

Open letter to: European Commission DG Energy

Dominique Ristori, Mechthild Wörsdörfer and Paul Hodson

The outphasing of the halogen lamp in 2018 a pitfall

The year 2018 starts in an age where IT permeates our lives more and more intensively. It poses new questions of a technical, social and ethical nature to everyone. You lead all processes in Europe related to energy efficiency. This letter focuses on your statutory intention to promote the energy efficiency of light as of 1 September by prohibiting the production and import of the majority of halogen bulbs. This process has been in preparation since 2009 and had to pave the way for the important more efficient LED lighting. Statutory measures preceding technological developments are new to our society. They are based on the expectation that all stakeholders of the process benefit from the measure if careful communication with all stakeholders and an acceptable timeframe are used. The vigour and the efforts of all stakeholders related to the idea that energy consumption must be reduced is admirable and deserves fundamental appraisal. Nasty rumours argue that this progress is supported by an industrial lobby, but even if this is the case, it does not detract from the good intentions of many stakeholders, of whom I believe you are one, without any evidence to the contrary. I write you this open letter with this positive attitude. Because your position requires a generic outlook and approach to assessments, I will only focus on some broad themes of the process and the ethical questions posed by modern technology.

Process

With respect to the technological development of LED lamps, it is not easy to meet the basic requirement of being equivalent to the (halogen) incandescent lamp. Since 2009, the process of the lighting technology has successively been struggling with:

- inadequate drivers,
- the share of blue light in the spectrum,
- flashing/radio frequency interference problems.

These issues have only been partially resolved.

Legislators were required to:

- draw up additional regulations for innovative new technologies,
- conclude agreements internationally outside of Europe,
- extend the timetable of the outphasing of the halogen lamps with two years.

They also face difficult and complex legislation for the outphasing of less efficient lighting fixtures. After two years, this progress has in November 2017 reached a second conceptual phase for a scheduled outphasing as of 1 September 2020.

This ambitious energy legislation assumes that all efforts will result in 20 TWh/year in savings in 2030 compared to 2015.

Because of the developments in the last hundred years, the issue of light technology has been discussed internationally in professional associations and knowledge institutes. The corresponding process issues that now take place at a political level were solved with guidelines that sometimes partially culminated in standards. However, standards were never developed ahead of the technology and guidelines. Legislators face two major issues due to the reversed process order of legislation ahead of the actual development of the technology:

- Technology is developed by “trial and error” and cannot demand an absolute recognition from the starting point. In art, something perfect and new can arise from seemingly nothing. The Greek tragedies, Bach, and Picasso suddenly arose as pure creations. But the first plane could barely fly! It is to this day a means of transport that demands more and more security measures.
- Modern technology has its roots in technological paradigms that are antithetical to ethical paradigms.

technological paradigms	ethical paradigms
Ratio	Emotion
Matter	Physicality
Computing power	Empathy
Uniform algorithms	Ambiguous cases
Speed	Caution

Ratio and emotion; matter and physicality; computing power and empathy; uniform algorithms and ambiguous cases; speed and caution are diametrically opposed¹.

Thanks to its energy efficiency and service life, the LED opens the door to completely new applications such as:

- illumination of buildings
- city beautification
- IoT applications
- light controls with continuous idle power, even if no light is used.

These are at odds with the political goals of energy saving using LEDs. Ethical and moral technology is not by definition impossible but demands a framework which must be drawn up in a new manner.

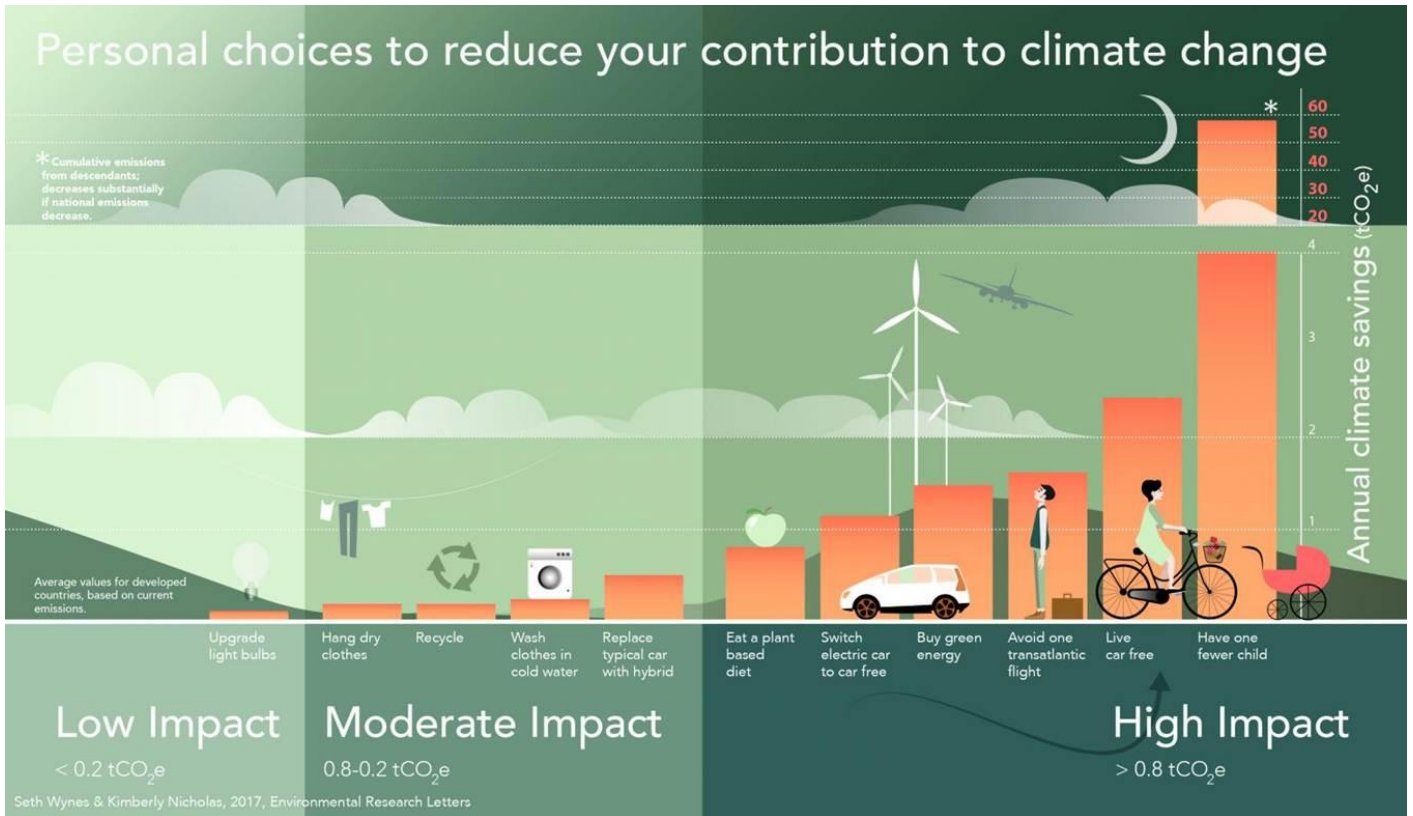
Besides these two fundamental issues, there are the secondary problems of the aforementioned nasty rumours. They point to a ruthless self-enriching pursuit of a beckoning market of artificial light of 20 billion Euro in 2020. A pursuit that leaves

nothing to the darkness of the earth and which likes to make use of eclipses of human ethical consciousness.

Eclipses

The antagonism of technology and ethics in the process are eclipsed by an overriding promise of energy savings. We continue with the above paradigms:

- The 'ratio' paradigm uses a calculation of a four to five times more effective light output of the LED light source. The heat of the (halogen) light bulb is quantified as a loss. However, this is no loss in cold conditions, but actually a slight reduction in heating costs.
- The same applies to the 'matter' paradigm. Light is considered in terms of vision. But a much larger sense than vision is not being considered. The infrared component of sunlight which (halogen) bulbs still contain that is important to processes in the skin has even been removed from the draft of a new light definition of 13 November 2017.
- "Computing power" and "empathy" diverge if the energy costs are not taken into account related to the conversion of many thousands of production and logistical changes of new applications. There is also continuous idle power use by new control options and sensors.
- A diverse "case history" also demands a recycling and circularity evaluation of all kinds of metals in semiconductors, drivers and associated electronic components. Light resources with a long service life also end up in the environment. The three generations of failed LEDs in the last 10 years fail to achieve the praised service life.
- With the last generation LED lights, which have been on the market for hardly two years, the ethical paradigm of "caution" has erroneously been removed from the consciousness. A number of important comparative preliminary studies of the last LED developments all seem to indicate a deteriorated quality of plants and food. Worrying effects in education in terms of errors, creativity and memory are also found. Not enough attention is paid to these worrying results. A scientific, independent follow-up study with NGO financing will start in Germany this month and will hopefully publish its conclusions in the second quarter of this year. The findings still seem to point in the same direction. The LED light is far from being a suitable replacement for the use of the (halogen) bulb.



Pitfall

The progress of this political process must be considered a pitfall. It is not a pitfall you cannot climb out of. Technical developments often benefit from increased understanding but there is not yet a foundation for a general legislative framework. In 2016, it was clear that outphasing required at least two years of postponement based on technical/logistical grounds. In 2018, we have to conclude that the continued existence of the halogen lamp and the LED is ethically sound. Citizens will keep the freedom of choice and can make their own energy-conscious choice based on increased insight. The negative impact of that freedom of choice on the overall energy consumption is almost negligible considering all other actually free choices. Robbing the citizen of that freedom is only a cheap, manipulative political result.

Solutions

The dilemmas of the implementation of technology and humankind do not seem to be unsolvable but impose special requirements on the nature of the stakeholders and the process. If self-driving cars start being used in this era, it will demand a broadly supported innovation process driven by values². When Tesla entrepreneur Elon Musk responds to the first deathly traffic accident which involves a self-driving car by pointing to a formula based on which his system would result in 500,000 fewer traffic victims (“Do the bloody maths”), he ignores the ethical fact that the intrinsic value of a

human life exceeds mere calculative considerations. The question is not whether self-driven vehicles are safer than human drivers - they undoubtedly are - but whether we are ready to introduce technology with algorithms that result in fatalities. Less drastic but similar is the use of LED. The question is not whether LED cannot be used more efficiently in some places - this can be calculated - but whether the LED is suitable for all uses. An ethical consideration is necessary with entirely different stakeholders than lighting technicians and businesses. This consideration starts with humans, society, and inquires about the morality behind the technology. The motivations of direct and indirect stakeholders are the human contribution to this. An impact analysis must then provide the direction of how the technology will relate to mankind. This process is currently absent in the pitfall of the statutory outphasing of the halogen lamp.

Support

The political outphasing has been halted in Texas. The motive of confusing enforcement played a decisive role. Through exceptions with technical specifications for very low temperatures and with exempted fixtures, the distribution seemed to continue in shady trade channels. A new situation for lamps seemed to arise which is comparable to the cannabis market in the Netherlands. This can never be the goal of your legislation. But the outphased incandescent bulbs are still freely available online. Legislation may provide directions but not impose any prohibitions in a field which has not been technologically/ethically studied driven by values, let alone has been evaluated. This letter asks for an evaluation moment of your proposals for the outphasing in 2020 and to take a step back and withdraw a general prohibition of the halogen lamp as of 1 September 2018 or to at least postpone it again. This is not a political defeat, but political courage based on the technical/ethical reality.

- 1 Jochanan Eynikel "Robot aan het stuur- over de ethiek van techniek" Lannoo 2017 ISBN 978 94 014 4099 8 page 111
- 2 <https://etion.be/wincanvas>

Henk Stolk

Mezendreef 2
2910 Essen Wildert
Belgium

Phone no. + 31 6 53 23 16 68

h.stolk@skynet.be

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Publications

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Filosofie voor Duisternis I, II, III and IV

How illuminated is the light?

Who has the knowledge fo laws about light?

Recognizing the source of the lamp

Positions

Chairman Expert Group obtrusive light

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Member of Arbitration Board Code of Conduct for lightcalculations

NL

Working Group Member human centric technology

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Sports field lighting instructor HVK

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Director Oostendorp Beheer b.v.

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