

Predictive Maintenance (PM) Savings Cheat Sheet

Quick Reference for Facility Managers: How PdM Improves Commercial HVAC Performance & Budgets

Key Metrics & Average Savings

Metric	Typical Range / Average	Why It Matters
HVAC Energy Savings	10–15% reduction	Lower utility bills across multi-site operations, supporting cost control and sustainability goals.
Maintenance Cost Reduction	25–40% lower reactive repair costs	Fewer emergency dispatches, optimized labor, and predictable budgets.
Equipment Life Extension	5–10 years	Defers capital expenditures and reduces total cost of ownership.
Unplanned Downtime Avoided	~40–50% reduction	Maintains comfort, protects revenue, and minimizes business disruption.
Impact on FM Budgets	More predictable OPEX, deferred CapEx, smoother cash flow	Converts unpredictable maintenance costs into measurable, manageable expenditures aligned with executive KPIs.

Quick Action Steps for Facility Managers

1. Identify high-priority HVAC equipment (rooftop units, chillers, AHUs).
2. Ensure sensors/BAS/BMS capture runtime, energy, temperature, and fault data.
3. Define baseline metrics (energy use, downtime, reactive repair costs).
4. Set predictive thresholds and alerts for early intervention.
5. Review results quarterly and adjust maintenance strategies as needed.
6. Scale across multiple sites once ROI is demonstrated.

ROI Framing Example

Scenario	Example Numbers	Savings / Impact
Energy Savings	20 sites × \$50k/site	10% = \$100k/year
Avoided Emergency Repair	Average \$15k/year	Reduced reactive costs
Deferred Capital Replacement	Major equipment replacements over 5 years	~\$200k deferred
Total Potential Impact	Combined savings	\$315k+ over one year (illustrative)

Key KPIs to Track

- ⌋ Energy per square foot
- ⌋ Mean time between failures (MTBF)
- ⌋ Ratio of reactive vs. planned maintenance
- ⌋ HVAC uptime percentage
- ⌋ Total cost of ownership (TCO) of major equipment

Reference & Verification

- ⌋ <https://www.mdpi.com/2624-6511/8/2/66>
- ⌋ <https://www.sciencedirect.com/science/article/pii/S2352484722013944>
- ⌋ <https://papers.ssrn.com/sol3/papers.cfm>