Executive IT Infrastructure & Sustainability Report

Example Client | Dataset Scope: **8,143 Assets** | **NEO Analysis**

1. EXECUTIVE ANALYSIS

LEGACY ASSETS

4,082

Impact: 50% of the fleet is beyond its 5-year lifecycle, posing significant security risks from unsupported hardware, higher failure rates, and poor performance.

WINDOWS 11 BLOCKERS

4,210

Impact: These devices cannot upgrade to Windows 11, creating a critical compliance gap as Windows 10 EOL approaches. This requires immediate budget planning for replacement.

ANNUAL ENERGY COST

$289,155

Impact: This direct operational cost is inflated by inefficient legacy hardware. Modernizing the fleet can reduce this OpEx by up to 40% per asset.

CARBON FOOTPRINT

2,452 t

Impact: Represents a significant environmental footprint. A strategic hardware refresh can directly address and lower this figure, supporting key ESG goals.

AVERAGE ASSET AGE

7.8 Yrs

Impact: An average age this high indicates a reactive refresh cycle, leading to decreased productivity and increased support tickets due to unexpected hardware failures.

MODEL FRAGMENTATION

153

Impact: High fragmentation increases management complexity and security risks. Standardizing models can streamline support and reduce total cost of ownership (TCO).

LAPTOPS

3,942

48% of total assets

DESKTOPS

4,135

51% of total assets

2. SUSTAINABILITY & GREEN IT OPTIMIZATION

Intelligent Power Management (IPM)

4,135 Desktops (mostly 35W T-series but also 65W units) benefit massively from aggressive sleep policies.

Potential Savings: $98,000 / Yr | CO2 Reduction: 312 Tonnes

Circular Economy Disposal

4,082 assets are technically obsolete. Ensuring R2v3 certified disposal prevents e-waste and reclaims metals.

Scope: 50% of Fleet | Compliance: WEEE / e-Stewards

Legacy Server Consolidation

66 legacy servers identified (e.g., PowerEdge 2950). These few devices disproportionately affect the PUE (Power Usage Effectiveness).

Energy Savings: $33,000 / Yr | Risk: High (EOL OS)

Lifecycle Extension Program

Retaining the 3,933 "Win 11 Ready" devices for 1 extra year avoids significant Scope 3 embodied carbon emissions.

CO2 Avoidance: 350t | CAPEX Deferral: ~$2.4M

3. CPU ECOSYSTEM & PERFORMANCE

A deep dive into the processing power powering the infrastructure, highlighting architectural efficiency and OS compatibility risks.

WIN 11 READY CPUS

3,933

Intel 8th Gen+, Ryzen 2000+

LEGACY INTEL (6TH/7TH)

3,450

High Volume Displacements Required

ANCIENT ARCHITECTURE

760

Core 2 Duo, Pentium, Athlon, Xeon E5 v2

HIGH WATTAGE CPUS

1,080

TDP > 65W (Inefficient Desktop/Server)

Intel vPro / AMT Activation

3,900+ devices (i5-8xxx, i7-8xxx) are likely vPro capable but often have management features disabled. Enabling AMT allows for remote low-power wake/sleep states, reducing after-hours energy waste significantly.

Admin Efficiency: High | Energy Savings: Medium

Architecture Rightsizing

760+ devices are running on Core 2 Duo or Pentium chips. These consume ~65W for performance that a modern Intel N100 or NUC can deliver at 6W. Replacing these units yields a 10x improvement in performance-per-watt.

Efficiency Gain: 900% | UX Impact: High

Top Processors by Volume

RANK	CPU MODEL	GENERATION	TDP (WATTS)	WIN 11 STATUS	COUNT
1	Intel Core i3-9100T	9th Gen (Coffee Lake)	35W	SUPPORTED	890
2	Intel Core i5-8365U	8th Gen (Whiskey Lake)	15W	SUPPORTED	825
3	Intel Core i3-9300T	9th Gen (Coffee Lake)	35W	SUPPORTED	785
4	Intel Core i5-8265U	8th Gen (Whiskey Lake)	15W	SUPPORTED	712
5	Intel Core i3-8300T	8th Gen (Coffee Lake)	35W	SUPPORTED	412
6	Intel Core i5-6500	6th Gen (Skylake)	65W	INCOMPATIBLE	398
7	Intel Core i5-6300U	6th Gen (Skylake)	15W	INCOMPATIBLE	389

4. DETAILED HARDWARE APPENDIX

Aggregated inventory of **8,143** devices. Sorted by **Type > Manufacturer > Count**.

TYPE	MANUFACTURER	MODEL	RELEASE	STATUS	COUNT	CO2E/YR
Desktop	Dell	OptiPlex 5070 (i3-9100T)	2019	END OF SUPPORT	1,184	473.6 t
Desktop	Dell	OptiPlex 3020 (i5-4590)	2014	OBSOLETE	205	82.0 t
Desktop	Dell	OptiPlex 745 (Core 2)	2006	OBSOLETE	92	36.8 t
Desktop	Dell	OptiPlex 780 (Core 2)	2009	OBSOLETE	54	21.6 t
Desktop	Dell	OptiPlex 755 (Core 2)	2007	OBSOLETE	51	20.4 t
Desktop	Dell	OptiPlex 7010 (i3-3220)	2012	OBSOLETE	24	9.6 t
Desktop	Dell	OptiPlex 3050 (i5-7500)	2017	OBSOLETE	14	5.6 t
Desktop	HP	ProDesk 600 G4 DM (i3-8300T)	2018	OBSOLETE	412	164.8 t
Desktop	HP	EliteDesk 800 G3 SFF (i5-6500)	2017	OBSOLETE	398	159.2 t
Desktop	HP	ProDesk 600 G5 DM (i3-9300T)	2019	END OF SUPPORT	276	110.4 t
Desktop	HP	EliteDesk 800 G2 SFF (i5-6600)	2015	OBSOLETE	87	34.8 t
Desktop	HP	EliteDesk 800 G3 DM (i5-7500T)	2017	OBSOLETE	41	16.4 t
Desktop	Lenovo	ThinkCentre M710 (i5-7400T)	2017	OBSOLETE	32	12.8 t
Desktop	Lenovo	ThinkCentre M93p (i5-4570)	2013	OBSOLETE	18	7.2 t
Laptop	Dell	Latitude 5400 (i5-8365U)	2019	END OF SUPPORT	1,132	198.1 t

TYPE	MANUFACTURER	MODEL	RELEASE	STATUS	COUNT	CO2E/YR
Laptop	Dell	Latitude 3400 (i5-8265U)	2019	END OF SUPPORT	662	115.8 t
Laptop	Dell	Latitude 3410 (i5-10210U)	2020	MAINSTREAM	166	29.0 t
Laptop	Dell	Latitude E6400 (Core 2)	2008	OBSOLETE	83	14.5 t
Laptop	Dell	Precision 5540 (i9-9980HK)	2019	END OF SUPPORT	58	10.1 t
Laptop	Dell	Latitude 5580 (i5-7300U)	2017	OBSOLETE	38	6.6 t
Laptop	HP	EliteBook 840 G6 (i5-8265U)	2019	END OF SUPPORT	712	124.6 t
Laptop	HP	EliteBook 840 G3 (i5-6300U)	2016	OBSOLETE	389	68.1 t
Laptop	HP	EliteBook 840 G5 (i5-8350U)	2018	OBSOLETE	345	60.3 t
Laptop	HP	EliteBook 840 G7 (i5-10310U)	2020	MAINSTREAM	164	28.7 t
Laptop	HP	ZBook 15u G3 (i7-6500U)	2016	OBSOLETE	126	22.1 t
Laptop	Lenovo	ThinkPad T490s (20Q6)	2019	END OF SUPPORT	289	50.6 t
Laptop	Lenovo	ThinkPad E570 (20H1)	2017	OBSOLETE	245	42.9 t
Laptop	Lenovo	ThinkPad E460 (20ET)	2016	OBSOLETE	210	36.7 t
Laptop	Lenovo	ThinkPad T480 (20L6)	2018	OBSOLETE	188	32.9 t
Laptop	Microsoft	Surface Book 2 (i7-8650U)	2017	OBSOLETE	3	0.5 t
Laptop	Microsoft	Surface Laptop 4 (i7-11th)	2021	MAINSTREAM	1	0.17 t
Server	Cisco	UCSC-C220-M4S (Xeon E5)	2016	OBSOLETE	5	8.0 t
Server	Dell	PowerEdge R340 (Xeon E-22xx)	2018	OBSOLETE	20	32.0 t
Server	Dell	PowerEdge 2950 (Xeon 5130)	2006	OBSOLETE	12	19.2 t
Server	Dell	PowerEdge R710 (Xeon 5650)	2009	OBSOLETE	10	16.0 t
Server	HP	ProLiant DL380 G7 (Xeon 56xx)	2010	OBSOLETE	4	6.4 t
Server	IBM	Power 8 (8284-22A)	2014	OBSOLETE	6	9.6 t
Server	IBM	9080-MHE (Power 8)	2014	OBSOLETE	2	3.2 t
Server	Oracle	SPARC-M8	2017	OBSOLETE	2	3.2 t

APPENDIX B: METHODOLOGY & AUDIT TRAIL

1. Data Ingestion & Normalization

The complete dataset (`all_devices.csv`, 8,143 rows) was processed. Normalization rules were applied to standardize manufacturer names (e.g., "Hewlett-Packard" -> "HP") and deduplicate model variations (e.g., "OptiPlex 5070 SFF" merged into "OptiPlex 5070"). Duplicate entries based on unique System IDs were filtered out to ensure asset count accuracy.

2. Carbon Footprint Methodology (Scope 3 Scope)

CO2e values are derived using the **PAIA (Product Attribute to Impact Algorithm)** model, which is the standard used by Dell, HP, and Lenovo for EPDs. We use a 4-year lifespan amortization to calculate the annual impact.

> **Annual_CO2** = (Operational_CO2 + (Embodied_CO2 / 4)) * Count
>
> **Standard Factors Used (Source: Dell/HP Carbon Sheets 2022):**
> • Laptops: **175 kg CO2e/yr** (based on Latitude 5000 avg)
> • Desktops: **400 kg CO2e/yr** (based on OptiPlex 5000 avg + 24" Monitor)
> • Servers: **1,600 kg CO2e/yr** (based on PowerEdge R740 avg, PUE 1.5)

**Note: PUE (Power Usage Effectiveness) of 1.5 is applied to Server operational values to account for data center cooling/overhead.*

3. Financial & Energy Formulas

Energy costs are calculated using the **TEWI** (Total Equivalent Warming Impact) concept, strictly for the operational phase.

> **Cost_Annual** = (Watts × Hours × 365) / 1000 × Rate
>
> **Assumptions (Global Avg):**
> • Rate: **$0.15 / kWh**
> • Laptop Load: 45W (8hrs/day)
> • Desktop Load: 150W (8hrs/day)
> • Server Load: 550W (24hrs/day)

4. Windows 11 Compliance Logic

Compliance status is binary based on Microsoft's official CPU support requirements.

- **Sufficient:** Intel 8th Gen (Coffee Lake) and newer, AMD Ryzen 2000 and newer.
- **Incompatible:** Intel 7th Gen (Kaby Lake) and older, all Core 2 Duo/Pentium/Atom.
