

## *Habits transition*

The 12 of December 2015, during the 21st Conference of the Parties of the UNFCCC (United Nations Framework Convention on Climate Change), 189 countries signed the Paris Agreement to pursue political efforts to limit the increase of temperature to 1.5°C.<sup>1</sup> The advice, ignored for decades, of the Intergovernmental Panel on Climate Change (IPCC) on the necessity to reduce greenhouse gas emissions to reduce the global warming reached the global public opinion. The energy transition from fossil fuel to renewable energy is nowadays more urgent than ever. From 2015 onwards, many countries (unfortunately not all) are rushing to invest on renewable energy, from small solar panel to huge wind turbines and biogas power plants.

The ongoing transition, one of the driver of the so-called third industrial revolution, is one of the biggest challenge that humanity has to face. The challenge is both technological and cultural. Consumers are becoming *prosumers*. The centralized energy production system is democratizing itself. Without a smart control, the risk of blackout, with consequent huge damage to our daily life, because of sudden disentanglements between energy production and energy demand, is more and more common and real. In Germany, one of the biggest investor in renewable energy, in past years local blackout occurred<sup>2</sup>. If, on one side, the alignment of the energy production and demand may be solved with technological solutions as the smart-grid, real-time monitored electricity infrastructure<sup>3</sup>, or huge energy storage systems<sup>4</sup>, on the other side, it needs the awareness of all citizens to reduce consumption at night, improve the energy efficiency of buildings and, in general, rationalize the use of energy.

*Habits transition* is an art installation made by optic fibers and RGB LED lights controlled by a microcontroller directly connected, in real-time, with the energy production and demand data provided by the Red Eléctrica de España (REE). The optic fibers, by exploiting the property of the light, generally transport information for the internet network at the fastest speed that the current technological medium allows. At the same time the brought information interconnect people all around the world, stimulating cultural interchange.

In *Habits transition*, two separated bundles of optic fibers represent the Spanish solar renewable energy production and the energy demand, to point out the current issue of over, or under, energy production and its effects on society, in order to increase the awareness about the rationalization of the use of energy. The different color gradients highlight the peak, or the lack, of production and demand. Different colors mean blackout. Only when the colors are aligned, the energy grid may work.

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<sup>1</sup> <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

<sup>2</sup> <https://www.dw.com/en/berlin-blackout-raises-questions-over-germanys-power-grid/a-47730394>

<sup>3</sup> <https://ieeexplore.ieee.org/abstract/document/5759167>

<sup>4</sup> <https://www.bloomberg.com/news/articles/2020-02-28/two-years-on-musk-s-big-battery-bet-is-paying-off-in-australia>