

# The impact of European Directives on product development

Paul Wenden – Engineering Director

Fläkt Woods Limited



# THE IMPACT OF EUROPEAN DIRECTIVES ON PRODUCT DEVELOPMENT

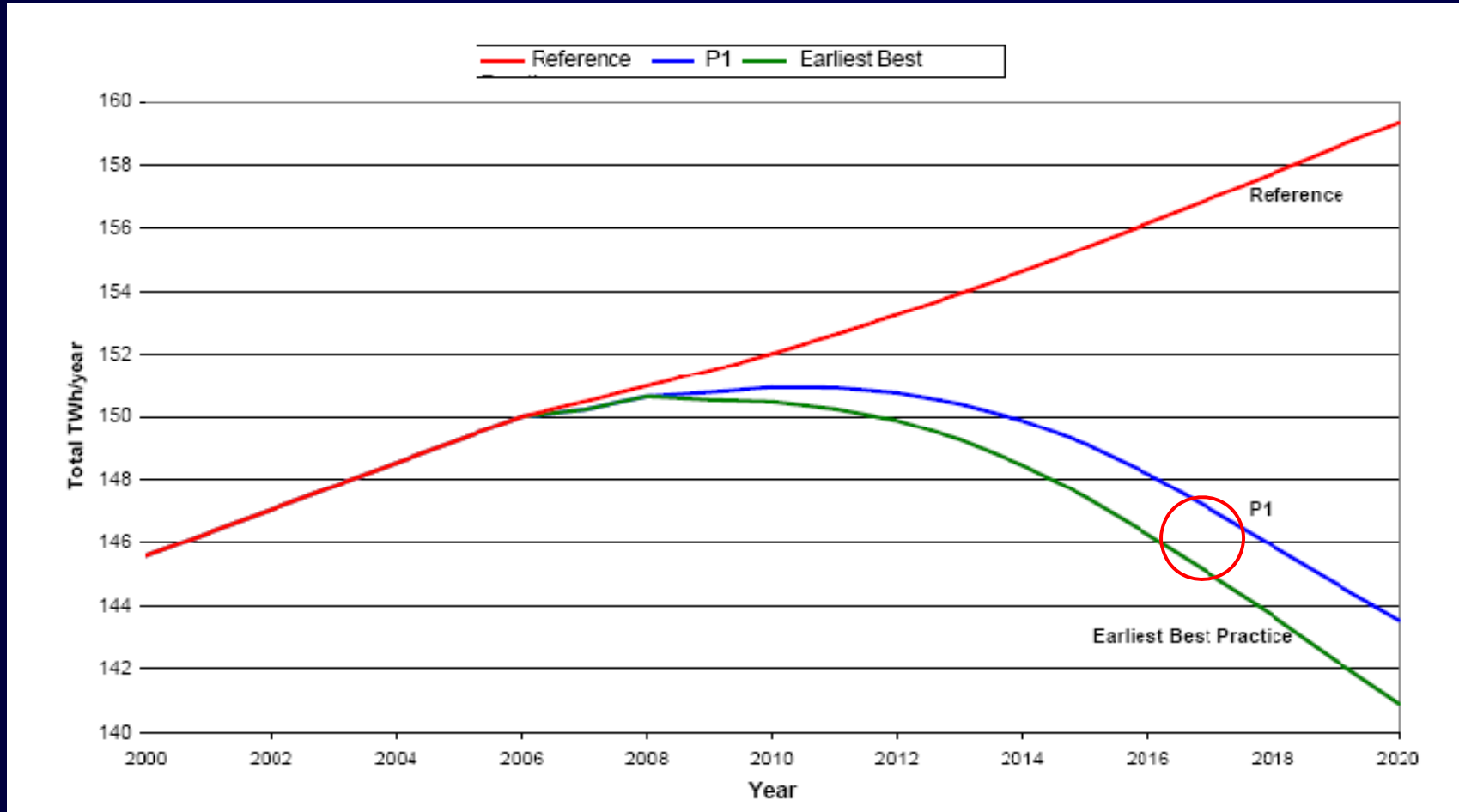
## BACKGROUND

- Product manufacturers are expected to deliver increasingly energy efficient products that support the environmental and political aims of the UK and Europe.
- The competitive advantage of such developments will help sustain not only the industry, but also the businesses that are most innovative.
- The nature of innovation in our industry is that legislation is the most effective mechanism for adoption – but this has to be well formed, not reactive.
- Our challenge is to maintain such developments on as wide a playing field as possible so we can have standardised solutions that meet most criteria required.
  - The UK must not set itself apart.
  - Standardised product solutions will minimise cost premiums.



# DEFRA STATEMENTS - ENERGY USAGE

## Total in-use energy consumption of installed UK motor driven systems



The P1 projection sets a target level of ambition that the Government is proposing could be delivered at a reasonable cost, taking into account such things as current UK and global performance benchmarks, economies of scale and the capacity of the supply chain to take coherent action to deliver more energy efficient products.

## DEFRA STATEMENTS – ENERGY USAGE

- If we are to be on track to deliver this target, we would expect to see substantial shifts in the market, for example:
- 2010: The minimum efficiency of new induction motors meets the levels that are currently defined as 'high efficiency', (e.g. equivalent to the 'EFF1' label).
- 2010: Indicative standards for certain fan and pump products are developed and introduced.
- 2010: Minimum energy performance levels of ventilation systems in buildings (Specific Fan Power) are set at levels consistent with current best practice.
- 2010: Minimum efficiency levels for new pumping systems and fan systems in other industrial or process applications, such as the water industry or the chemicals industry, attain levels consistent with current best practice performance.
- 2015: The minimum efficiency of induction motors is improved by one level.



## EUROPEAN LEGISLATION

### BACKGROUND

The European Union (EU) summit on 11/12 Dec 08 confirmed the following priorities for the European Commission (EC) :

1. Growth and jobs.
2. Climate change and sustainable Europe.

In June 2009, there will be elections for the European Parliament (MEPs) and the selection of new Commissioners. As part of this process, a new Commissioner will be appointed with a Climate Change portfolio. It is thought that the directorate which deals currently with energy and transport will be split into its 2 separate parts, with the appointment of a specific Director General Energy.



## EUROPEAN LEGISLATION

### 20-20-20 TARGET

There is a broad target to cut greenhouse gas emissions by 20% by 2020, by which time 20% of energy use will be provided by renewable sources.

*These are politically painful objectives, especially during an economic downturn.*

### ACTION PLANS

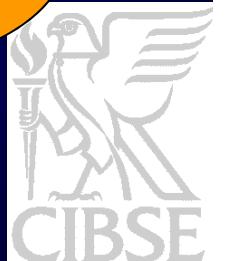
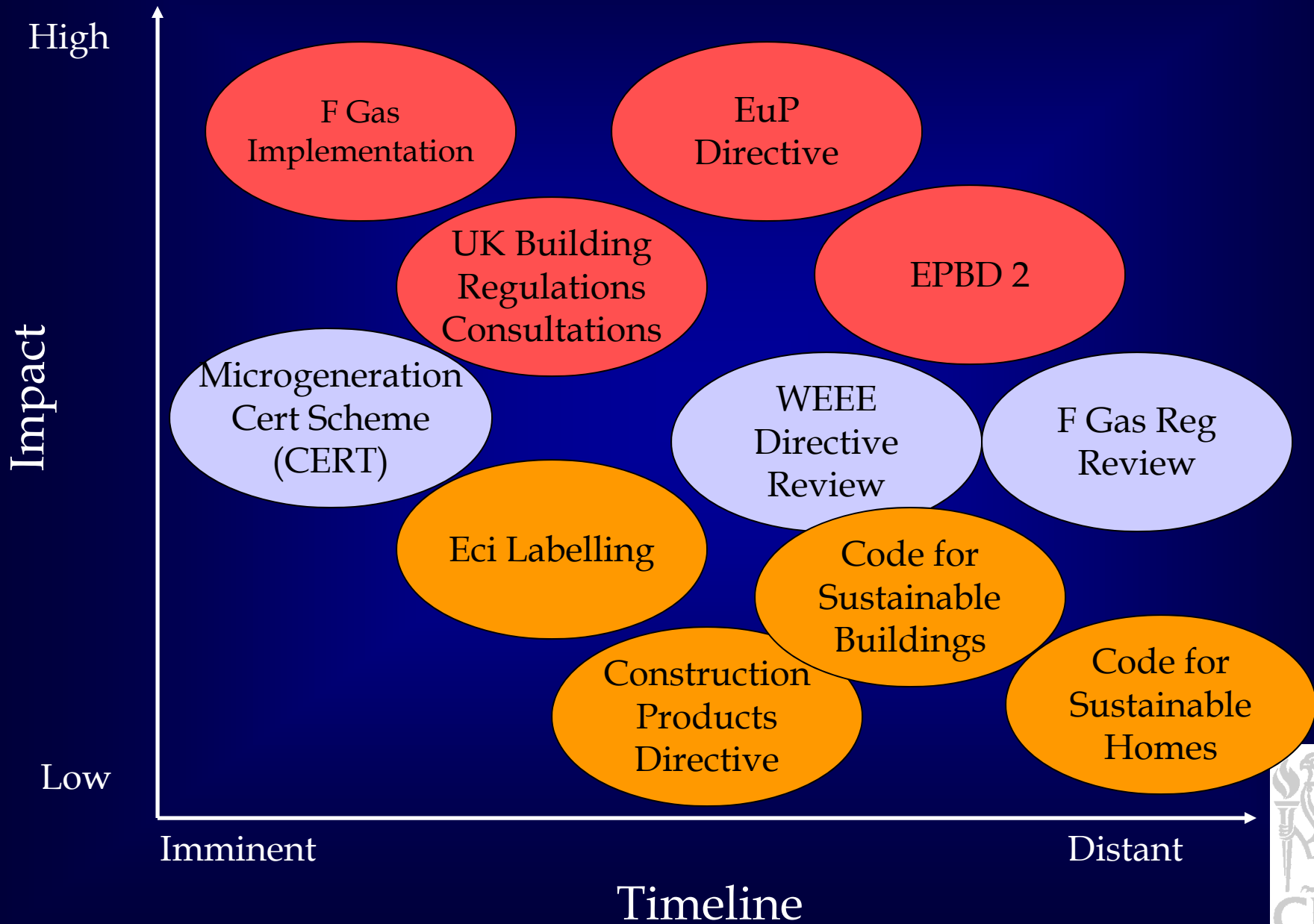
Both the environment and energy directorates have developed plans to move towards the above targets, including the European Energy Security and Solidarity Action Plan (the Second Strategic Energy Review). Energy efficiency is central to our sector interest in this policy document.

### LEGISLATION

A range of directives and regulations emanate from the Commission communication on energy efficiency and the key ones are shown in the following table.



# Legislative Map Impacting HVAC Product Manufacturers



LEGISLATION	TIME-LINE	COMMENT
Eco Design of Energy Using Products (EuP)	Phase 1 – underway Phase 2 – starts 2009	This is a directive with potentially huge scope. AMCA is aware of its effect on the fan industry resulting in the ongoing development of an ISO standard on fan performance. The next phase of product groups will cover : air conditioning and ventilation systems; refrigeration equipment, and heat pumps in heating mode, amongst others.
Energy Performance of Buildings Directive (EPBD)	Current Revision proposed	The initial directive spawned almost 30 new CEN standards, swamping the standards body, and still causing confusion in the sector. The Commission proposed a revision that extended its scope to all buildings and includes mechanical ventilation in the inspection/assessment regime.



LEGISLATION	TIME-LINE	COMMENT
Energy Labelling Directive	Current Revision proposed	Covers domestic appliances at the moment. There are proposals to extend scope to cover all energy using products and change format of labelling. There is resistance from member states.
Eco Labelling	Current Extension proposed	The Eco Label is a voluntary scheme aimed at promoting energy efficient domestic appliances. There are proposals to link the Eco Label to EuP criteria and even develop an Eco Label for buildings.
Construction Products Regulation	Current	Previously a directive (allowing member states to interpret the requirement), now a regulation which has to be applied equally across Europe. Will affect items fixed into the structure of a building, such as fire dampers.
Waste Electrical and Electronic Equipment Directive (WEEE)	Current Review underway	Professionally installed HVACR equipment lies outside the scope of this legislation. Leaked EC documents suggest that manufacturers may be asked to pay the full cost of recovering EEE waste, with fewer exemptions allowed.



# THE IMPACT OF EUROPEAN DIRECTIVES ON PRODUCT DEVELOPMENT

## The EuP – Energy Using Products Directive (Directive 2005/32/EC)

- The EuP Directive is designed to reduce the energy consumption and environmental impact of energy-using products.
- With the first phase of implementation under way, it is already having a profound impact, not least because the breadth of its scope, way beyond anything that preceded it.
- In essence, it formally introduces “ecodesign” to the world of heating, ventilation, air conditioning and refrigeration.
- In theory, the EuP Directive itself has no effect, as it is a ‘Framework’ Directive intended to set the stage for each of the EU members’ various implementing measures. Although such measures will vary between countries, their end requirements will be identical.



# THE IMPACT OF EUROPEAN DIRECTIVES ON PRODUCT DEVELOPMENT

## The EuP – Energy Using Products Directive (Directive 2005/32/EC)

- The EuP Directive does not apply only to products designed or manufactured here, but to anything offered for sale, whatever its origins. In simple terms, whoever is first to place a product on the market within the EU is responsible for ensuring and certifying its compliance.
- Where does this leave suppliers? It all begins with ecodesign, as the Directive makes clear: “consider the life cycle of the EuP and all its significant environmental aspects, *inter alia*, energy efficiency.” Note that energy efficiency is to be considered *among other things*.
- The Directive then identifies six life cycle phases to be taken into account at the product design stage, from raw material selection and use through to end-of-life, defined as “the state of an EuP having reached the end of its first use until its final disposal.” It is not enough to design a product which is energy-efficient in use. Every stage of the product’s life, from picking raw materials through to its recycling or disposal, has to have its environmental impact minimised.



## PRODUCT DEVELOPMENT - STANDARDS

- The various HVACR industry product suppliers have harmonised (ISO) standards against which most products are measured and catalogue performances derived.
- Relatively easy to manage and police as there are accreditation schemes that exist
  - Eurovent Cecomaf and AMCA already well established
- For products within the Lots of EuP, many of these standards are being revised to ensure we have the tools to enable the bar be set higher in terms of efficiency –
  - ISO CD 12759 – Fans – Efficiency Classification
  - IEC 600034-30 – Efficiency Classification of cage-induction motors
- Manufacturers are a driving force behind the development of such standards, and work on a global basis when required
  - BSI (UK) – CEN (EU) – ISO (global)
- **But – are we looking through the wrong end of the telescope?**



## PRODUCT DEVELOPMENT - INSTALLATION

- The performance standards that apply to products and components play their part, but obviously the greatest gains can be made in “best” system design and product selection.
- At Fläkt Woods we often perform factory acceptance tests on HVACR equipment.
  - Typically we demonstrate aerodynamic performance and relevant efficiency data – with increasingly no negative tolerance allowed (designer policy).
  - Generally this corresponds to the maximum design point.
  - The customer (designer) typically requests we then demonstrate the +15% contingency in case the site installation isn't quite as expected!
  - **How much is over engineering contributing to our carbon footprint?**



## THE FUTURE



- As a representative of manufacturers, the EuP is perhaps the strongest chance we have to contribute to energy efficiency improvements.
- To be effective, we need universal engagement across Europe – and as an industry we should not allow exclusions or dilution.
- Local legislation should enforce compliance – and the Building Regulations can integrate the relevant aspects of EuP.
- Even though the burgeoning amount of initiatives is deflecting business attention at this crucial time – Fläkt Woods and the HEVAC Association will continue to support the implementation and development of the EuP – and regardless of shortcomings recognise it as the mechanism to drive real advantages for the environment.



# The impact of European Directives on product development

Paul Wenden – Engineering Director  
Fläkt Woods Limited

