## OUR VISION

# SUSTAINABLE COMFORT FOR EVERYONE

OUR PURPOSE IS TO PROVIDE EVERYONE,
IN EVERY CORNER OF THE WORLD,
WITH HIGH-QUALITY
HEATING AND HOT WATER SOLUTIONS,
WHILE PROTECTING THE ENVIRONMENT.



SUSTAINABILITY REPORT 2018

# THE ENERGY CHALLENGE

THE GLOBAL SCENARIO IN THE SECTOR OF THERMAL COMFORT

**The world's energy consumption is increasing, and with it $CO_2$ emissions: the planet's environmental sustainability is at risk.**

IN TERMS OF IMPACTS, 4 OUT OF THE FIRST FIVE **GLOBAL RISKS** ARE DUE TO CLIMATE CHANGE

(World Economic Forum, Global Risk Report, 2018)

ACCORDING TO THE IPCC*, IF TEMPERATURES RISE BY **2°C**:

**410 MILLION**

URBAN RESIDENTS WILL BE EXPOSED TO **SEVERE DROUGHT**

**49 MILLION**

PEOPLE WILL BE IMPACTED BY **SEA-LEVEL RISE** OF 56 CM

+4°C THE POTENTIAL INCREASE IN TEMPERATURES BY THE END OF THE CENTURY **IF NO ACTIONS ARE TAKEN**

*Intergovernmental Panel on Climate Change

## AN ULTIMATUM TO PLANET EARTH

**Anthropic activities induced a global warming trend that pushed temperatures to rise by about 1°C in 2017, compared to pre-industrial levels.** Numerous regions have already suffered warming dynamics way above average. That is especially the case in continental areas: between 20 and 40% of global population lives in regions where global warming has been higher than 1.5°C for at least one season over the period 2006-2015[1].

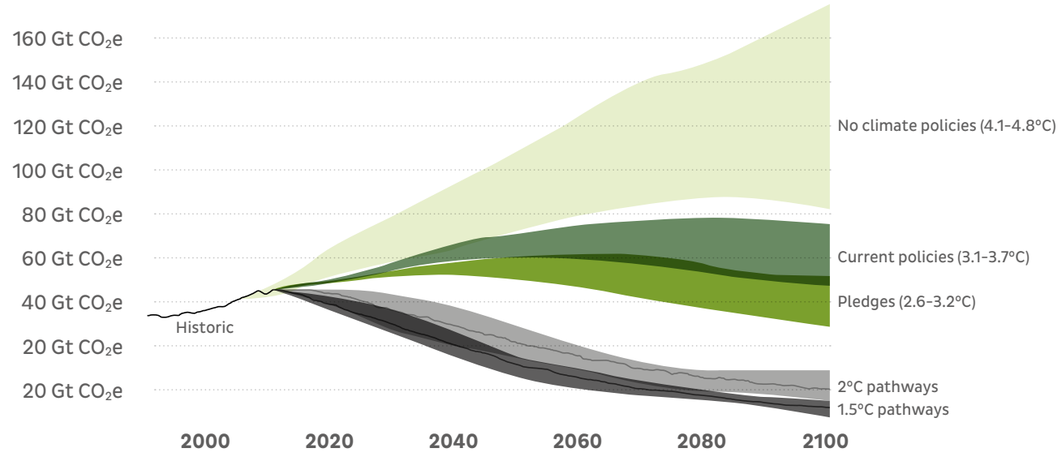
In 2015, during the 21st Conference of the Parties to the UNFCCC, 195 countries joined forces and adopted the Paris agreement, which sets the goal of strengthening the global response against the threat of climate change. All subscribing countries committed to containing the rise of global temperatures below 2°C.

The 2°C-limit to the increment of global temperatures has been revised in 2018, when the Intergovernmental Panel on Climate Change urged the international community to work towards a 1.5°C-limit.

According to the **IPCC** in its ***"1.5 Degree Report"***, **the next 10 years will be crucial for the containment of global warming**: "Limiting global warming to 1.5°C is not impossible, but it will require unprecedented changes in every aspect of our society", Hoesung Lee, President of IPCC, remarked.

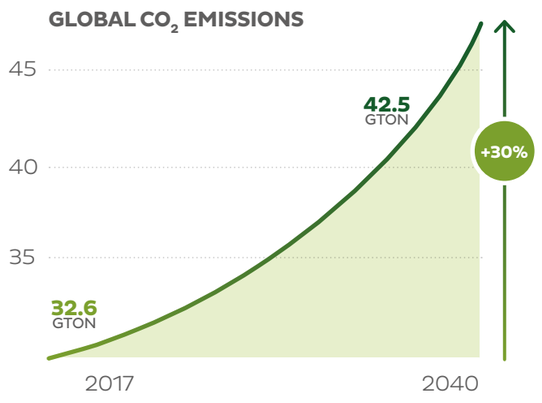
According to the IPCC ***"1.5 Degree Report"***, a radically different approach to tackling climate change is necessary to avoid catastrophic consequences for planet earth. If no efforts to curb $CO_2$ emissions are put in place, by 2100 our planet may be up to 4.8°C hotter than at pre-industrial levels.

In terms of consequences for the environment, global warming caused by greenhouse gas emissions will induce a rise in sea levels, as well as a reduction in size of glaciers. At the same time, extreme meteorological phenomena, such as flooding, heat waves and droughts will increase in frequency and intensity. Such a massive shift in the condition of our environment will inevitably affect the current geopolitical status quo. The World Bank argues that climate change in densely populated areas may push more than 140 million people to migrate from their homes due to worsening life conditions[2]. At the same time, resource scarcity and access to water may soon become a reason for conflicts to escalate.




*Global greenhouse gas emissions scenario (Source: Our World in Data 2018)*

## $CO_2$ EMISSIONS ARE BACK ON THE RISE




*Source: IEA 2018, World Energy Outlook*

**After three years of global emissions remaining flat, 2017 marked a new rise in $CO_2$ emissions.**

Global energy-related $CO_2$ rose by 1.4% in 2017, an increase of 460 million tons (Mt), and reached a historic high of 32.6 gigatons (Gt).

The increase in carbon emissions, equivalent to the emissions of 170 million additional cars, was the result of **robust global economic growth of 3.7%**, **lower fossil-fuel prices** and **weaker energy efficiency efforts**. These three factors contributed to **pushing up global energy demand by 2.1% in 2017**[3].

The trend of growing emissions, however, was not universal. While most major economies saw a rise in carbon emissions, some others experienced declines, such as the United States, the United Kingdom, Mexico and Japan.

Overall, Asian economies accounted for two-thirds of the global increase in carbon emissions.

China's economy grew nearly 7% last year, but emissions

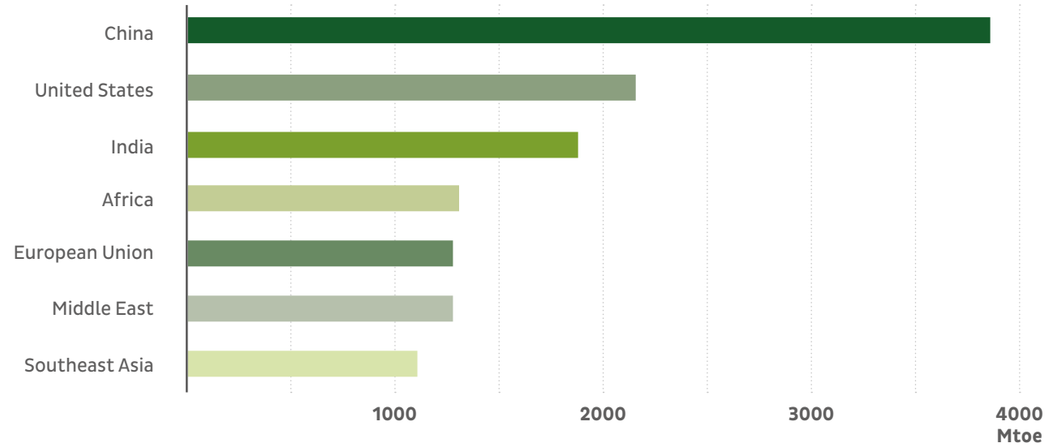
1. IPCC (2018) "GLOBAL WARMING OF 1.5 °C" – Technical Summary"

2. The World Bank (2018) "Climate Change Could Force Over 140 Million to Migrate Within Countries by 2050: World Bank Report"

3. IEA (2018): Global Energy and $CO_2$ Status Report

increased by just 1.7% (or 150 Mt) thanks to continued renewables deployment and faster coal-to-gas switching. China's carbon dioxide emissions in 2017 reached 9.1 Gt, almost 1% higher than their 2014 level.
The most recent ***"World Economic Outlook 2018"*** by the **International Environment Agency (IEA)**, focuses on changes within the energy sector, which is one of the most significant contributors to greenhouse emissions at the global level. In the IEA's New Policies Scenario, rising incomes and an extra 1.7 billion people, mostly added to urban areas in developing economies, push up global energy demand by more than a quarter to 2040. All the growth comes from developing economies, led by India. As recently as 2000, Europe and North America accounted for more than 40% of global energy demand and developing economies in Asia for around 20%. By 2040, this situation will be completely reversed, with **China accounting for the majority of the world's energy demand**, which will be around double as much as the United States.

**ENERGY DEMAND 2040**




*2040 energy demand forecast by country*
*Source: World Energy Outlook 2018*

## A GLOBAL CALL TO ACTION

**Policy makers worldwide are looking at possible solutions to avoid this worst-case scenario.** To address such a challenging tasks, however, a comprehensive analysis of all shifts in socio-economic factors is critical. There is a number of ways for the international community to act upon the threat posed by global warming. **The 2030 Sustainable Development Agenda**, approved in 2015, already sets a number of ambitious goals to attain a more sustainable way of living on a global scale. It is yet unclear whether the goals set for 2030 will be reached successfully. In its "*World Economic Outlook 2018*", the IEA analyses several future scenarios according to different possible policies. In particular, the IEA identifies several measures at no economic cost which, if put in place, could curb emissions and allow us to reach the 2°C global warming target set by the 2015 Paris Agreement:

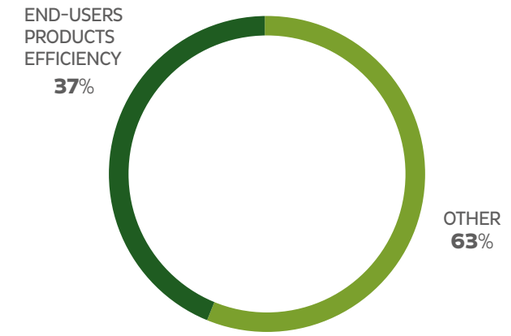
- REFORM OF EFFICIENCY AND FOSSIL FUEL SUBSIDIES
- PROMOTION OF RENEWABLE ENERGIES AND REDUCTION OF LEAST-EFFICIENT COAL POWER
- REDUCTION OF UPSTREAM OIL AND GAS METHANE
- OTHER MEASURES, SUCH AS NUCLEAR OR FUEL SWITCHING

## ENERGY EFFICIENCY REPRESENTS A KEY INTERVENTION TO CURB $CO_2$.

According to the 2018 report of the International Energy Agency, if we consider the total number of possible areas of intervention for curbing $CO_2$ emissions by 2040, 37% derives from the energy efficiency mainly of products used by end users. **More efficient products can contribute to substantially reducing the forecast increase in annual emissions.**

*Source: World Energy Outlook, IEA 2018*

**AREAS OF INTERVENTION** TO CURB $CO_2$

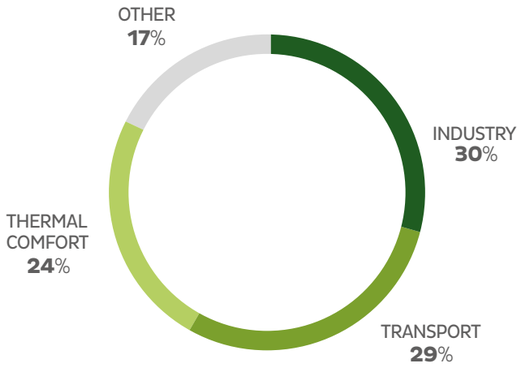



## THE IMPACT OF THERMAL COMFORT ON THE ENERGY SECTOR

**Globally, thermal comfort accounts for 24% of total final energy consumption**. Energy consumption and the related emissions are caused by three main areas: 30% is attributable to the industrial sector, 29% to transport and 24% to domestic and commercial thermal comfort.

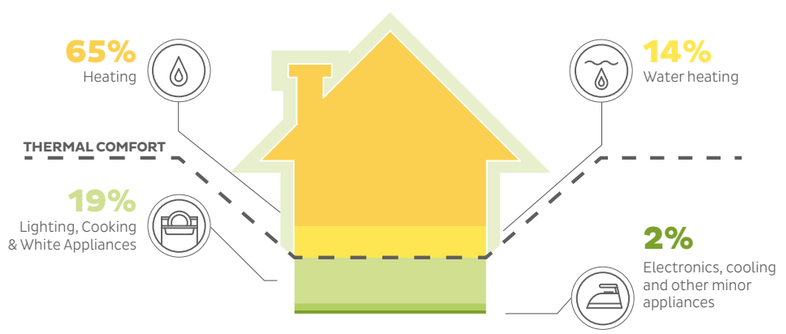
Thermal comfort is particularly important in residential energy consumption.
**Heat demand in the buildings sector worldwide accounts for almost 75% of total final consumption, mostly for space heating**.

**GLOBAL CONSUMPTION BY SECTOR**




*Source: World Energy Outlook, IEA 2018*

**AVERAGE RESIDENTIAL ENERGY CONSUMPTION:**
Western Europe




*Source: Eurostat 2017 and in-house estimates*