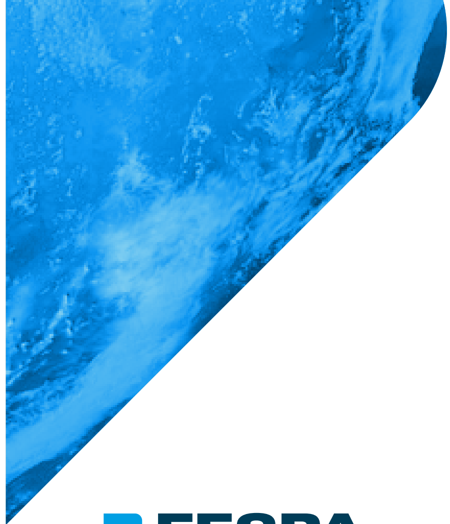
PLANET FRIENDLY GUIDE

FOR SCREEN AND DIGITAL PRINTERS



SUSTAINABILITY AND THE FUTURE
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FESPA
profit for purpose

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ABOUT THIS FESPA PLANET FRIENDLY SUMMARY GUIDE

This FESPA PLANET FRIENDLY SUMMARY GUIDE has been developed as part of a series.

The Guides aim to provide screen and digital printers with everything they need to know about printing sustainably.

The best available techniques, included in the Guides, give proven practical methods that can also generate financial savings. The Guides can assist printers who are planning to undertake any Environmental Management Certification.

The environment is a global topic that involves all the major industrialised nations. This has led to multi-international agreements such as the Kyoto and Montreal Protocols, the Durban Climate Change Conference, the Rio Earth and the Copenhagen Summits.

The European Union (EU) has been an early adopter of these agreements through various Directives and Regulations. The standards set by the EU in this field are often used as the benchmark by countries all over the world. However, there may be differences and the Guide user should always check with their local government bodies.

THE FESPA PLANET FRIENDLY SUMMARY GUIDES are based on these EU Directives and full details of references to this legislation can be found in the appropriate section of the Guide.

FESPA's Associations and their print company members can use and translate the Guides and the images used in them at no cost.

THE HISTORY OF THE GUIDE

The Guides are based on FESPA's Planet Friendly Guide which has been used as the print industry's reference on this subject since it was created by FESPA in January 2012. Under the expert guidance of Michel Caza and Paul Machin, the Planet Friendly Guide has been developed and regularly updated for use by screen and digital printers all over the world.

Michel Caza

Michel Caza is a multiple award-winning leading light in the global screenprinting industry, and one of the 'founding fathers' of FESPA in 1962 and has been a Board Member since 1990.

Paul Machin

Paul Machin is a chemist and lawyer Paul has spent 40 years dealing with European and international issues relating to the health, safety and environmental topics within the printing industry.

While every effort has been made to ensure that the information contained in the Guides is correct as at August 2014, readers are asked to note that FESPA makes no representation, expressed or implied.

TOMORROW'S SUSTAINABILITY CHALLENGES
FACED BY TODAY'S PRINTER

SUSTAINABILITY AND THE FUTURE

This guide aims to provide FESPA members with up-to-date information and advice on how to meet the environmental challenges of today.

The basic principle of sustainability described by the UN report on Sustainable development is to ***"meet present needs without compromising the ability of future generations to meet their needs."***

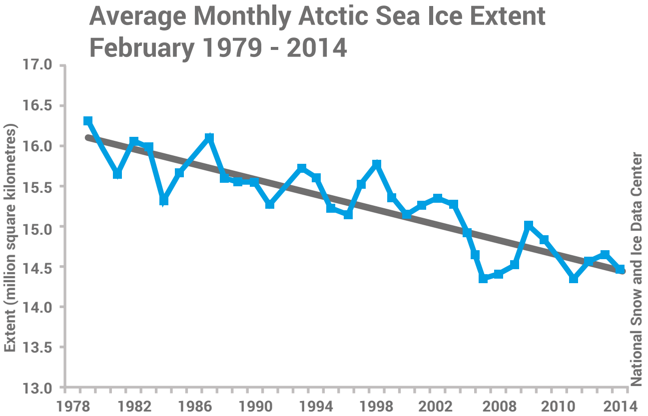
The world wide debate on ***"Climate Change"*** or ***"Global Warming"*** continues. Who is right is not important; it is the long term effect that is crucial for future generations. For those who need to determine its possible effect and thereby make vital decisions on marketing policies, data is provided from various knowledgeable sources.

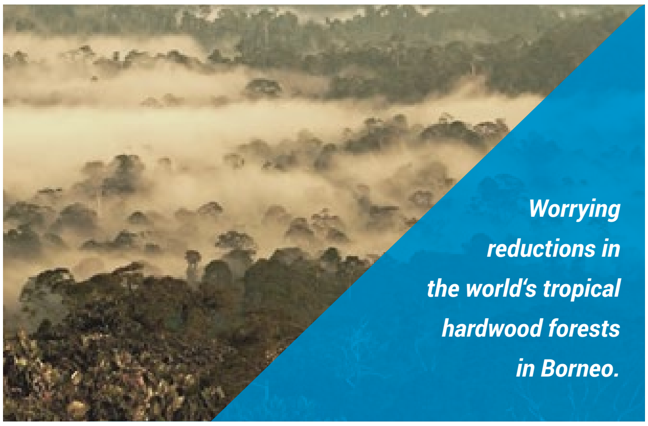
The National Snow and Ice Data Centre have reported a significant change in the Arctic Sea Ice Extent. This reduction means that sea levels will rise. Snow acts as a natural source of reflectivity of the sun's rays leading to increased warming. However there could be a reduction in the consumption of fossil fuels which are known to have an adverse effect on global warming. Further information can be obtained from the following website: **www.nsidc.org/arcticseaicenews/**.

As recent as the 1950s, the Earth's rainforest covered about 15 percent of the Earth's land surface. In fewer than fifty years, more than half of the world's tropical rainforests have fallen victim to fire and the chain saw, and the rate of destruction is still accelerating. Even now more than 200,000 acres of rainforest are burned every day. This means that 78 million acres are lost every year.

There are also worrying reductions in the world's tropical hardwood forest in Borneo as is demonstrated by the maps showing the loss of forest coverage in 1985 and 2010.

Similar reductions in tropical forests have occurred elsewhere in the world. For example, every year since 1970, 10,000 hectares of forests have been lost in Belize alone. The significance of this trend is important. Trees absorb carbon dioxide; which in excessive concentrations can kill all life forms. However through the process of photosynthesis trees convert this carbon dioxide back to oxygen which is a necessary element for life.



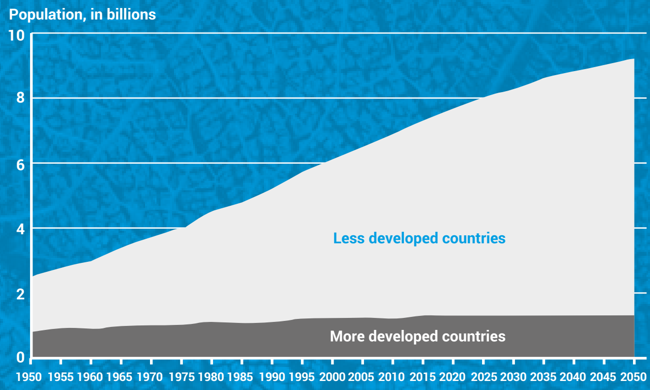


POPULATION GROWTH

Perhaps another factor of even greater significance is the predicted global population growth. Unless some way is found to obtain raw materials that are useful to man from another planet, there is a finite quantity that is available on this planet to satisfy the needs of this expanding population. At our current rate of consumption many raw materials will be exhausted unless there is a change of attitude.

Further information can be obtained from the World Bank publication on this topic that can be viewed from the following website address:
www.worldbank.org/depweb/beyond/beyondco/beg_03.pdf

Predicted World Population Growth



ENERGY AND OIL

Probably the most significant issue with respect to printers is the prediction relating to the supply of energy and chemicals. Very detailed information can be found in the BP Statistical Review of World Energy which provides a high-quality objective and globally consistent data on world energy markets and this includes oil production. A new edition is published every year in June.

The 2013 review **www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf** showed a +1.8% growth in global primary energy consumption; 50.2% was China's share of global coal consumption; there was an 89% decline in Japanese nuclear output but only a 4.7% share of global power generation met by renewables.
Why is this information relating to oil important? It is because oil is the main constituent of virtually all the products of the chemical industry. There is some potential gain to be achieved through shale gas which has proved very successful in the USA but currently has met with serious local objections in some other countries.

THE WORLD'S RESPONSE

There have been a number of worldwide conventions but possibly the most significant was the **1997 Kyoto Protocol**. The protocol required a 5% reduction in greenhouse gases by 2012. This was to be achieved by the Emissions Trading System known as the carbon market; encouraging the development of clean technology such as solar power and the joint implementation of carbon reduction in the developing countries by foreign investment and technology transfer. The major disadvantage of the Kyoto Protocol was that the USA and China did not sign up to the protocol. Unfortunately these two countries are amongst the largest polluters but claimed it would have a serious adverse effect on their economies.

What has been the world's latest political response? The result of the **Durban Climate Change Conference** in late 2011 was hailed as a success. A Green Climate Change Fund was set up for developing countries. Up to now the developing countries did not have the financial capability to undertake green initiatives. A review of the use of land is to be undertaken. It will focus on forestry in an attempt to control the effects of de-forestation. This programme has already started in the Amazon rain forest. Perhaps the most significant move was that countries like America and China will be adopting the **Kyoto Protocol**.

THE EFFECTS ON THE PRINTING INDUSTRY

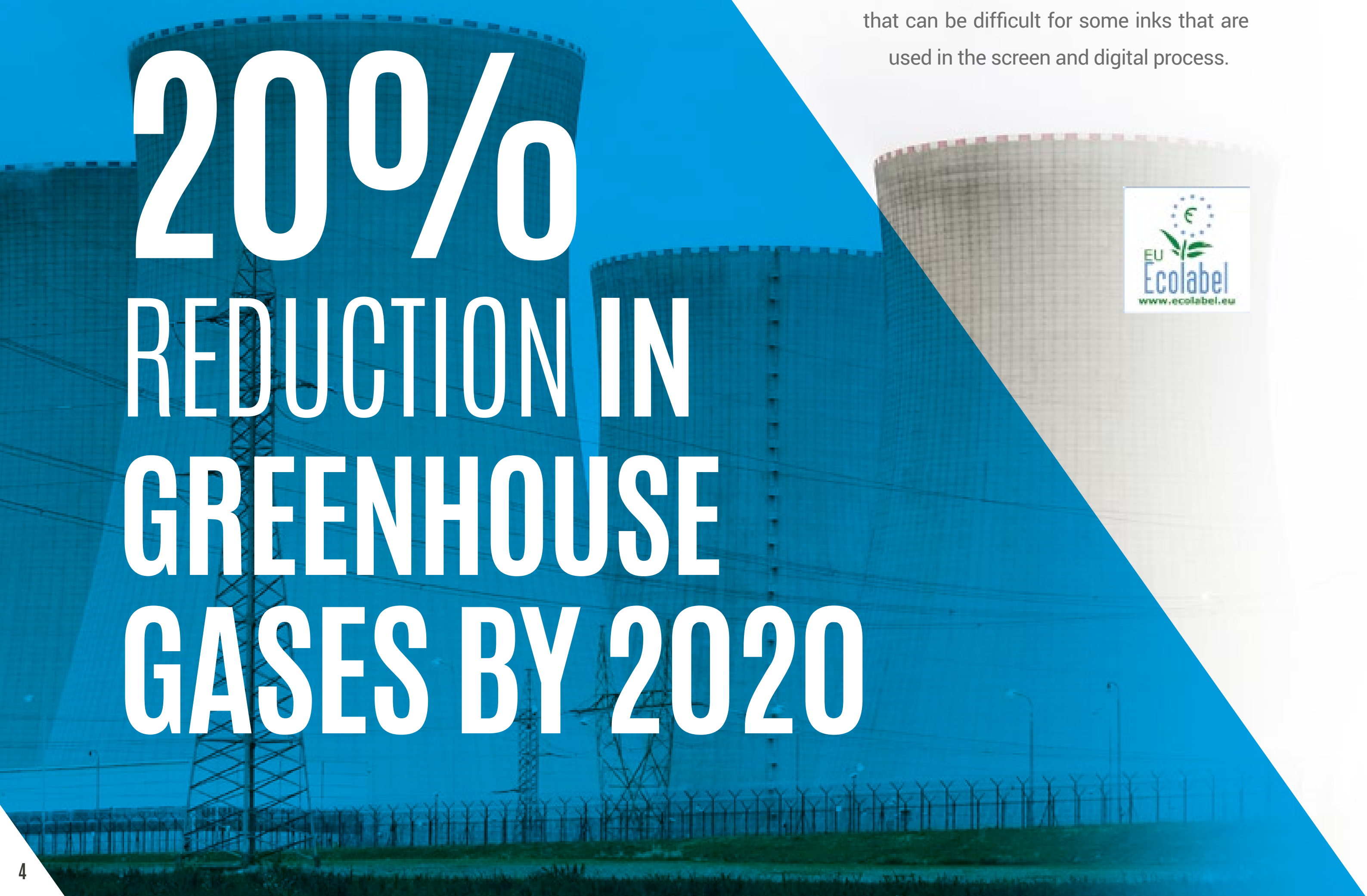
Many large printing companies had controls placed on their solvent emissions. In some countries these controls have affected screen printers. **A strict code has been developed to control hazardous waste.** All waste ink, containers, wipes, solvents and packaging have been subject to severe restrictions. The cost of disposal of hazardous waste has increased considerably. Other green initiatives have involved printing equipment, especially its disposal and the use of hazardous chemicals such as cadmium, lead and nickel in the manufacture of this equipment. Most phthalates that were used in the manufacture of plastisol inks for T-shirts have been banned, as they have been judged to be endocrine disruptors. The discharge to waste water of silver from the pre-press function has been banned or severely restricted. The number of biocides that are permitted in water based inks and other aqueous products have been severely curtailed especially if there are claims as to the preservative effects for those products.

WHAT HAS BEEN THE EUROPEAN RESPONSE?

Following the **Copenhagen Summit** in 2009, the European Union agreed to a **20% reduction in greenhouse gases by 2020**. This would be achieved by several measures. The introduction of the Industrial Emissions Directive **(IED)** will be the main statutory control mechanism. Flat bed screen and digital printers will not be subject to the controls covered by this Directive.

Some printers will now be subject to a wider set of controls including discharges to water and land. The Best Available Technology Reference Documents known as **BREFs** relating to the **IED** will not be mandatory for flat bed screen and digital printers. However, since the **BREF** techniques have a very positive effect upon the environmental impact of the printing process those applicable to screen and digital printing have been included in this guide.

The Energy Efficiency Directive is currently directed at public building design but will no doubt be extended in the future especially with the use of ***"smart meters."*** The concept of a Corporate Environmental Footprint is still in its infancy. The Environmental Footprint of Products is more advanced. There are many products that have now been included and amongst these are printed products which will exhibit the Ecolabel sign. It is the intention that future purchases of print by public bodies will be governed by the requirement of having an Ecolabel. The qualification for the use of the label relies on a number of criteria that includes de-inkability that can be difficult for some inks that are used in the screen and digital process.



20% REDUCTION **IN GREENHOUSE GASES BY 2020**

WHAT OTHER DRIVERS WILL AFFECT THE PRINTER?

There are a number of perceptions that characterise the general public's opinion that can have an impact upon the printer. There has been high profile lobbying against the use of chemicals, due to their possible impact on mankind and the environment. As the print industry has traditionally used chemicals, the industry is associated with this negative perception.

In the European Union, a new Regulation has been brought in placing restrictions on chemicals, known as **REACH. REACH** stands for the Registration, Evaluation, Authorisation and restriction of Chemicals **(REACH)** Regulation that has affected many industries including printing. The cost of meeting the stringent requirements of **REACH** have been considerable. These costs will percolate down the supply chain. Many specialised chemicals that were used in the printing industry are being withdrawn because of the cost implications.

With the rise in the industrial and commercial power of some of the Far East countries many commodities will either become scarcer and/or more expensive. This will in turn lead to the consumables used by printers being withdrawn or uneconomic to purchase. Also countries such as China, Korea and the Philippines are adopting a **REACH** style mechanism.

HOW CAN PRINTERS MEET THESE CHALLENGES?

THE PRINTER CAN SUCCEED BY:

- **Accepting the challenges of sustainability;**
- **Acknowledging the trend of customers requiring recognised environmental credentials from their suppliers;**
- **Recognising that improvements in the company's environmental performance will enhance profitability;**
- **Using the Planet Friendly Printing Guide to ascertain which Best Available Technique (BAT) is likely to produce the quickest profit for the company;**
- **Setting out a priority list of BATs taking into consideration the available management and staff resource as well as the customer's known technical and environmental requirements;**
- **Informing and encouraging staff to participate in the selected projects;**
- **Implementing these projects at the earliest opportunity to demonstrate the commencement of a sustainable approach towards the environment.**
- **Ensuring customers are aware of the company's approach to environmental issues particularly where these are externally monitored (most will recognise the benefit of trading with environmentally aware suppliers).**

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ABOUT FESPA

FESPA is a global federation of 37 national associations for the screen printing, digital printing and textile printing community. Founded in 1962, FESPA organises the leading exhibitions and conferences for this community and reinvests profits from these activities into the global print community.

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