DemandFlow ESG and Carbon

DEMANDFLOW®

Find the assets you can safely remove, prove it with measured evidence, show the money and carbon saved, and raise the work to make it happen

DATA SHEET

Every network and data centre carries kit that does nothing. Servers that have not seen traffic in months, storage arrays idling at one per cent CPU, racks drawing power for workloads that moved years ago. Everyone suspects it is there. Nobody will switch it off, because nobody can prove it is safe, and nobody can say what it is costing.

DemandFlow® answers both questions from the records. It finds the devices at a site that are measured idle, excludes anything whose role or owner is not proven, ranks what is left by the money it costs each month and the carbon it emits each year, and puts the evidence against every line. A named approver signs it off. DemandFlow then raises the network change, the decommission work order and the disposal order, and the avoided carbon follows the asset out of the door.

Around that sits carbon accounting for the whole technical estate: energy and emissions per site, recharged to the tenants who share it; carbon per network service; materials and plant on projects; and a daily footprint for the people who deliver the work.

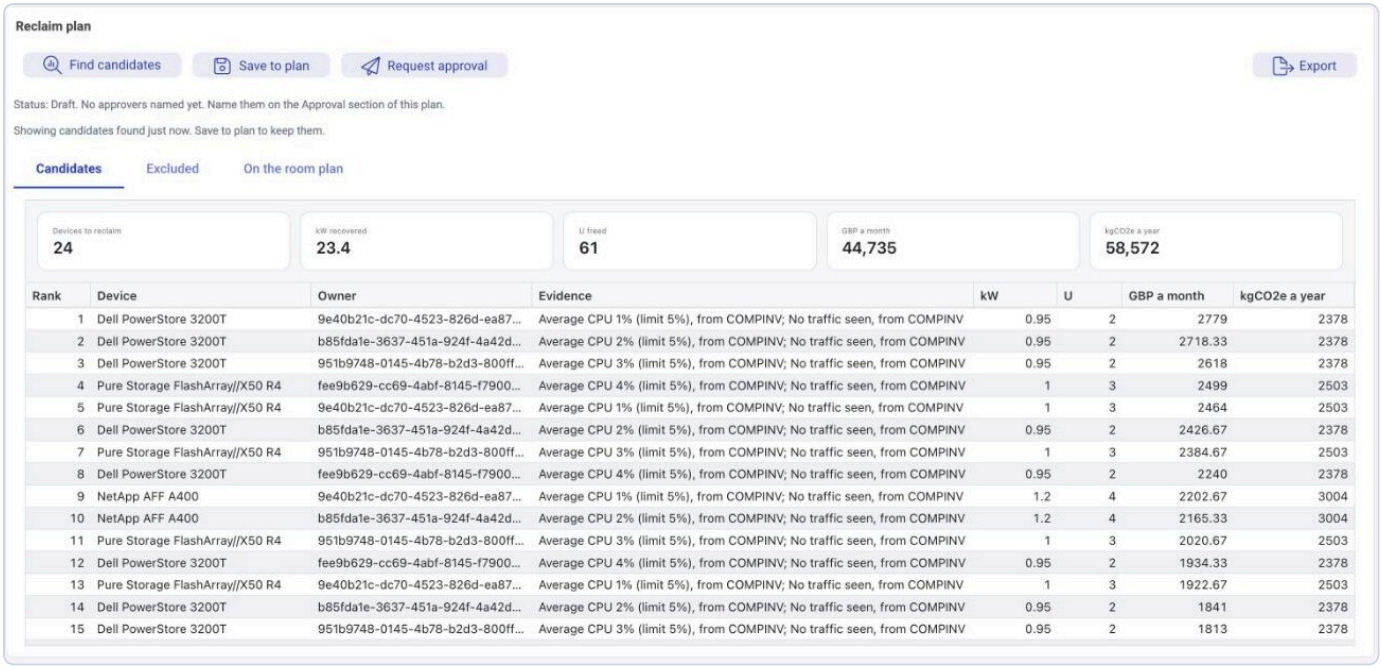
What it is

A reclaim engine on every site with a Safe reclaim panel, an Excluded tab, a room plan and an approval gate; a network audit dashboard and an asset efficiency view across the estate; a carbon factor table, site energy readings with tenant allocation and recharge, a cost and carbon panel on every site, service carbon on the network, materials and plant on projects, carbon profiles on resources, disposition orders with avoided carbon by route, and an emissions by site workbook.

It sits inside DemandFlow, so the reclaim plan reads the same asset, rack, room and site records the capacity and change teams use, the work order goes to the same field teams, the disposal order feeds the same ITAD pipeline, and the carbon figures roll up from the physical item to the rack, the room and the site.

What an operator gets

- **Candidates found, not guessed.** Find candidates loads every asset at the site with its catalogue entry, rack and site, and keeps only the devices measured idle: average CPU below 5 per cent, or combined traffic below 1 Mbps, or no traffic seen.
- **Safe by rule.** A device whose DR role is not recorded as production, that has no owning department or business owner, or that is not in Live lifecycle is excluded, and the Excluded tab says why.
- **Money and carbon per device.** Monthly cost from depreciation, maintenance, lease and colocation charges; kW from catalogue power scaled by measured rack draw; kgCO2e a year from kW, hours, site PUE and grid factor.
- **Ranked for the biggest win.** Candidates ordered by GBP a month, then kgCO2e, then kW, with a KPI strip of devices, kW recovered, U freed, GBP a month and kgCO2e a year.
- **Evidence on every line.** The measured reading, the limit and where it came from, kept on the item for the approver and the auditor.
- **A named approval.** Nothing is raised until a named approver approves the plan; the approver and the time are recorded.
- **Work raised in one step.** A draft network change, a decommission work order with a line per device and a disposition order with avoided carbon per line.
- **Carbon the auditor can follow.** Factor table with source, scope and effective year; site energy by period; allocation to tenants by rule; carbon by service, project and person.



Rank	Device	Owner	Evidence	kW	U	GBP a month	kgCO2e a year
1	Dell PowerStore 3200T	9e40b21c-dc70-4523-826d-ea87...	Average CPU 1% (limit 5%), from COMPINV; No traffic seen, from COMPINV	0.95	2	2779	2378
2	Dell PowerStore 3200T	b85fda1e-3637-451a-924f-4a42d...	Average CPU 2% (limit 5%), from COMPINV; No traffic seen, from COMPINV	0.95	2	2718.33	2378
3	Dell PowerStore 3200T	951b9748-0145-4b78-b2d3-800ff...	Average CPU 3% (limit 5%), from COMPINV; No traffic seen, from COMPINV	0.95	2	2618	2378
4	Pure Storage FlashArray//X50 R4	fee9b629-cc69-4abf-8145-f7900...	Average CPU 4% (limit 5%), from COMPINV; No traffic seen, from COMPINV	1	3	2499	2503
5	Pure Storage FlashArray//X50 R4	9e40b21c-dc70-4523-826d-ea87...	Average CPU 1% (limit 5%), from COMPINV; No traffic seen, from COMPINV	1	3	2464	2503
6	Dell PowerStore 3200T	b85fda1e-3637-451a-924f-4a42d...	Average CPU 2% (limit 5%), from COMPINV; No traffic seen, from COMPINV	0.95	2	2426.67	2378
7	Pure Storage FlashArray//X50 R4	951b9748-0145-4b78-b2d3-800ff...	Average CPU 3% (limit 5%), from COMPINV; No traffic seen, from COMPINV	1	3	2384.67	2503
8	Dell PowerStore 3200T	fee9b629-cc69-4abf-8145-f7900...	Average CPU 4% (limit 5%), from COMPINV; No traffic seen, from COMPINV	0.95	2	2240	2378
9	NetApp AFF A400	9e40b21c-dc70-4523-826d-ea87...	Average CPU 1% (limit 5%), from COMPINV; No traffic seen, from COMPINV	1.2	4	2202.67	3004
10	NetApp AFF A400	b85fda1e-3637-451a-924f-4a42d...	Average CPU 2% (limit 5%), from COMPINV; No traffic seen, from COMPINV	1.2	4	2165.33	3004
11	Pure Storage FlashArray//X50 R4	951b9748-0145-4b78-b2d3-800ff...	Average CPU 3% (limit 5%), from COMPINV; No traffic seen, from COMPINV	1	3	2020.67	2503
12	Dell PowerStore 3200T	fee9b629-cc69-4abf-8145-f7900...	Average CPU 4% (limit 5%), from COMPINV; No traffic seen, from COMPINV	0.95	2	1934.33	2378
13	Pure Storage FlashArray//X50 R4	9e40b21c-dc70-4523-826d-ea87...	Average CPU 1% (limit 5%), from COMPINV; No traffic seen, from COMPINV	1	3	1922.67	2503
14	Dell PowerStore 3200T	b85fda1e-3637-451a-924f-4a42d...	Average CPU 2% (limit 5%), from COMPINV; No traffic seen, from COMPINV	0.95	2	1841	2378
15	Dell PowerStore 3200T	951b9748-0145-4b78-b2d3-800ff...	Average CPU 3% (limit 5%), from COMPINV; No traffic seen, from COMPINV	0.95	2	1813	2378

FIGURE 1. SAFE RECLAIM AFTER FIND CANDIDATES: 24 DEVICES TO RECLAIM, 23.4 KW RECOVERED, 61 U FREED, 44,735 GBP A MONTH AND 58,572 KGCO2E A YEAR, EACH RANKED WITH ITS EVIDENCE, KW, U, MONTHLY COST AND ANNUAL CARBON, READY TO SAVE TO PLAN AND REQUEST APPROVAL

Safe reclaim: find, prove, rank

Find candidates. A reclaim plan belongs to a site. Find candidates loads every asset at that site with its catalogue entry, rack and site record and tests each one. A device counts as idle only on measurement: average CPU below 5 per cent, or traffic in plus traffic out below 1 Mbps, or no traffic seen, over 30 days. A device with no readings cannot be shown as idle, so it is never proposed on a hunch.

Hard exclusions. Before any idle test, three rules remove anything that is not proven safe. A DR role of dr, unknown or blank is out: a role that is not proven is not safe. A device with no owning department and no business owner is out, because nobody can confirm it. A device outside Live lifecycle is out. Every exclusion appears on the Excluded tab with its reason, so the capacity manager can see what would be reclaimable once the record is completed.

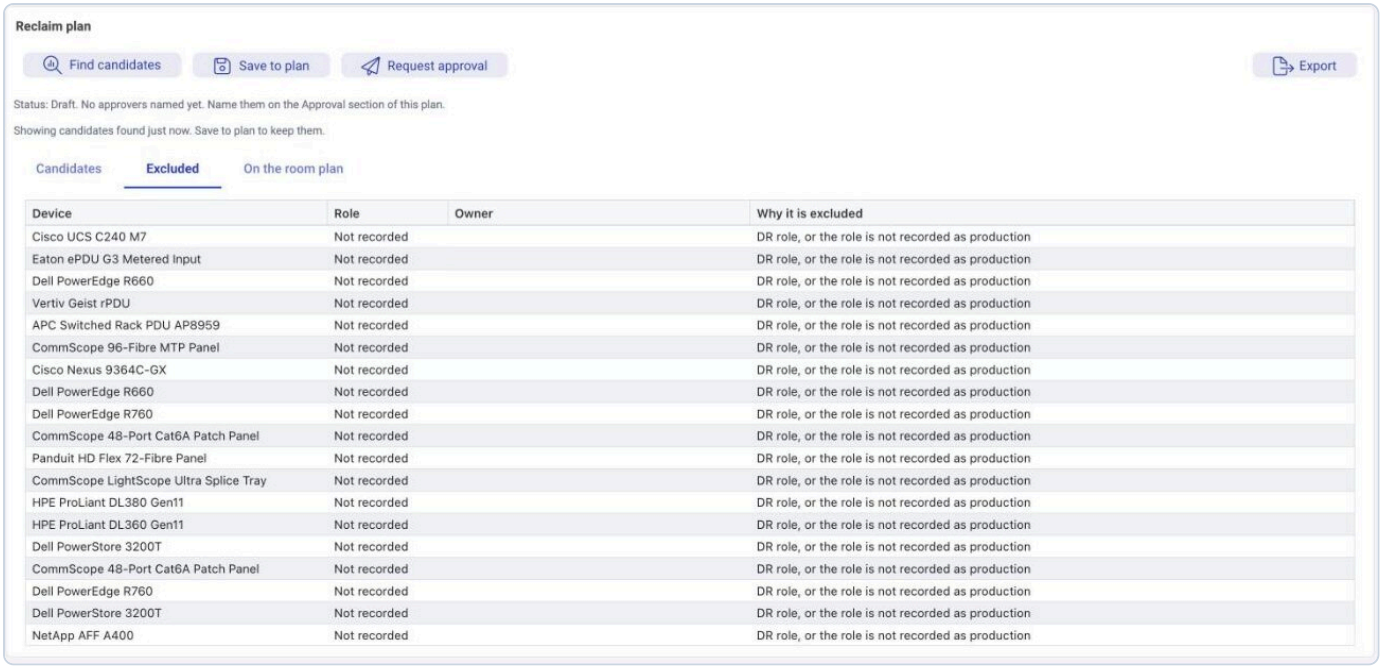
Evidence. Each candidate carries the reading that qualified it, the limit it was tested against and the record it came from, in the form the approver reads on the grid: Average CPU 1% (limit 5%); No traffic seen.

Money per device. Monthly cost is price divided by useful life in months, plus annual maintenance divided by twelve, plus monthly lease and colocation charges. Device kW is catalogue power, scaled by the rack's measured draw against its allocated draw when both are known, so the figure follows what the rack is actually pulling.

Carbon per device. Operational carbon is kW multiplied by 8,760 hours, the site's PUE and the site's grid factor in kgCO2e per kWh. Embodied carbon is held once on the catalogue entry and never duplicated onto the asset. Rack cost is cost per U times total U plus the devices in it; room and site figures roll up from the racks.

Ranking and the room plan. Candidates are ranked by GBP a month, then kgCO2e a year, then kW. The KPI strip totals devices to reclaim, kW recovered, U freed, GBP a month and kgCO2e a year. The room plan tab marks the candidate racks on the data hall plan, warns where a rack holds both a candidate and DR or unattributed kit, and charts cumulative kW by rank so the team can see how far down the list the worthwhile savings run.

Stranded capacity. For every Live rack DemandFlow also reports stranded kW (capacity less the higher of allocated and measured draw), stranded U and their value at the site's GBP per kW year and GBP per U month, rolled up to the room and the site.



Device	Role	Owner	Why it is excluded
Cisco UCS C240 M7	Not recorded		DR role, or the role is not recorded as production
Eaton ePDU G3 Metered Input	Not recorded		DR role, or the role is not recorded as production
Dell PowerEdge R660	Not recorded		DR role, or the role is not recorded as production
Vertiv Geist rPDU	Not recorded		DR role, or the role is not recorded as production
APC Switched Rack PDU AP8959	Not recorded		DR role, or the role is not recorded as production
CommScope 96-Fibre MTP Panel	Not recorded		DR role, or the role is not recorded as production
Cisco Nexus 9364C-GX	Not recorded		DR role, or the role is not recorded as production
Dell PowerEdge R660	Not recorded		DR role, or the role is not recorded as production
Dell PowerEdge R760	Not recorded		DR role, or the role is not recorded as production
CommScope 48-Port Cat6A Patch Panel	Not recorded		DR role, or the role is not recorded as production
Panduit HD Flex 72-Fibre Panel	Not recorded		DR role, or the role is not recorded as production
CommScope LightScope Ultra Splice Tray	Not recorded		DR role, or the role is not recorded as production
HPE ProLiant DL380 Gen11	Not recorded		DR role, or the role is not recorded as production
HPE ProLiant DL360 Gen11	Not recorded		DR role, or the role is not recorded as production
Dell PowerStore 3200T	Not recorded		DR role, or the role is not recorded as production
CommScope 48-Port Cat6A Patch Panel	Not recorded		DR role, or the role is not recorded as production
Dell PowerEdge R760	Not recorded		DR role, or the role is not recorded as production
Dell PowerStore 3200T	Not recorded		DR role, or the role is not recorded as production
NetApp AFF A400	Not recorded		DR role, or the role is not recorded as production

FIGURE 2. THE EXCLUDED TAB: DEVICES LEFT OUT OF THE PLAN WITH THE REASON, HERE A DR ROLE, OR A ROLE THAT IS NOT RECORDED AS PRODUCTION



FIGURE 3. ON THE ROOM PLAN: CUMULATIVE KW RECOVERED BY RANK AND THE DATA HALL PLAN WITH THE CANDIDATE RACKS MARKED

Approve, then raise the change, the work order and the disposal order

Save to plan. Saving writes the candidates as reclaim items under the plan, each with its owner, DR role, kW, U, GBP a year, kgCO2e a year, evidence and rank, and writes the plan totals. Items from an earlier run are set to excluded, so the plan always reflects the latest evidence.

Request approval. A plan cannot go for approval without named approvers. Only a named approver can approve or reject it. Until the plan is approved, with the approver and

Avoided carbon by route. Each disposition line takes a route: reuse, refurbish, recycle or landfill. Avoided carbon is the asset's embodied kgCO2e multiplied by the route factor, by default 1.0 for reuse, 0.8 for refurbish, 0.2 for recycle and 0 for landfill; a tenant can set its own factors. The line recalculates on save and warns when the catalogue entry has no embodied carbon, so the figure is never silently zero.

the time recorded on it, DemandFlow refuses to raise any work: the message is plain, "Reclaim plan needs a named approval first".

What is raised. On an approved plan, one step raises a draft network change on the site, a decommission work order with a work order item per device (action remove), and a disposition order of type data centre decommission with a line per device carrying its avoided carbon. Items that are excluded or already raised are skipped, so the step can be run again safely. Rows can also be exported for an operator's own change process.

Closing the loop. A completed line marks the asset: reuse or refurbish as resold, recycle as recycled, with ITAD status disposed and certified, and the order totals asset count, weight, landfill diverted and CO2 avoided. The reclaim plan keeps a reference to the change and the disposal order it raised, so the audit trail runs from the idle reading to the certificate.

Where the figures live. Disposal, embodied carbon and power sit on the physical item and its catalogue entry, never on the logical platform. Racks, rooms and sites roll them up, so there is one place to correct a figure and every total follows.

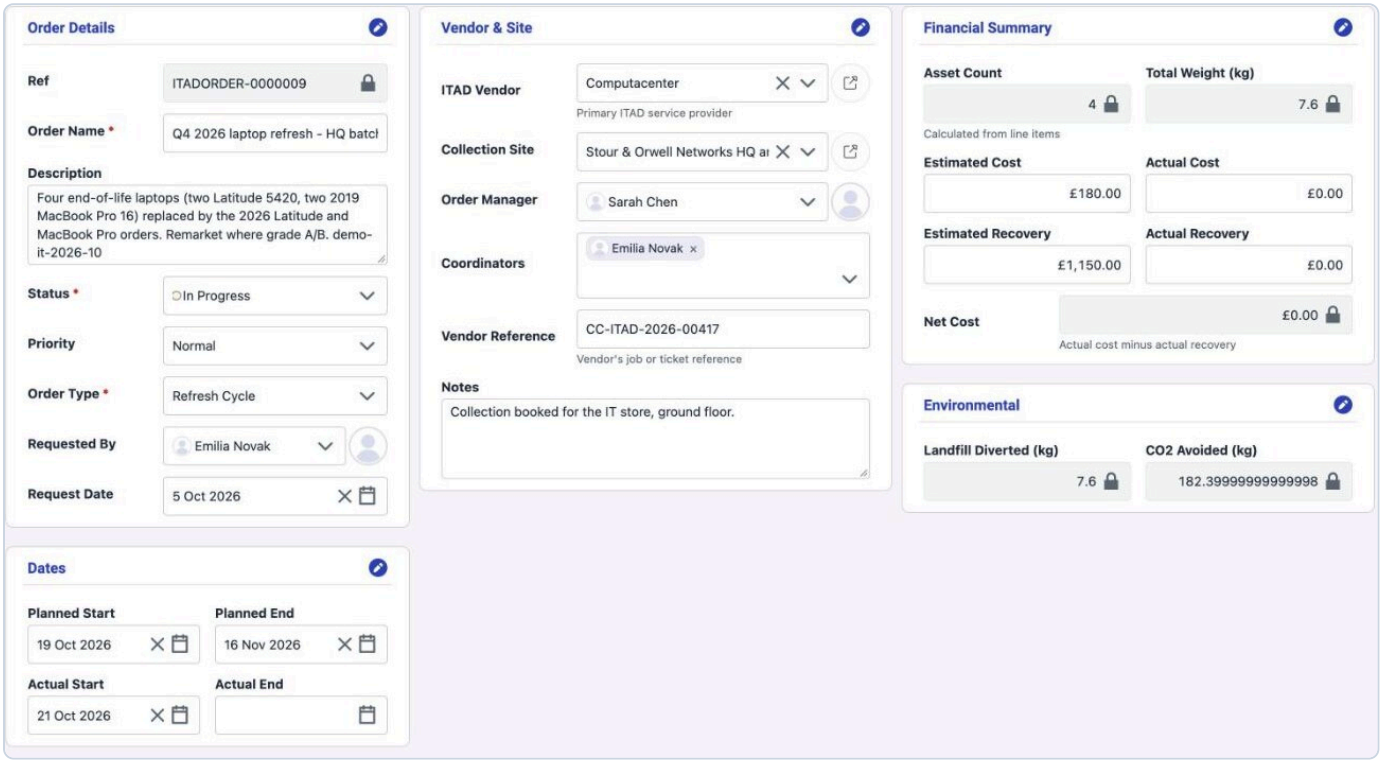


FIGURE 4. A DISPOSITION ORDER: ASSET COUNT, WEIGHT, COSTS AND RECOVERY, LANDFILL DIVERTED IN KG AND CO2 AVOIDED, WITH A LINE PER ASSET CARRYING ITS ROUTE AND AVOIDED CARBON

The estate in view: audit dashboard and asset efficiency

Network audit dashboard. Four views over the whole estate. Reclaimable Assets counts ghost servers (server class, idle, powered on, no traffic) and zombie ports, estimates monthly waste from idle power, totals reclaimable rack space in U, lists the top ten idle assets by idle power cost and charts dead inventory by site. Lifecycle Runway shows end of life now, end of support within six months, contracts expiring within twelve months, a refresh budget signal from net book value and a runway gantt. Power and Sustainability shows total estate draw in kW, idle asset draw, the annual footprint in tCO2e, avoidable emissions, monthly kWh by site and a power state donut. ITAD Pipeline follows assets through disposal.

Asset efficiency. Every asset with its latest monitoring snapshot: CPU, memory, network in and out, active ports, book value and when it was last monitored. The KPI strip totals assets, idle (idle plus candidate for removal) and underutilised, each with its book value, so the FinOps lead sees the waste opportunity in money as well as counts. Filters narrow the grid to Idle / Waste or Underutilised. CPU below 10 per cent shows red and below 30 amber; memory below 20 red and below 40 amber, so the list reads at a glance.

From view to action. The audit status on an asset (not assessed, in use, underutilised, idle, candidate for removal, decommissioned), its power state, traffic flag,

average CPU and traffic, DR role, owner and lifecycle are the same fields the reclaim engine tests, so what the dashboard shows is what the plan will find.

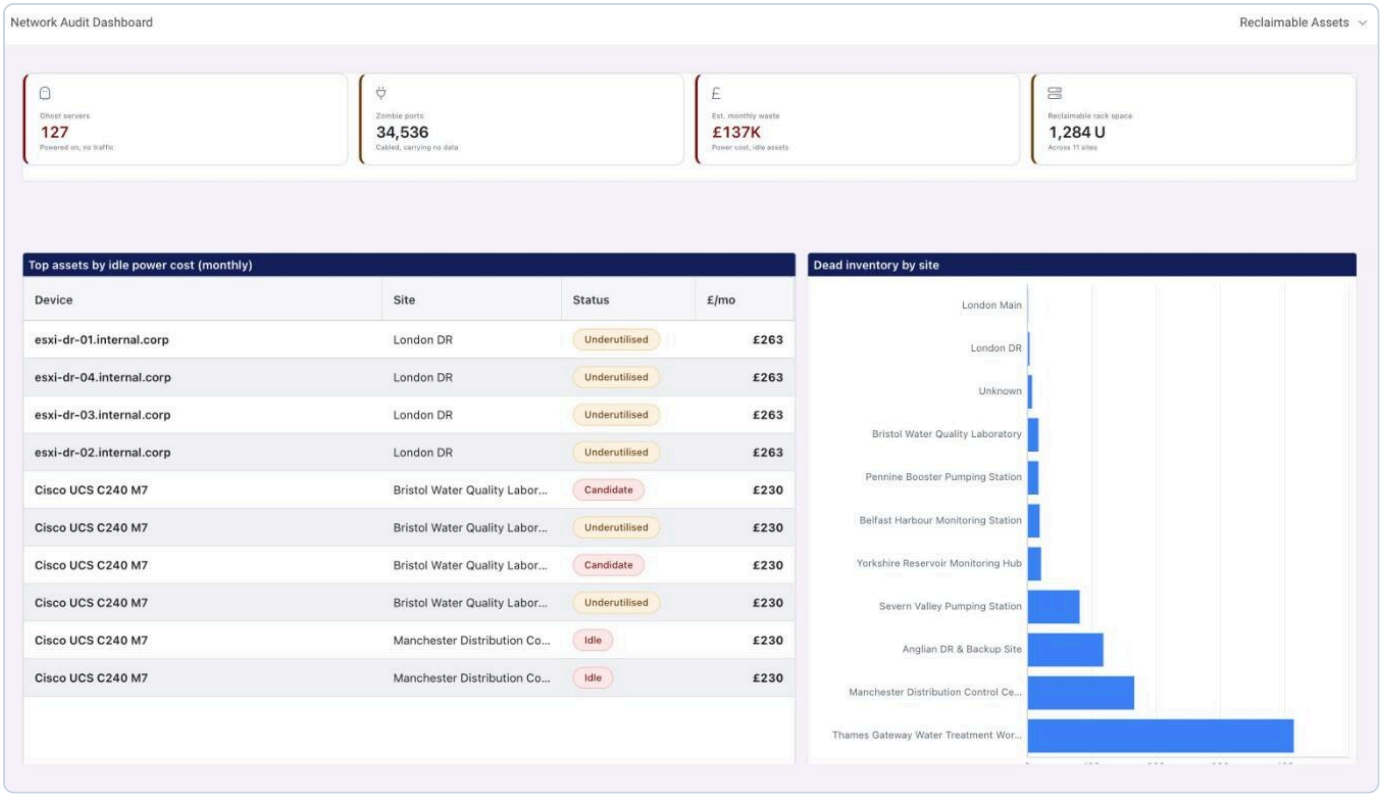


FIGURE 5. THE NETWORK AUDIT DASHBOARD, RECLAIMABLE ASSETS VIEW: 127 GHOST SERVERS, 34,536 ZOMBIE PORTS, 137K GBP ESTIMATED MONTHLY WASTE, 1,284 U OF RECLAIMABLE RACK SPACE, TOP ASSETS BY IDLE POWER COST AND DEAD INVENTORY BY SITE

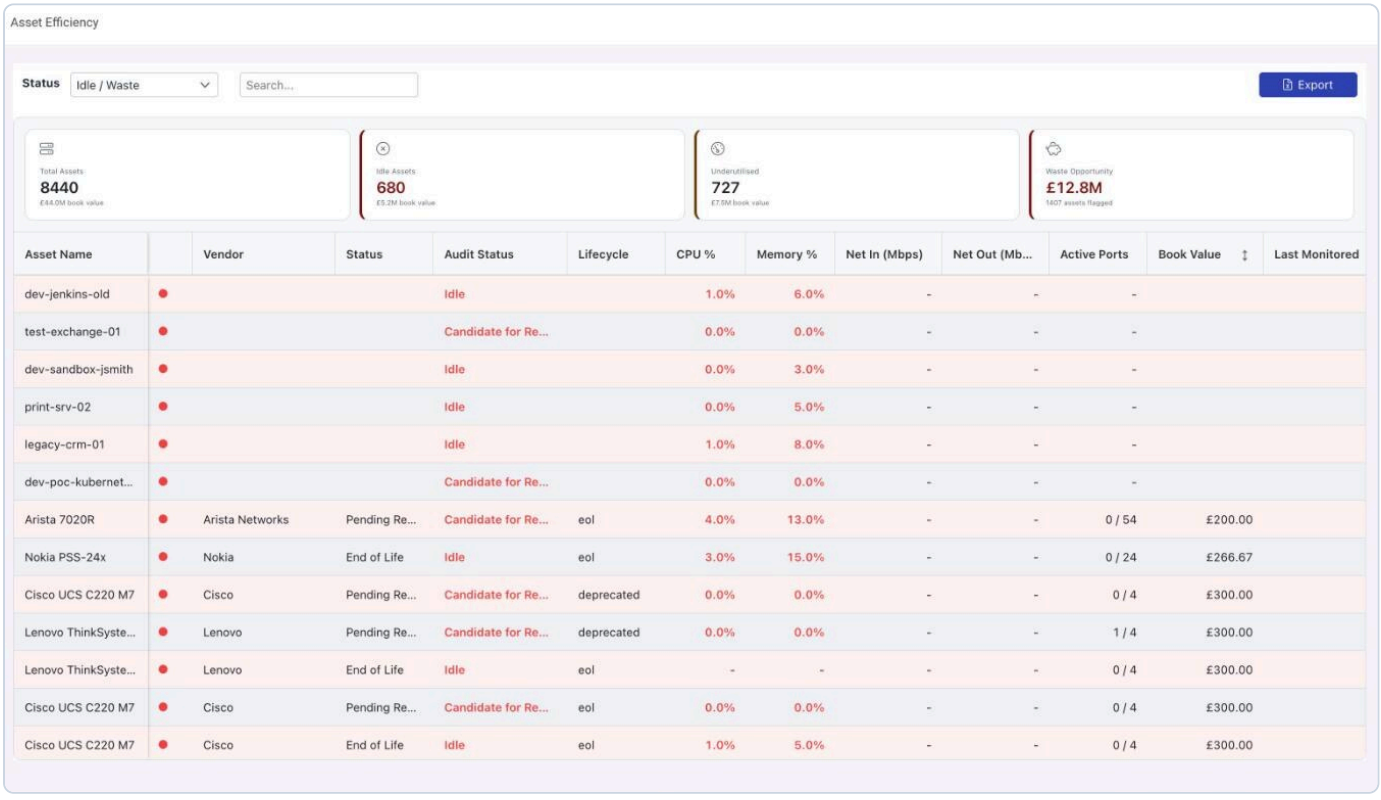


FIGURE 6. ASSET EFFICIENCY FILTERED TO IDLE / WASTE: 8,440 ASSETS, 680 IDLE, 727 UNDERUTILISED AND A 12.8M GBP WASTE OPPORTUNITY, WITH CPU, MEMORY AND BOOK VALUE PER ASSET

Carbon accounting: sites, energy, tenants, services, materials and people

Carbon factors. One table of factors by category (material, plant and fuel, energy, waste, transport, equipment), scope 1, 2 or 3, unit, kgCO2e per unit, effective year and source (DESNZ, DEFRA, IPCC, manufacturer or custom), with WEEE category, recyclability and GRI reference where they apply. Sites, energy readings, project materials and carbon profile lines all look up this one table, so a factor is changed in one place and every figure that uses it follows.

Sites, rooms and racks. A site carries its PUE, grid factor, cost per kWh, annual energy, annual Scope 2 emissions and renewable percentage; the Cost and carbon panel shows monthly cost, embodied carbon, operational carbon a year, PUE and grid factor as tiles, carbon by rack as a stacked chart, and a racks grid with the top three devices by operational carbon in each. Rooms show PUE, estimated monthly power cost and reclaimable rack units; racks show cost per U, monthly cost, measured and allocated power, embodied and operational carbon.

Energy readings and tenant recharge. Readings per site per period hold grid kWh, generator litres, solar kWh and cost, from a meter or an estimate. Carbon is grid kWh times the grid factor plus generator litres times the fuel factor; solar carries none. Allocate to tenants splits a reading across the active tenancies by the power system's rule: measured from tenant meter readings, by equipment rating from the installed radio and mount equipment, or fixed share with the remainder staying with the site owner. Each allocation becomes a proposed recharge adjustment on the tenancy. The site Energy panel charts monthly kWh by tenant and kgCO2e by source, and exports ESG rows with a site owner line.

Service carbon. Every device that carries a network service, directly or through a platform instance, contributes its embodied and operational carbon, shared across the services it carries. Recalculate all works through the services in batches and stores the result on each service with the time it was calculated; the report lists every service and charts the top twenty.

Projects: materials and plant. Project materials carry a carbon factor, quantity, unit, weight, recyclable flag, supplier and delivery date, and compute Scope 3 kgCO2e as quantity times the factor rate. Plant and machinery lines compute Scope 1 from days on site and fuel.

People: carbon profiles. A carbon profile for a working pattern (site, office, hybrid, remote, mobile) lists equipment and travel lines, such as laptop, monitor, phone and vehicle kilometres, each with a factor and usage per day, summing to kgCO2e per day. A billable resource links to a profile, so day rate and daily carbon sit side by side wherever that resource is planned.

Emissions by site workbook. A ready made Workbooks template over the site and factor tables: reported Scope 2 where a site has it, otherwise annual kWh times the factor, net of the renewable percentage, grouped by region with a high emitter threshold (default 100 t) and a list of sites with figures missing. Every grid in the module exports to Excel.

Summary of specifications

Item	Detail
Safe reclaim	Reclaim plan per site; Find candidates over every asset at the site; Candidates, Excluded and On the room plan tabs; KPI strip of devices, kW, U, GBP a month, kgCO2e a year; Save to plan; Request approval; Export
Idle test	Measured only: average CPU below 5 per cent, or traffic in plus out below 1 Mbps, or no traffic seen, over 30 days; devices without readings are never proposed
Hard exclusions	DR role dr, unknown or blank; no owning department and no business owner; lifecycle not Live; each shown on the Excluded tab with its reason
Ranking	GBP a month descending, then kgCO2e a year, then kW; evidence per item with reading, limit and source

Item	Detail
Cost and carbon per device	Price / useful life months + annual maintenance / 12 + monthly lease + monthly colocation; kW from catalogue power scaled by rack measured / allocated; operational kgCO2e = kW x 8,760 h x PUE x grid factor; embodied on the catalogue entry
Stranded capacity	Per Live rack: capacity kW less the higher of allocated and measured; U less used U; valued at GBP per kW year and GBP per U month; rolled up to room and site
Approval gate	Named approvers required; only a named approver can approve or reject; approver and time recorded; no work raised until approved
Raised on approval	Draft network change on the site; decommission work order with an item per device (action remove); disposition order (data centre decommission) with a line per device and avoided carbon; excluded and already raised items skipped
Avoided carbon	Embodied kgCO2e x route factor: reuse 1.0, refurbish 0.8, recycle 0.2, landfill 0 (tenant override); completed lines mark the asset resold or recycled and disposed certified; order totals weight, landfill diverted and CO2 avoided
Audit dashboard	Reclaimable Assets (ghost servers, zombie ports, estimated monthly waste, reclaimable U, top 10 idle by power cost, dead inventory by site); Lifecycle Runway; Power and Sustainability (estate draw, idle draw, annual tCO2e, avoidable emissions, kWh by site); ITAD Pipeline
Asset efficiency	Every asset with latest monitoring snapshot: CPU, memory, net in and out, active ports, book value, last monitored; KPI strip total, idle, underutilised with book value; Idle / Waste and Underutilised filters; colour bands CPU 10 and 30, memory 20 and 40
Carbon factors	Category material, plant and fuel, energy, waste, transport, equipment; scope 1, 2, 3; unit; kgCO2e per unit; effective year; source DESNZ, DEFRA, IPCC, manufacturer, custom; WEEE category; recyclability; GRI reference; one table used by sites, readings, materials and profiles
Site, room, rack	Site PUE, grid factor, cost per kWh, annual kWh, annual Scope 2, renewable %, embodied, operational, stranded kW, U and value; room PUE, estimated monthly power cost, reclaimable U; rack cost per U, monthly cost, measured and allocated power, embodied and operational carbon; Cost and carbon panel on every site
Energy and tenants	Readings per site per period: grid kWh, generator litres, solar kWh, cost, meter or estimate; carbon from grid and fuel factors, solar zero; allocation rules measured, by equipment rating, fixed share; proposed recharge adjustment per tenancy; Energy panel with kWh by tenant, kgCO2e by source and ESG export
Service carbon	Device carbon shared across the services it carries via links and platform instances; Recalculate all in batches; stored per service with calculation time; grid and top 20 chart
Projects and people	Project materials Scope 3 (quantity x factor, weight, recyclable, supplier); plant and machinery Scope 1 (days on site, fuel); carbon profiles by working pattern summing to kgCO2e per day, linked to billable resources
Reporting	Emissions by site workbook (reported Scope 2 or kWh x factor, net of renewables, by region, high emitter threshold default 100 t, missing figures listed); every grid exports to Excel
Who it is for	Data centre, colocation, tower and telecom operators and utilities with their own technical estates: heads of infrastructure and capacity, FinOps and IT asset managers, sustainability and ESG reporting leads, procurement and ITAD coordinators

www.demandflow.com

Book a demo: www.demandflow.com/esg-carbon/

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