

ecofax

**A White Paper to discuss the
impact of fax machines including
the UK Carbon Footprint**





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ECO-FAX

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1. UK Fax Machines

There are currently 1,990,000 fax machines in the UK¹. Fax machines are usually left on 24/7 to enable them to receive incoming faxes; the majority of this time is spent in standby. The average power consumption of these fax machines when in standby is 8.15W². For the purposes of this paper we have assumed an average electricity price of 10.785 pence per hour.

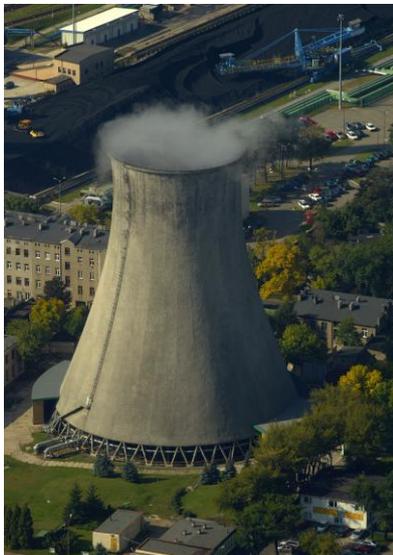
1.1 Standby Power Consumption

UK faxes on standby use over £15million of electricity per annum.

Hours per annum: 24 x 7 x 365	= 8,760 h
Kilowatt hours per machine per annum: 8,760 x 8.15/1000	= 71.394 kWh
Cost per machine per annum: 71.39 x 10.785/100	= £7.70
Total cost for 1,990,000 fax machines	= £15,323,000

1.2 CO2 Emissions

Fax machines on standby generate over 60,000 tonnes of CO2.



For electricity consumption it is in most cases impossible to identify with any certainty the source of generation that has been reduced or displaced when savings are made. For this reason the Climate Change Levy Negotiated Agreements and the ETS are using an average carbon intensity factor for the estimation of carbon dioxide emissions from the consumption of electricity. This has been fixed at 0.43 kgCO₂/kWh³.

CO₂ emissions per fax machine per annum: 71.394 x 0.43 = 30.7kg

Total for 1,990,000 fax machines = 61,093 tonnes

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1.3

Trees

UK fax usage consumes over 2 million trees per annum.

On average each fax machine receives 3,000 fax pages a day based on 15 faxes a day each of 2 to 3 pages. Each fax is copied at least once.

One tree produces on average, 16.67⁴ reams of paper (8,333 sheets). Each fax machine results in the use of 6,000 sheets (fax transmissions and copying). Therefore 1,432,857 trees are consumed in the UK by fax transmission and copying of faxes each year.

Faxes in the UK consume almost 5 thousand acres of trees per year.

Softwood trees are planted at a density of 303 trees per acre⁵ so current traditional fax usage is consuming 4,728 acres of trees.

The loss of trees contributes 19 thousand tonnes CO2 per annum.

An actively growing young tree absorbs 13.5kg of CO₂ per year which means that felling the trees required making sufficient paper for the operation of fax machines in the UK results in an additional 19,343 tonnes of CO₂ in the atmosphere.

1.4 Conclusion

Current usage of fax machines in the UK results in a net contribution of 80,436 tonnes of the principle greenhouse gas, CO₂: this is equivalent contribution of the following modes of transport;

512 million km of air flights (i.e. over 55,000 times London to Johannesburg or 3 months worth of flight, twice a day) by South African Airways

1.4 billion km of bus trips

2 billion km of train journeys

In addition over £15 Million worth of electricity is wasted by faxes on "standby".

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1.5 References

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5. <http://www.hybridpoplars.com/space.htm>
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2. Fax Machine Cost Calculations – 33p for every fax page received

Calculations Based on 3,000 Pages of Faxes per year

15 pages per 200 working days

Average number of pages per transmission 2 to 3

Item	Description	Unit	Annual	Monthly
Machine Cost	Basic Fax Machine (Samsung SF 360) purchase - 3yrs	£59.57	£19.86	£1.65
Line Rental	BT Quarterly	£41.15	£164.60	£13.72
Total Fixed Cost			£184.46	£15.37
Paper	PC World per ream (500 sheets)	£2.49	£14.94	£1.25
Toner	PrinterBase per cartridge (750 pages per cartridge)	£24.00	£96.00	£8.00
Power	Less than 1% usage, standby power consumption		£7.54	£0.63
Total consumables			£118.48	£9.87
Total direct cost			£302.94	
Direct cost per fax	(= £302.94 / 3,000)		£0.10	
Logistics	60 paper fills per year and 4 toner cartridges -2 hours	£9.00	£18.00	£1.50
Distribution of Faxes	Approx 600 (20%) of faxes, at 5 min/fax -50 hours	£9.00	£450.00	£37.50
Downtime	2 hours	£9.00	£18.00	£1.50
Archiving	Approx 1 500 (50%) of faxes are kept - per page	£0.10	£150.00	£12.50
Copying	At least one copy of each fax is made	£0.015	£45.00	£3.75
Total indirect cost			£681.00	£56.75
Grand Total			£983.94	
Total cost per fax	(=£983.94 / 3,000)		£0.33	

(NB: Costs exclude, wastage, lost faxes, fax reports, bad quality printing and transmission errors)

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3. FREE Fax2Email

3.1 Inbound Faxes

We require an email address for everyone that will use the Fax2Email to set up this service. We will then allocate each user with a FREE Fax2Email number and send a welcome fax to each user with their fax number and user instructions.

All incoming faxes will be received as an attachment to their email message as an industry standard JPEG files, or if preferred, on request as a PDF file

3.2 Outbound Faxes

Customer can opt to use our Outbound Fax service. All faxes will be charged at competitive rates for sending outbound faxes similar to current charges.

We will convert text files into fax format from industry standard file formats, e.g. email, Word, Excel etc.

4. Benefits

- The fax service is free to the inbound users FAX2E-MAIL
- All fax transmissions are encrypted for security
- 24 x 7 service – not affected by running out of paper and toner or paper jams
- Can receive thousands of faxes per hour
- Can receive fax anytime, anywhere as it is email based
- Fax received by addressee whether in the office, at home or travelling on business
- Faxes do not have to be printed and distributed
- Faxes not picked up or lost on fax machine
- Faxes cannot be read on unattended fax by those they are not addressed to
- Cost savings of 33 pence per received fax page
- Ease of distribution as received faxes are email based
- Can use rules of email system to prioritise faxes
- No bulky filing as message can be stored electronically and linked to various applications such as CRM or HR or Accounts systems.
- Environmentally friendly faxes as they significantly reduce CO2 emissions and reduce Carbon footprint

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5. About ECO FAX and Services

ECO FAX is a multiple channel business solution company, focused on all areas of telephony. We provide services through all major telephony networks, both GSM and Fixed Line operators in UK, India, China and Africa, and we are currently rolling out our services out across many other international locations. Being the co-originators of Fax2Email in South Africa's has made ECO FAX one of the leading Telkom (the primary Public Switch Provider) value added service provider representing 80% of their entire value added services as well as being the 4th largest operator in the market in our own right.

Together with our international partners, we provide modern business communications solutions designed to streamline the current methods of communication.

Fax2Email is a state of the art fax service offered in partnership with various business partners to the Corporate and SME market. The End User's experience of Fax2Email is one of a seamless operation with no software or hardware requirements that can include leased cost routing (LCR) fax facilities to national and international destinations.

As Corporate Governance rules and regulations become more stringent, with particular reference to acceptance of emails as official documentation, the demand for corporate and SME fax solutions is increasing. An electronic faxing solution is far more cost effective, less time consuming, and significantly more secure than traditional faxing methods. A user now has the ability to seamlessly communicate with both email and fax clients simultaneously, and through the desktop email platform using normal Internet email on SMTP, attached files are delivered to traditional fax machines and vice versa.

Our understanding of the Fax2Email product and the experience gained as Fax2Email has grown in South Africa and expanded into Europe and Asia, positions ECO FAX as the premier supplier of Fax2Email services and experts at implementation of the product at the Network level.

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ECO FAX has many prestigious customers both in the public and private sectors including Liberty Life, Nissan, BMW, MTN, South African Breweries and The South African Government, SASFIN, Societe Generale, IBM.



Further information can be obtained by visiting our web site – www.eco-fax.co.uk

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