



ecodyst

DISTILLERY & BREWERY INNOVATION

# The Future of Distillation Is Here

The world's first fully integrated, high-efficiency electric heating & cooling system for vacuum and atmospheric distillation — no boilers, no chillers, no compromise.

★ World's First True Hybrid Distillation System

99%

Heating Efficiency vs. 60–85% traditional

0

Gallons of Water Required Daily

4

Distillation Modes in One System

24/7

Continuous Operation 365 Days a Year

# Your Current Setup Is Costing You More Than You Think



## Steam Boiler Inefficiency

Steam-based heating systems waste 30–40% of their energy before it ever reaches your still. Add in boiler rooms, steam lines, condensate traps, venting, and constant maintenance — and costs compound fast.



## Water-Wasting Chillers

Traditional water-cooled condensers consume thousands of gallons per day. Open-loop systems drain your utility budget; closed-loop glycol chillers demand constant fluid management and pump maintenance.



## Downtime Kills Production

Boilers require regular inspections, descaling, and pressure certifications. Chillers break down. Every hour of unplanned downtime means lost batches and revenue — especially during peak production runs.



## Infrastructure Complexity

Multiple systems — boilers, chillers, pumps, tanks, plumbing — each requiring separate vendors, permits, and technicians. This complexity raises overhead, slows expansions, and limits where you can operate.



# One System. Complete Thermal Control.

Ecodyst delivers the world's first **fully electric, fully integrated** heating and cooling distillation platform. Two breakthrough technologies — a 99% efficient direct heating mantle and a waterless direct cooling condenser — work together as a single, intelligent closed-loop system.



## Direct Heating Mantle

Advanced electric heating technology that wraps your still for even, precise heat distribution — no boilers, no steam, no flames.

- ✓ 95–99% heating efficiency
- ✓ Fast heat-up: 30–40 minutes
- ✓ Even heat distribution — prevents scorching
- ✓ No boiler room, no steam lines, no permits
- ✓ Zero maintenance heating
- ✓ 365/24/7 continuous operation



## Direct Cooling Condenser

Refrigeration-based technology that cools condenser surfaces directly — no water loops, no glycol, no chiller infrastructure.

- ✓ Zero water consumption
- ✓ Closed-loop rapid condensation
- ✓ Intelligently adjusts to vapor temperature
- ✓ No coolant fluids to manage
- ✓ Compact — no separate chiller unit needed
- ✓ Safe for distillery & cleanroom environments



# Direct Electric Heating Mantle: The Boiler Replacement

Traditional distilleries rely on steam boilers or immersion heaters — systems that require significant infrastructure, introduce burn risk, and cycle through expensive maintenance. Ecodyst's advanced heating mantle changes everything.

- ✓ **Near-Perfect Efficiency**  
95–99% of electrical energy converts directly to heat in your still — far exceeding steam boilers at 60–85%. Every watt is working for you.
- ✓ **Even, Scorching-Free Heat Distribution**  
The mantle wraps the still completely, distributing heat evenly across the base and walls. This eliminates hot spots that damage delicate botanicals, grains, or fermented wash.
- ✓ **Zero Infrastructure Requirements**  
No boiler room. No steam lines. No condensate traps. No venting systems. No water treatment. No pressure certificates. Install in days, not months.
- ✓ **Alcohol-Vapor Safe**  
No open flames. No exposed hot elements. No pressurized systems. Purpose-designed for spirit production environments where safety is non-negotiable.
- ✓ **Retrofit-Friendly**  
Designed to integrate with existing pot stills. Upgrade your current setup without replacing your entire system — fast installation, minimal downtime.



## PERFORMANCE NUMBERS

Heating Efficiency  
vs 60–85% steam boilers **99%**

Heat-Up Time  
ready for production **30 min**

Maintenance Required  
vs high with boilers **None**

Uptime  
continuous operation **24/7**

Scorching Risk  
even heat distribution **Low**

Pot Still Compatibility  
modular & scalable **1–1K+**

# Direct Cooling Condenser: The Chiller Replacement

Instead of circulating water or glycol through a chiller and into your condenser, Ecodyst's system runs a refrigeration circuit directly through metal coils in contact with your vapor stream — condensing spirits on contact, efficiently and cleanly.

- ✓ **Zero Water Consumption**  
Traditional open-loop condensers consume thousands of gallons daily. Ecodyst uses exactly zero. This alone can save significant utility costs and enables operation in water-restricted or urban locations.
- ✓ **Intelligent Temperature Control**  
The condenser adjusts cooling automatically in response to vapor temperature — ensuring optimal condensation across different spirits, cuts, and run conditions without manual tuning.
- ✓ **Compact, Simplified Footprint**  
Eliminates separate chiller units, holding tanks, pumps, and plumbing runs. Everything is integrated — freeing valuable floor space in your production facility.
- ✓ **Better Flavor, Cleaner Cuts**  
Precise, consistent cooling enables tighter cut points — giving distillers more control over heads, hearts, and tails. Ideal for craft whiskey, gin, and premium vodka production.
- ✓ **No Coolant Fluid Hassle**  
No glycol to mix, replenish, or dispose of. No risk of contamination. No fluid maintenance schedules. Just turn it on and distill.

## PERFORMANCE NUMBERS

Water Usage  
vs 1,000s gal/day traditional **0 gal**

Cooling Method  
no fluid loop required **Direct Refrig.**

Setup Complexity  
vs complex plumbing **Plug & Play**

Footprint Impact  
no chiller/tank/pump **Smaller**

Environmentally Friendly  
no waste water/glycol **Yes**

Maintenance Required  
vs high with glycol systems **Minimal**



# Ecodyst vs. Traditional Systems

Feature	⚡ Ecodyst System	☐ Steam Boiler Setup	☐ Chiller + Glycol
Heating Efficiency	✓ 95–99%	✗ 60–70%	✗ High heat loss
Cooling Method	✓ Dry, direct refrigeration	✗ Water-cooled	✗ Water + glycol waste
Daily Water Usage	✓ 0 gallons	✗ High (steam system)	✗ 1,000s gal/day
Maintenance Required	✓ None / Minimal	✗ High — frequent	✗ Frequent fluid changes
System Uptime	✓ 24/7/365	✗ Regular downtime	✗ High maintenance breaks
Installation Time	✓ Fast — days	✗ Weeks to months	✗ Complex plumbing
Scorching Risk	✓ Low	⚠ Medium–High	— N/A
IoT / Digital Monitoring	✓ Full IoT controls	✗ None	✗ Partial
Regulatory Burden	✓ Low — no pressure systems	✗ Boiler certificates required	⚠ Fluid disposal compliance
Retrofit Friendly	✓ High — works with existing stills	✗ Low	⚠ Medium

**60%**

Energy savings over traditional steam heating

**Zero**

Gallons of water consumed daily in operation

**1–1K+**

Gallon pot stills supported — fully modular

# Solving Real Problems for Distillers & Brewers



## Whiskey & Bourbon

- Steam systems scorching delicate mash → Even mantle heat, zero scorching risk
- Chiller breakdowns during long runs → Direct cooling, no chiller to fail
- Imprecise cut points affecting quality → Intelligent vapor-sensing temperature control
- High maintenance overhead and cost → Zero maintenance heating and cooling



## Gin & Botanical Spirits

- Overheating destroying citrus & herbs → Vacuum distillation at lower temps
- Need for water lines limiting location → Fully waterless — operate anywhere
- Slow cooldown losing delicate aromatics → Rapid condensation preserves flavor
- Footprint too large for craft operation → Compact integrated system — plug & play



## Vodka & Neutral Spirits

- Consistency issues across long production runs → Column still reflux with digital precision
- High utility bills from water-cooled condensers → Zero water — dramatically lower utility costs
- Compliance with waste water regulations → No water in = no water out to dispose
- Expanding production without added infrastructure → Modular — scale from 15 to 1,000+ gallons



## Craft & Commercial Breweries

- Steam kettles requiring boiler infrastructure → Direct electric heating — no boiler required
- High installation cost and time → Fast installation — plug-and-play system
- Sustainability pressure from customers → Zero water, zero fossil fuels, eco-certified
- Remote or urban locations lack infrastructure → Off-grid capable — self-contained system

### ALL FOUR DISTILLATION MODES — IN ONE ECODYST SYSTEM

Pot Still

Vacuum Distillation

Column Still

Vacuum Distillation

Pot Still

Atmospheric Distillation

Column Still

Atmospheric Distillation

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## Ready to Upgrade Your Distillery?

Our team of distillation technology experts is ready to help you find the right Ecodyst system for your operation — whether you're a startup craft distillery or scaling to commercial production. We offer custom quotes, site consultations, and full installation support.



WEBSITE  
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SALES  
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LOCATION  
Apex, North Carolina

### WHY DISTILLERS CHOOSE ECODYST

- ✓ **No boilers, no chillers** — eliminate the two biggest infrastructure headaches in your facility
- ✓ **Zero water consumption** — cut utility bills and meet sustainability goals simultaneously
- ✓ **99% heating efficiency** — more of every dollar of energy goes into your product, not the air
- ✓ **Four distillation modes** — vacuum & atmospheric, pot & column still, all in one system
- ✓ **Plug-and-play setup** — operational in days, not months; retrofit-compatible with existing stills
- ✓ **IoT-enabled platform** — monitor and control temperature, energy, and uptime from one digital interface
- ✓ **Built for 24/7/365 production** — minimal maintenance, maximum uptime, continuous output

### Request a Custom Quote

Tell us your still size, spirit type, and production goals — we'll design the right Ecodyst system for you.

[ecodyst.com/contact-us](https://ecodyst.com/contact-us)