

# Ergo Power Manager

# Motivation:

# Energy Costs Climate Change

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## Whitehall bid to cut IT emissions

**The government hopes to be the first in the world to make its computer system "carbon neutral".**



The Cabinet Office hopes measures like switching off computers at night and making sure servers do not stand idle will save 117,500 tonnes of carbon.

Computer systems generate up to 20% of all carbon produced by government.

The environmental audit committee has warned that the government is "lagging behind" its own emissions targets and IT systems are among factors to blame.

The British government says it wants to be the first in the world to make its computer system's energy output "carbon neutral" - through

Computer systems generate 20% of carbon emissions

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## Office workers who leave computers on all night 'add to global warming'

By Martin Hickman, Consumer Affairs Correspondent  
Friday, 6 October 2006

Don't just switch off the television, switch off the computer too. Office workers who leave two million computers on every night are speeding up climate change, according to new research.

One in five white-collar workers told a national survey that they left their computers on at least three times a week, wasting more than £100m of electricity every year.

According to the PC Energy Report, power stations generating the electricity emit 200,000 tonnes of carbon a year - equivalent to the exhaust fumes of 120,000 4x4 cars. Switching off would save as much pollution as from all the cars in a city the size of Liverpool.

# Some Useful Statistics...

A typical PC:



Uses 100-200 W (Desktop) or 25-50 W (Laptop)

Or costs > **£80 year** to run (some **up to £150**)

Or approximately 800kg of CO<sub>2</sub> per year

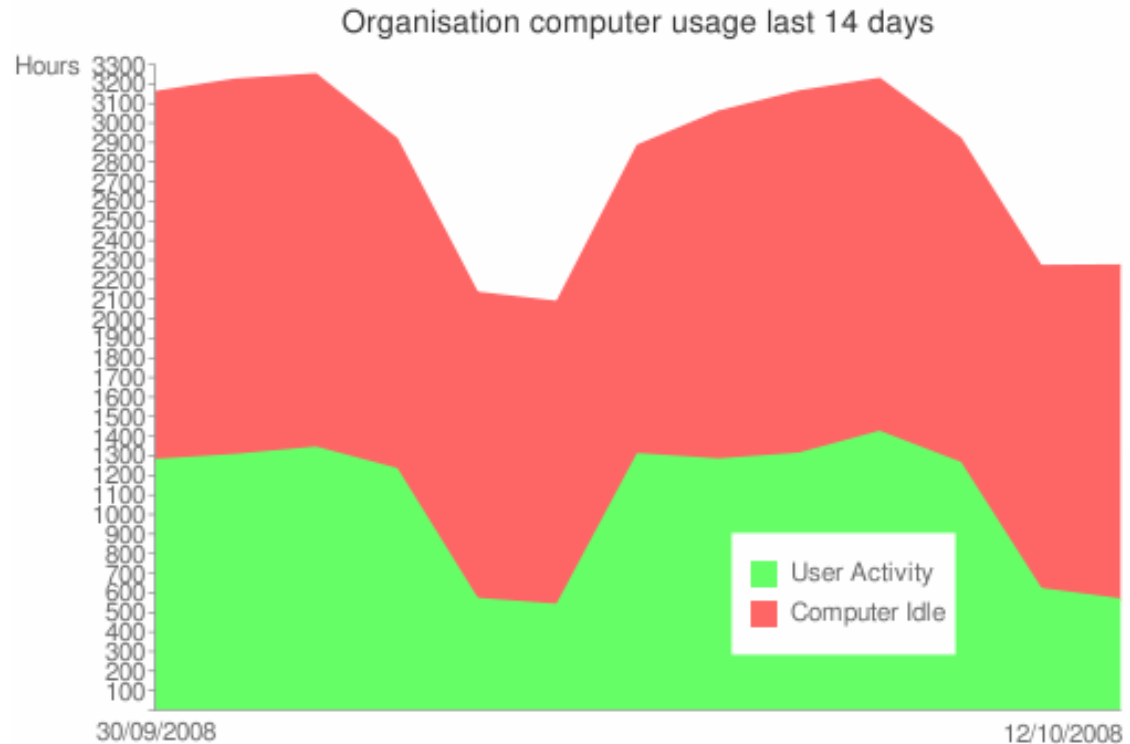
# Don't people turn off?

A real example:

Sheffield Teaching Hospitals   
NHS Foundation Trust

68 % Waste

£60 per PC



Actual data from Sheffield Teaching Hospitals deployment 1<sup>st</sup> October 2008

Based upon 150W typical PC with energy cost of £0.12 / KWh

# Potential Savings



Computers / Energy Costs £	Best Case £ 10 hours / Weekdays only	Worst Case £ 24 hours / All Days	Potential Savings £
500	23,400	57,240	<b>33,840</b>
1000	46,800	114,480	<b>67,680</b>
5000	234,000	572,400	<b>338,400</b>
10000	468,000	1,144,800	<b>676,800</b>

\*Based upon representative 150W energy requirement of Standard PC charged at 12p/KWh previously powered-on for 24 hours per day now active for only 10 hours per day (14 hour saving per computer per day weekdays plus all weekend). This excludes the additional cost savings available when the equipment is located in an air conditioned environment. The per PC saving is approximately £67 per annum.

# Common Solutions

- Do nothing!
- Ask users to turn off inactive equipment
- Configure manually on each system
- Configure at operating system deployment time
- Install power management software

# Doesn't Windows do this?

- Only Power Users / Administrators can configure
- Windows XP has NO remote configuration
- Windows Vista has BASIC remote configuration
- No way to check or report effectiveness



# Solution: Ergo Power Manager

*Simple - the bits Microsoft forgot !*

- Powerful, comprehensive, and very flexible
- Different policies per user / group / machine etc
- Simple and quick to deploy / manage - AD/SMS...
- Web-based reporting of on-going effectiveness
- Easy to use – feels like built into Windows
- Visible savings within weeks

# Control Features

## Setting

- Product Licensing
- Remote Management and Monitoring
- Separate DC Settings
- Hide Power Management Tools
- Hibernate (Suspend to disk)

Keep Awake Server Service

Ignore User Power Settings

Scheduled Wake



Scheduled Shutdown/Sleep

Protected Programs



Protected Files

Custom Suspend Actions

Advanced

Policy Enforcement



Global Power Settings

No User Power Settings

Default User Power Settings

Scheduled Sleep/Shutdown/Wake

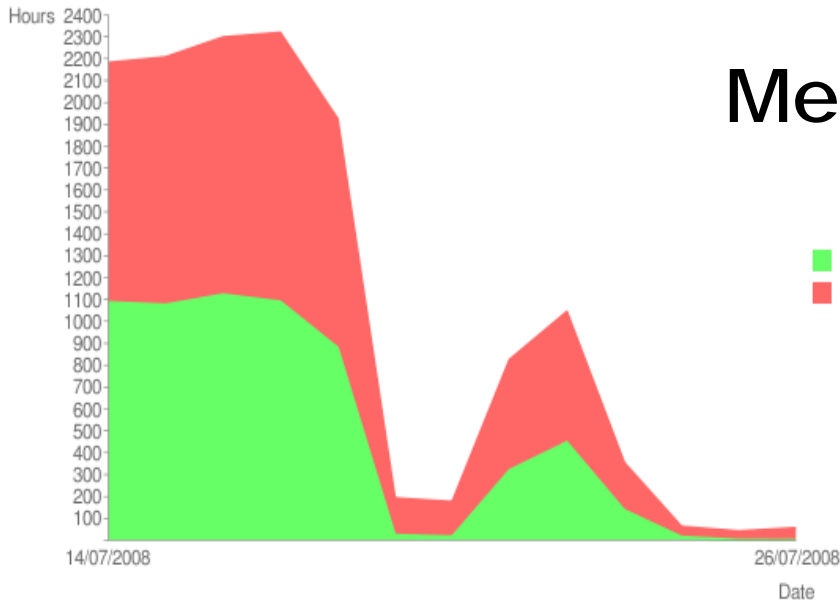
Dynamic override/protection

Idle actions:

- Logout, Sleep/Hibernate, Shutdown
- CPU + Screen
- + HDD + Computer

# Measurement and Reporting

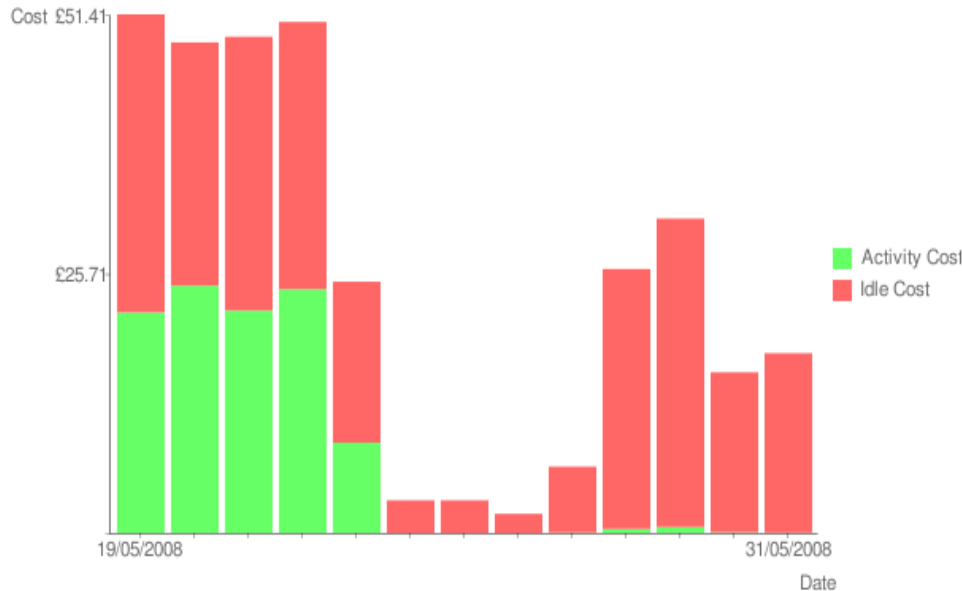
Organisation computer usage last 14 days



User Activity  
Computer Idle

- Per computer and per group/site
- Highlights most and least wasteful systems
- Only anonymous data logged
- Minimal network overhead <0.5KB per computer/day
- Download in Excel format
- Fully hosted service or local server (larger organisations)

Estimated site costs last 14 days



Activity Cost  
Idle Cost

# Return on Investment



Typically:  
One Month

Based upon typical 150W PC saving £60 per annum

# Example:



UNIVERSITY OF  
LIVERPOOL

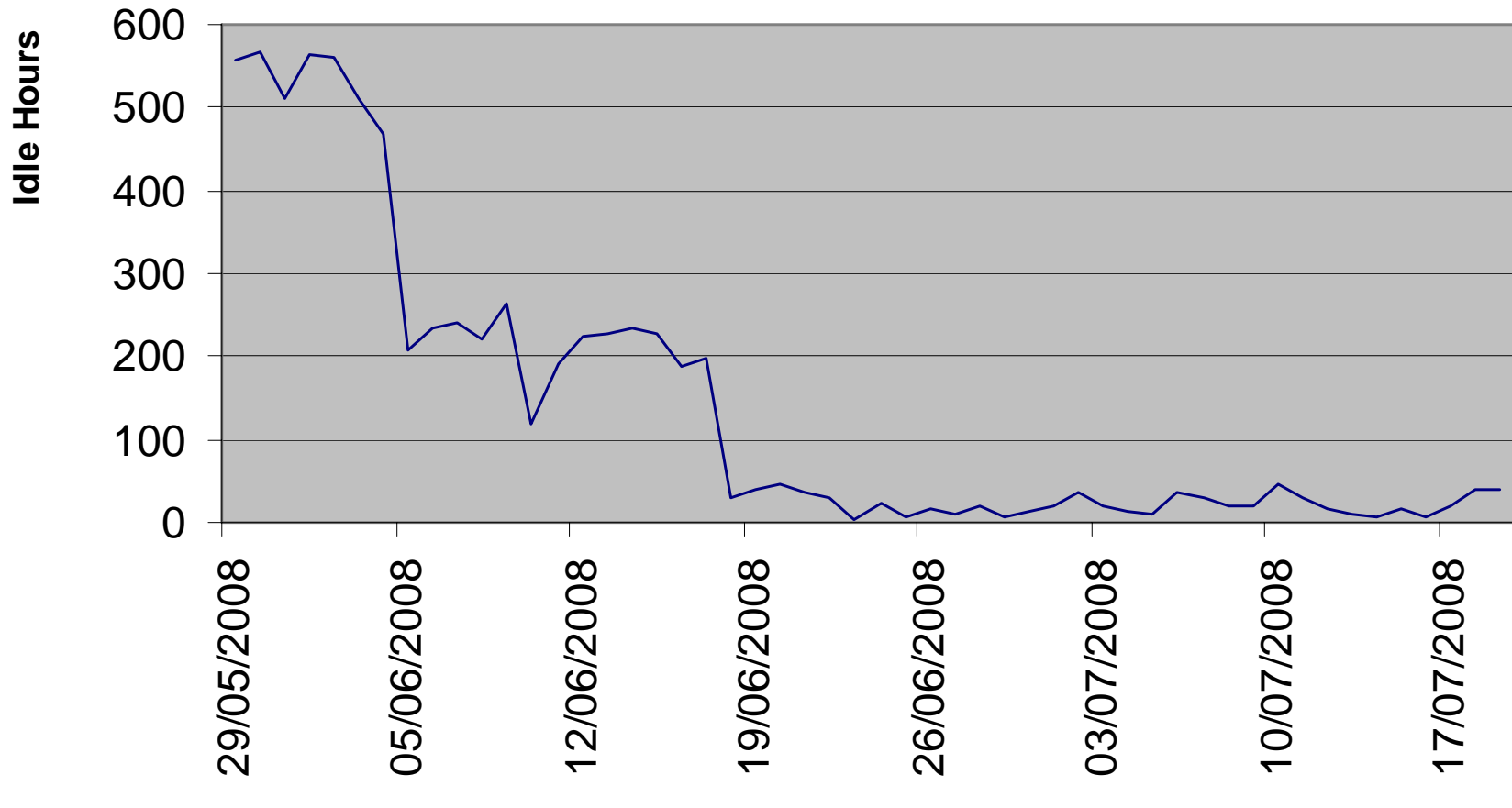
- Operating successfully for over 12 months
- Deployed to approximately 3500 computers
- Over 12000 computers potential (Approx 50% staff)
- Majority of student access area PCs on 24/7 before power saving

## One example – BHCL Student Area:

- Room of 26 PCs used by students in public access area
- Average PC used for less than 2 hours per day (previously on 24/7)
- After power saving reduction in waste hours of around 90%
- Estimated reduction in energy costs per PC / year of around £72

\*Based upon estimated 250W consumption of PC with CRT monitor and P4 CPU charged at £0.15 /kWh previously on 24 hours per day 365 days per year. Details available in case study.

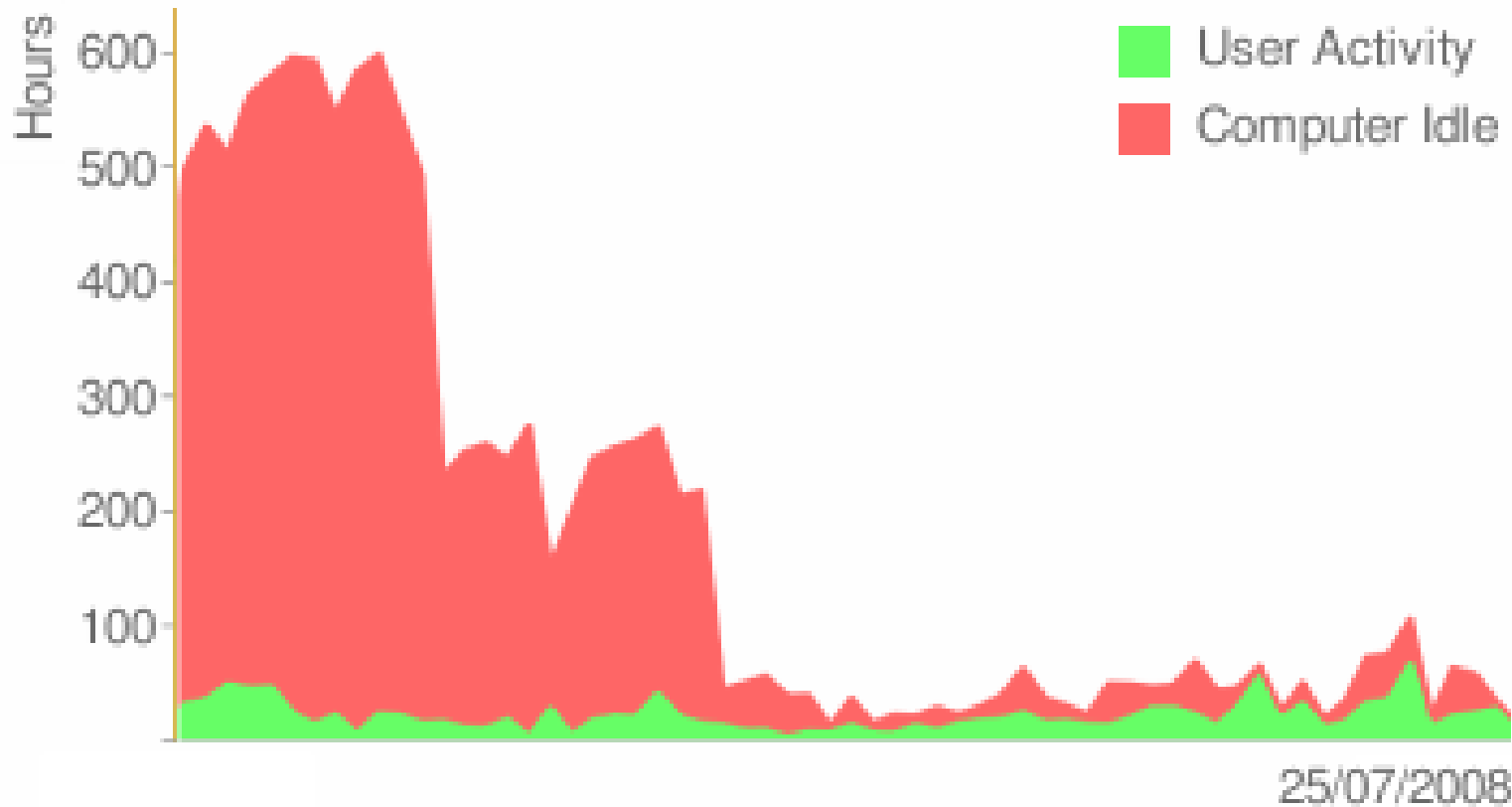
# University of Liverpool – BHCL Test Site



<http://www.pmstats.org:8080/OrganisationSummary.aspx?OrganisationGUID=8249aeae-5db6-4591-9ff8-49df4b2d2c0a>

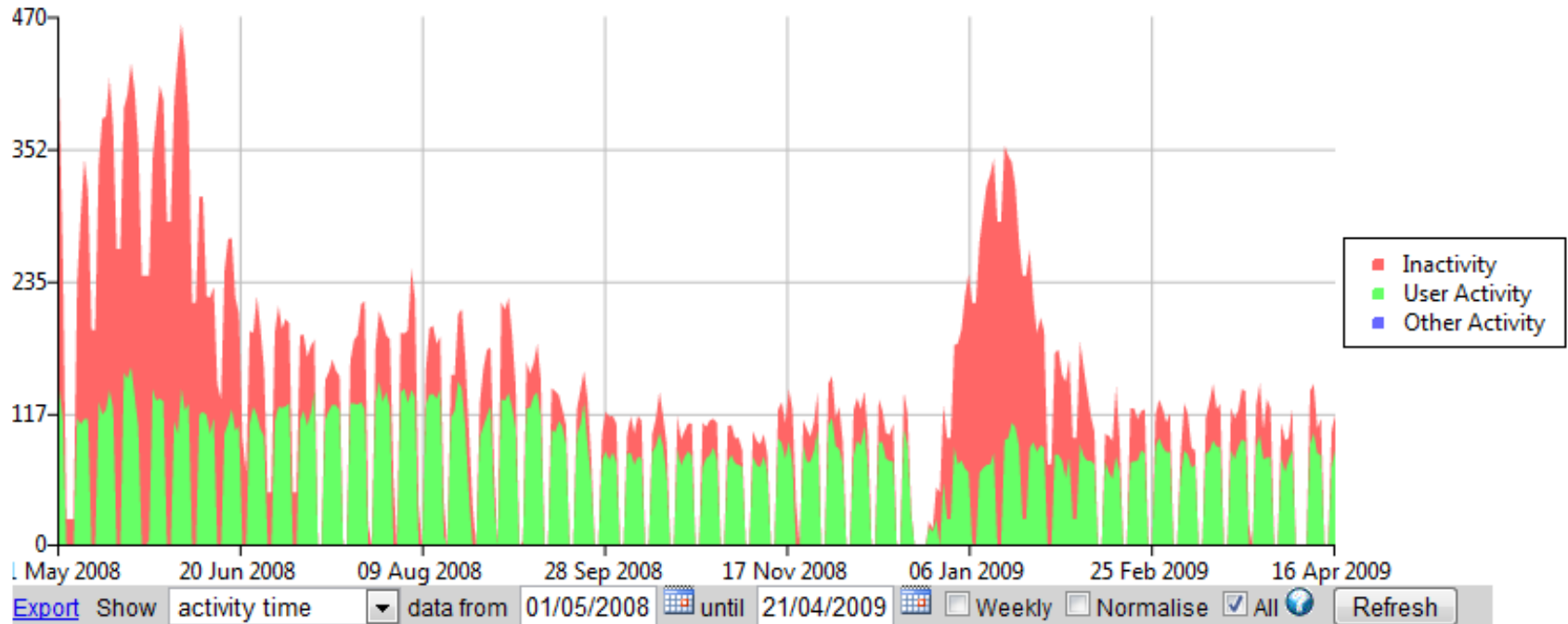
# Liverpool: Before and after

Organisation computer usage last 90 days



## Activity / Hours

24738.0 inactive hours. Equivalent estimated £ 593.71



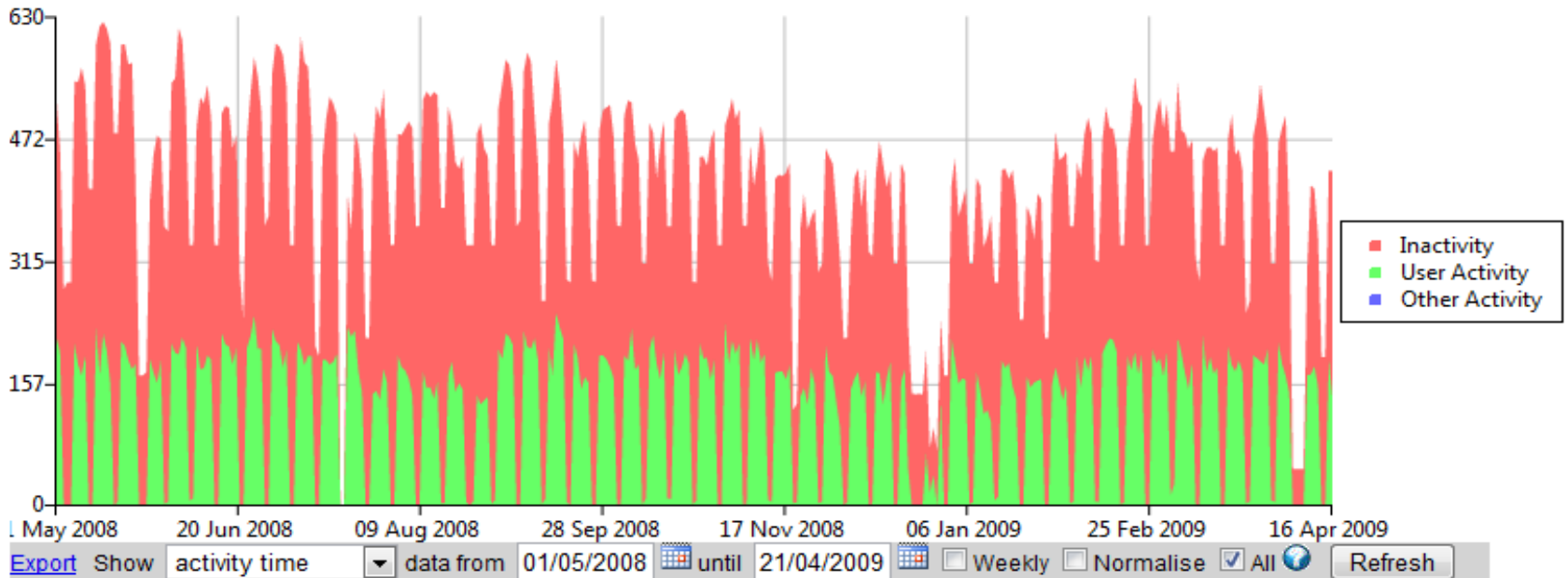
## Computers

	Version	Last Status	Inactive %	Inactive Hours	Active Hours	Inactive	User Active	Other Active
<a href="#">MILLINGMACHINE</a>	5.1.0.3440	21/04/2009	41.94	22.75	31.50			
<a href="#">ROBOT4BENCH2</a>	5.1.0.3440	20/04/2009	73.79	19.00	6.75			
<a href="#">ROBOT3BENCH7</a>	5.1.0.3440	21/04/2009	28.46	19.00	47.75			
<a href="#">PICKBENCH1</a>	5.1.0.3440	21/04/2009	27.47	16.00	42.25			
<a href="#">ROBOT1BENCH3</a>	5.1.0.3440	21/04/2009	44.14	16.00	20.25			
<a href="#">ROBOT1BENCH4</a>	5.1.0.3440	21/04/2009	27.12	16.00	43.00			

Active power management in action

## Activity / Hours

102216.3 inactive hours. Equivalent estimated £ 2453.19



## Computers

	Version	Last Status	Inactive %	Inactive Hours	Active Hours	<span style="color: red;">■</span> Inactive	<span style="color: green;">■</span> User Active	<span style="color: blue;">■</span> Other Active
<a href="#">HEALTH1-4</a>	5.1.0.3440	21/04/2009	95.23	169.75	8.50			
<a href="#">JONATHANM</a>	5.0.8.2844	21/04/2009	82.68	158.75	33.25			
<a href="#">HEFE1-4</a>	5.1.0.3440	21/04/2009	85.43	158.25	27.00			
<a href="#">EDUCATION2-1</a>	5.1.0.3440	21/04/2009	83.92	155.25	29.75			
<a href="#">PURCHASING1-3</a>	5.1.0.3440	21/04/2009	75.39	144.75	47.25			
<a href="#">EDUCATION4-3</a>	5.1.0.3440	21/04/2009	89.25	143.25	17.25			
<a href="#">CLIVEB</a>	5.1.0.3440	21/04/2009	70.64	121.50	50.50			
<a href="#">EDUCATION2-4</a>	5.1.0.3440	21/04/2009	80.33	109.25	26.75			

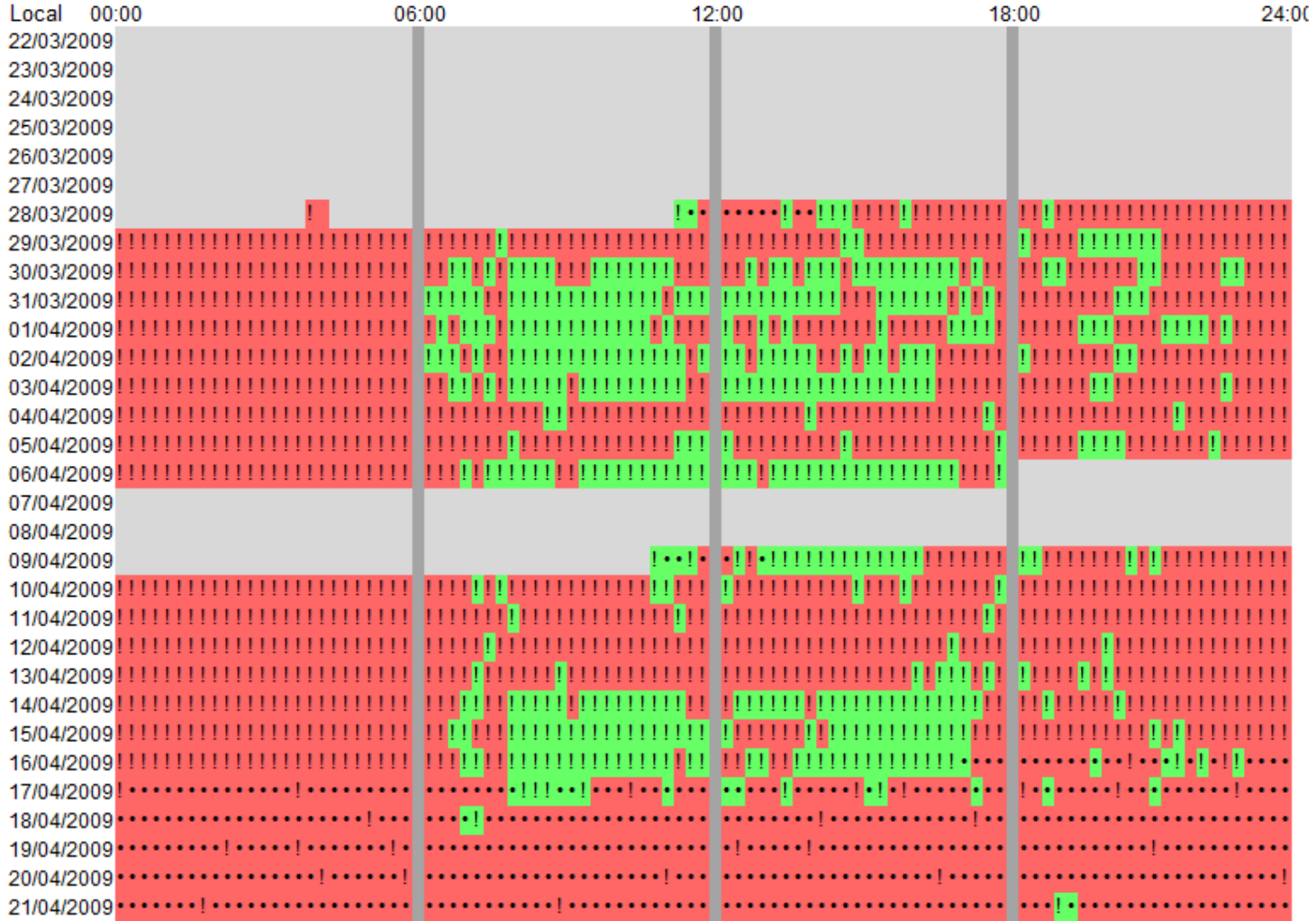
No power management

Key: 15 minutes Off/Suspended User Active Other Active Inactive User Logged On Forced Awake



\*Report in local time. Includes 0.0 hour(s) time bias.

Key: 15 minutes Off/Suspended User Active Other Active Inactive • User Logged On ! Forced Awake



\*Report in local time. Includes 0.0 hour(s) time bias.

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