▶



Sweet spot for most homes: 24–26 °C (75–79 °F)

Why each degree costs about 6%

Heat flows in through walls, windows and leaks in proportion to the **temperature difference**. On a 35 °C (95 °F) afternoon:

- Room at 22 °C → gap of 13 °C
- Room at 25 °C → gap of 10 °C

That's 23% less heat leaking through the walls and windows. Sun, people and appliances don't shrink, so the *total* load falls less, and the compressor also gets a little more efficient with a smaller lift.

Field studies land on roughly **5–8% per °C**. We use a cautious **6%**.



Calculation 5 • From 22 °C to 25 °C

Reference room at 24 °C	2,500 kwh
22 °C is 2° colder: +2 × 6% = +12%	2,800 kwh
25 °C is 1° warmer: –1 × 6% = –6%	2,350 kwh
Difference: 2,800 – 2,350	450 kwh
Saved per year, one room	450 kwh

450 kWh =

USD 81

EUR 126

GBP 112

AUD 144

AED 171

INR 3,600

LKR 22,500

ZAR 1,575

**BREEZY SAYS**

Most people feel perfectly comfortable at 24–26 °C (75–79 °F), especially with a gentle fan. Many governments now recommend or even require AC defaults of 24 °C or more.



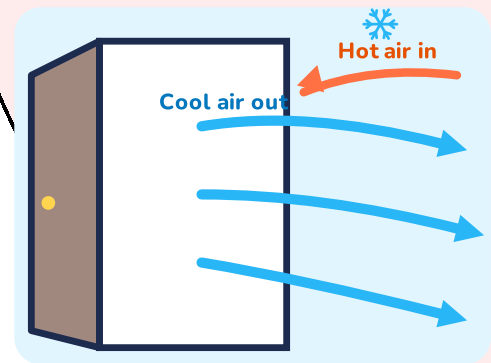


WASTER #2

Open doors and windows

An open door or window lets your expensive cool, dry air spill out while hot, humid air floods in. In humid climates, the **moisture** that comes in can cost even more than the heat.

Room: 4 m × 5 m × 2.7 m = **54 m³**. Outdoors 34 °C (93 °F), indoors 24 °C (75 °F). With the door shut, air leaks in at about 0.5 air changes per hour (ACH). With a door left open, at least **6 ACH**.



Calculation 13 · The cost of leaving the door open

Heat from air: 0.33 W per m³ per °C × air flow × temperature gap

Air flow with door open: 54 m³ × 6 ACH

324 m³/h

Sensible heat: 0.33 × 324 × 10 °C

1,069 W

Moisture (humid climate, 6 g/kg drier inside): 0.82 × 324 × 6

1,594 W

Total extra heat entering

2,663 W

Extra electricity at COP 3: 2,663 ÷ 3

0.89 kW

Door open 2 h a day × 250 days = 500 h: 0.89 × 500

444 kWh

Wasted per year (humid climate)

444 kWh

In a dry climate, moisture is close to zero: 1,069 ÷ 3 × 500 h ≈ 178 kWh a year. Still well worth closing the door.

444 kWh =

USD 80

EUR 124

GBP 111

AUD 142

AED 169

INR 3,552

LKR 22,200

ZAR 1,554



Watt loves...

- Doors propped open 'for air'
- Kitchen or bathroom doors open to a cooled room
- Windows cracked open while the AC runs
- Gaps under doors and around window frames



Fixes

- Close doors to uncooled spaces
- Door sweeps, draught strips and caulk (cheap and quick)
- Self-closing hinges for busy doors
- Window-open sensors on smart systems





CASE STUDY

The family home: before and after

One living-room split unit like the reference room. The family thought their AC was "just expensive". Each problem multiplies the energy left after the previous one.

✗ Before • six everyday habits

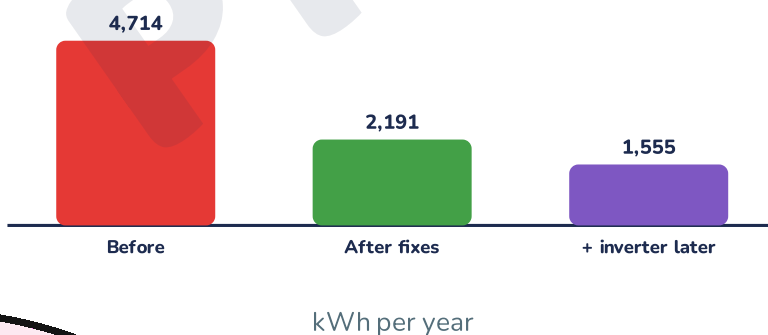
Well-run reference room	2,500 kwh
Setpoint 22 °C, not 24 °C: × 1.12	2,800 kwh
Filters cleaned twice a year: × 1.10	3,080 kwh
Coils never serviced (moderate): × 1.10	3,388 kwh
Outdoor unit boxed in on balcony: × 1.10	3,727 kwh
Doors open, curtains open: × 1.10	4,099 kwh
AC left on in empty rooms (+15% hours): × 1.15	4,714 kwh

Yearly use, before 4,714 kwh

✓ After • free and cheap fixes

All six problems fixed (back to well-run)	2,500 kwh
Setpoint 25 °C with a fan: × 0.94	2,350 kwh
Sleep mode at night: × 0.90	2,121 kwh
Add BLDC ceiling fan	+70 kwh

Yearly use, after 2,191 kwh



54%

less energy

2,524

kWh saved / year

2,524 kWh =

USD 454

EUR 707

GBP 631

AUD 808

AED 959

INR 20,188

LKR 126,176

ZAR 8,832

Costs: a fan (≈ USD 60), a yearly service (≈ USD 80) and an afternoon moving plant pots away from the outdoor unit. When the old unit eventually fails, a good inverter replacement takes them to about 1,555 kWh, **67% below** where they started.

