

# What is PUE (Power Utilisation Effectiveness)?

Recently we have seen the emergence of P.U.E. as the pre-dominant measure of data-centre efficiency. The Green Grid (recognised as the UK and increasingly global authority on resource efficiency in information technology and data centres [www.thegreengrid.org](http://www.thegreengrid.org)), US Department of Energy, Japan's Ministry of Economy, the EU Code of Conduct on Data Centres amongst many others have named P.U.E. as the industry's preferred energy efficiency metric.

This formalises PUE as a global guiding principle to drive universal understanding of data centre efficiency.

Calculating PUE is simply the total facility energy supplied divided by the total energy consumed by the IT equipment.

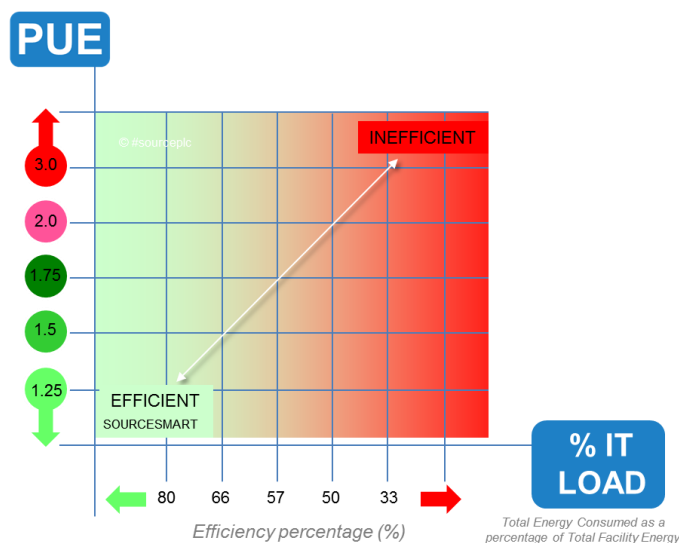
## Total Facility Energy

Measured in kilowatts, Total Facility Energy includes all of the power consumed by the IT Equipment and all of the power consumed to get it there. This will include but not limited to, facility cooling, air-conditioning, lighting and UPS. The measurement is taken from the energy meter at the incoming point of delivery to the facility.

## Total IT Energy Consumed

Also measured in kilowatts, the Total IT Energy Consumed includes all IT equipment used for the delivery of IT services, this is likely to include servers, storage, routers, firewalls, switches, blade systems and all other service delivery equipment. The measurement is taken from the UPS infrastructure delivering the IT load.

- A PUE of 2 means efficiency of just 50% - twice as much power needs to be delivered for your IT needs.
- A PUE of 1.25 means you're running a highly efficient data-centre as 80% of power is used efficiently.



## SourceSmart<sup>TM</sup> Data Centres Deliver:

- ✓ Guaranteed PUE of 1.25
- ✓ Tier 3+ / BIL3 / ISO 9001/27001/14001
- ✓ Single Racks to Private Halls
- ✓ Move-In-Ready
- ✓ Flexible terms – 1month to 15 years
- ✓ Just £995 / month 5kW power inclusive
- ✓ ConnectNOW<sup>TM</sup> – ready connected



## Efficient SourceSmart<sup>TM</sup> Data Centres

*Good for you, your business and the planet*

### Guaranteed PUE

PUE guaranteed at 1.25 within our smartest, air-cooled facilities, saving over £10,000 per annum for a 5kW usage when compared to standard PUE of 2.0.

### Free Fresh Air Cooling

Our Smartest facilities make the most of 'free-cooling' with an adiabatic cooling systems that circulates natural air throughout the facility. Power consumption and carbon footprint are dramatically reduced. Temperatures are maintained to well within the industry ASHRAE standards. PUE is guaranteed at 1.25

### Back-Up Air Conditioning

In extreme external temperatures, anomalies or pollution, outside vents are automatically closed off and the air conditioning back-up systems activated.

### Compliant and Secure

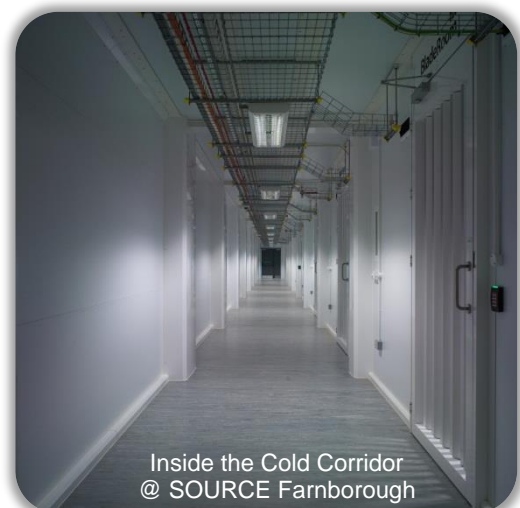
Our facilities are built to and in many aspects exceed Tier 3+ standards. Some SOURCE facilities provide BIL3 (Government Confidential) security, ISO 27001 for security, BS 25999 for business continuity and ISO14001 for environmental management systems.

### Connected

Our SourceSmart Data Centres are connected via 10Gbps resilient networks with diverse building entry. We deliver high-speed Internet connectivity with Tier1 Global provider, Level 3 Communications.

### Ideal for:

- ✓ High-density, energy efficient deployments
- ✓ Low Carbon Footprint deployments
- ✓ Cloud Provider and Cloud infrastructure
- ✓ Wholesale & Enterprise deployment
- ✓ Business requiring scalable equipment and server storage
- ✓ Hosting servers at the centre of an IPVPN/WAN infrastructure
- ✓ PCI Compliant services
- ✓ Local and National Government
- ✓ Resilient , available connectivity and Tier 1 Internet solutions



## How to measure PUE



**PUE = Power Utilisation Effectiveness**

PUE shows the Energy Efficiency of a data-centre or IT Room and is a FLUID not FIXED metric. It is the TOTAL FACILITY ENERGY supplied to the facility divided by the TOTAL IT ENERGY consumed by the IT Equipment.



### TOTAL FACILITY ENERGY

This is the total of all energy consumed in your data-centre. This includes everything from office services, lighting, office air-conditioning, UPS losses and other electrical loss through to the data-floor CRAH units, PDUs and IT Equipment use

DIVIDED



### TOTAL IT ENERGY CONSUMED

The total of all energy consumed within your racks or data-hall. Often measured at in-rack PDU's but may be measured at the delivery UPS and represents the actual power consumed by your IT hardware.

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= **PUE**

## How much £?

Typical 5 x Rack Deployment:  
25kW IT Load at 11pence per kW hour

TOTAL ENERGY kW	IT CONSUMED kW	P.U.E.	POWER £'s / Month
75 kW	25 kW	3.0	£5,940.00
50 kW	25 kW	2.0	£3,960.00
43.75 kW	25 kW	1.75	£3,465.00
37.50 kW	25 kW	1.5	£2,970.00
31.25 kW	25 kW	1.25	£2,475.00 

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**SourceSmart™ Data Centres will save you over £41,000 per annum in power cost alone!**



