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BRIEFING

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More Efficient, More Competitive

The cost of energy is central to the debate on EU climate and energy legislation from 2020 to 2030, and is closely linked to another important issue: energy efficiency.

The case for a positive, progressive and socially beneficial approach to energy efficiency can be summarised in 4 core statements:

1. Energy costs matter more than energy prices;
2. Energy efficiency reduces energy costs;
3. EU industry could be more efficient;
4. Legislation can unlock further savings;

1. COSTS MATTER MORE THAN PRICES

Energy prices matter – but they do not matter as much as energy costs. In attacking energy prices, some lobbyists are simply focusing on what they think can influence. They put support for renewable energy in their sights, and pull the trigger – but they are aiming at the wrong target. Support for renewables is a small part of EU energy prices, and many analyses show that it is over-simplistic to ascribe energy price rises to the adoption of progressive climate and energy legislation alone.

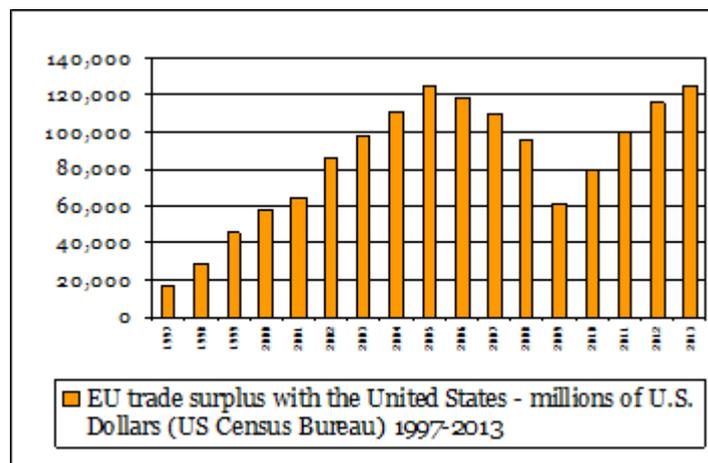
While no one likes paying higher energy prices, energy prices are not considered to be a key driver for competitiveness. For example, the Global Competitiveness Report of the World Economic Forumⁱ does not include energy prices among the key drivers of competitiveness. Deloitte’s annual Global Manufacturing Competitiveness Index, based on 550 survey responses from senior manufacturing executives around the world, gives further evidence. These executives consider energy prices to have less impact on competitiveness than an innovative and skilled workforce, the structure of economic, trade, financial and tax systems, or the cost and availability of labour and materials.

Indeed, because the EU excels in many of these areas, Europe’s energy intensive industries, those most affected by energy prices, will likely dominate the global markets for years to come. The EU’s share of the global export market for energy intensive goods is forecast to be 26% in 2035ⁱⁱ, compared to 11% for the US, and 10% for China. Though this is a drop in the EU’s *share* compared to today, the *total absolute volume* of traded European energy intensive products is expected to increase in absolute terms, as global volumes increase overall.

Energy costs vs. energy prices

Too often ‘energy costs’ and ‘energy prices’ are used as synonyms, but they are not. Energy prices are the price per unit of energy. Energy costs are the unit price multiplied by the number of units consumed – i.e. the total actual amount spent buying energy, a more important number.

The EU-US trade balance is evidence that energy prices are not critical to international competitiveness. The EU has maintained a longstanding trade surplus with the US even while the latter has had notably lower energy prices

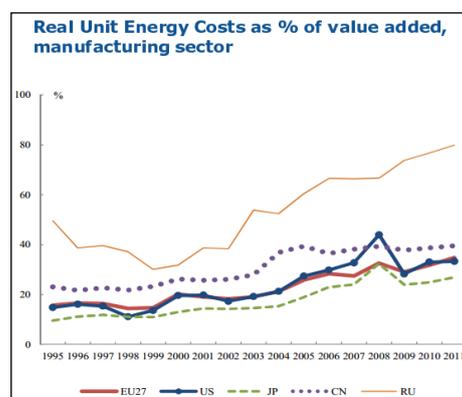
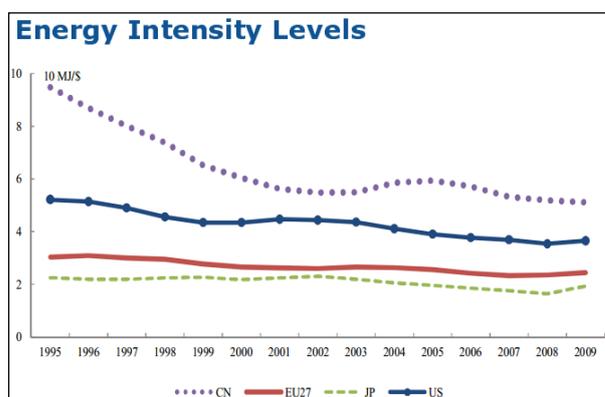


2. EFFICIENCY REDUCES ENERGY COSTS

European manufacturing industry, together with its Japanese counterparts, has one of the lowest energy intensities of global trading regionsⁱⁱⁱ. This is the combined result of a restructuring of the economy towards more complex, high value-added manufacturing and of the consistent development of more efficient production processes. Together, these evolutions in EU manufacturing have generated a systematic reduction of energy use that has kept energy costs in check even as prices rise.

According to the IEA World Energy Outlook 2013, “improvements in energy efficiency are the most cost-effective way to deal with energy prices disparities”^{iv}. If EU Member States are serious about improving their industry’s ability to compete globally, they should adopt, implement, and enforce ambitious energy efficiency policies.

Industrial energy price differentials between the EU and other major economies (e.g. the US, China) are assumed by some to result in a major loss of competitiveness for European industry. In practice, this has not happened. Instead, the energy price gap has been offset by improvements in energy efficiency, according to several analyses carried out by, and for, the European Commission.^v To use the Commission’s own words “the remarkable wide energy price gap between the EU and US should be considered next to the equally remarkable energy intensity gap between the two regions.”^{vi}



As a proportion of added value in the manufacturing sector, the cost of energy in the EU is equal to energy costs in the US – despite price differences.

Energy efficiency is the hero of Europe’s industrial competitiveness – consistently cutting costs. Other countries have realised this and are already chasing the EU down the same path - making significant progress as they do so. Between 2005 and 2012 China decreased its industrial energy intensity by a quarter^{vii}. If the EU wants to stay ahead, and maintain its comparative advantage, it must shift its focus from energy prices to energy costs, including the effect of efficiency improvements.

Energy Efficiency also reduces energy prices

Energy efficiency reduces the energy demand and therefore can have an impact on fossil fuel prices, which are very sensitive to demand fluctuation. The electricity price will particularly benefit because energy savings will displace the more expensive energy producers first – such as those that operate to meet peak demand. Finally, energy efficiency will reduce the costs for expanding energy infrastructure, which are generally passed on to end-users.

3. INDUSTRY COULD BE MORE EFFICIENT

A leading record of improving industrial energy intensity should not lead to complacency in Europe, as significant energy savings can still be realised, even in the industrial sector.

The energy savings potential in industry varies according to sectors, with important differences across them. Energy intensive industries are on average more efficient than other industries as they tend to adopt strong energy efficiency measures to reduce the cost of energy. However, also in the case of intensive industries, the IEA points out that in OECD countries, there are still energy savings potentials to be tapped by replacing older facilities, optimising processes and operations or strengthening energy management practices.^{viii} In some cases, the scale of action needed is even more important. As an example, the European cement industry is far behind their Indian or Chinese counterparts in terms of efficiency of energy use.^{ix}

According to a study by Fraunhofer, industry can still cost-effectively reduce its energy use by 26% by 2030^x. Short-term energy savings can be achieved in the industrial sector through optimisation of electric motor-driven systems and energy-efficient steam and hot water generation^{xi}. This effort by industry would make an important contribution to meeting WWF's proposed 2030 target for the EU to reduce primary energy use by 40% compared to 2005.

Another area with significant potential for improvement is industrial insulation. For example, insulating the surfaces of production units (furnaces, boilers, tanks, pipes etc.) could cut industrial energy consumption by a further 5%^{xii}, thereby significantly reducing energy costs and increasing competitiveness. By insulating equipment and repairing damaged insulation, cost-effective savings with payback periods of less than one year can typically be achieved.

4. LEGISLATION UNLOCKS SAVINGS

Energy efficiency has the merit of achieving multiple benefits at the same time. It improves the competitiveness of businesses and reduces energy bills for homeowners, while delivering benefits for the society as a whole, such as improving energy security and reducing the risk of dangerous climate change.

Despite the power of energy savings, many cost-effective measures do not happen, at least in part because they are not covered by any legal requirement. The non-financial barriers to energy efficiency uptake are well understood, as is the need for regulatory measures to overcome them^{xiii}.

Within the discussion on the climate and energy framework for 2030^{xiv}, an EU energy savings binding target effort shared at national level should be set as a complement to specific energy efficiency measures. This will be a first necessary step to fully realising all of the economic and competitiveness opportunities that energy efficiency can deliver by providing a predictable legislative framework to businesses and investors.

Specific measures in the Energy Efficiency Directive could be strengthened to grasp energy savings potential. It should become mandatory to implement improvements recommended by energy audits. Without such an obligation, the value of these audits will remain theoretical – failing to deliver the practical benefit of recommendations with even a short pay-back period. Energy audits should also be extended to cover SMEs, so that smaller European businesses can find the best solutions to rising energy prices. Financial support could be provided to SMEs for carrying out energy audits, with additional support if some of the recommendations are implemented.

EU law is already phasing out the most energy hungry products in industry. These include inefficient fans, electric motors and transformers, which combined are estimated to deliver around 67 Mtoe^{xv} primary energy savings annually by 2020. However, to make sure that those savings (and the associated cut in energy costs) are effectively achieved, the expected revision of the Ecodesign directive should substantially strengthen the market surveillance mechanism, including through coordination between national market surveillance authorities, and the harmonisation of sanctions.

CONCLUSION

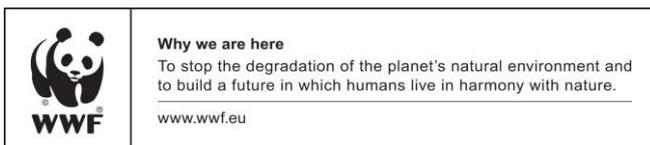
Four truths sum up energy efficiency's contribution to making European industry more competitive:

1. Energy costs matter more than energy prices;
2. Energy efficiency reduces energy costs;
3. EU industry could be more efficient;
4. Legislation can unlock further savings;

Pursuing further efficiency gains will not hinder manufacturing in the EU – it will give it a much needed boost. Many measures, including some which pay for themselves in less than a year, would help reduce both input and process costs – making European products even more competitive.

By focusing on its comparative advantages in the highly efficient production of complex, innovative products, Europe can continue to lead the world – even in energy intensive sectors. Reducing the drive to do this, by putting a mis-placed focus on energy prices, would be a backwards step that Europe's economy, its society, nor its environment can afford.

- i World Economic Forum, Global Competitiveness Report 2013-2014, <http://reports.weforum.org/the-global-competitiveness-report-2013-2014/>
- ii IEA World Energy Outlook 2013, slide presentation to press – <http://www.worldenergyoutlook.org/media/weowsite/2013/LondonNovember12.pdf>
- iii European Commission, DG ECFIN, Energy Economic Developments in Europe, January 2014
- iv IEA World Energy Outlook 2013 , page 297.
- v European Commission, DG ECFIN, Energy Economic Developments in Europe, January 2014
- vi European Commission, DG ECFIN, Energy Economic Developments in Europe, January 2014, Page 36
- vii IEA, World Energy Outlook 2013, page 240.
- viii IEA, World Energy Outlook 2012, page 338.
- ix Climate Strategies, Staying with the leaders Europe's path to a successful low-carbon economy, page 6
- x Fraunhofer, Policy Report, Contribution of Energy Efficiency Measures to Climate Protection within the European Union until 2050.
- xi Fraunhofer, Policy Report, Contribution of Energy Efficiency Measures to Climate Protection within the European Union until 2050.
- xii ECOFYS, Climate protection with rapid payback Energy and CO₂ savings potential of industrial insulation in EU27, available at <http://www.eiif.org/?Studies/14>, page 31.
- xiii IEA, World Energy Outlook 2012, page 280-282.
- xiv WWF's position on 2030 EU climate and energy policy, http://www.wwf.eu/what_we_do/climate/publications_climate/?209335/WWF-position-on-2030-EU-Climate-and-Energy-policy, July 2013
- xv According to published EU product regulations and the European Environmental Citizens Organization for Standardisation (ECOS) 's own calculations.



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