

# Becoming climate positive

IKEA Climate Report **FY21**



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## **About this report**

This report summarises our performance during FY21 compared to the IKEA commitment to become climate positive by 2030. The climate commitment is a key element of the IKEA sustainability strategy, People & Planet Positive. This report covers the entire value chain and franchise system and provides an update on activities and the ongoing work to measure progress. The IKEA Climate Report is issued by Inter IKEA Group.

The reporting period follows the financial year 2021 (FY21), which runs from 1 September 2020 to 31 August 2021.

The IKEA business is defined as the business activities performed by all entities operating under the IKEA Brand. "We" in this report refers to the IKEA business. The IKEA value chain includes sourcing and extracting raw materials, manufacturing and transporting products, store operations, the customer travel to stores, product use in customers' homes and product end-of-life.

[Read the complete IKEA Sustainability Report FY21](#)

# Making every year count

Welcome to the IKEA Climate Report – the first complementary climate deep-dive released in connection to the annual IKEA Sustainability Report. This report is launched at a time when climate change is acknowledged as one of society's greatest challenges, and a major point of focus for IKEA – one that strongly impacts our vision to create a better everyday life for the many people. That's why it's vital that we transparently and comprehensively share our progress, and the challenges we face, towards the IKEA climate positive commitment and goals.

The outcome of the UN climate conference COP26 in Glasgow showed that the world is heading towards a global temperature increase of 2.7°C.<sup>1</sup> Based on the latest [IPCC report \(AR6\)](#), the world will inevitably reach an increase of at least 1.5°C during the 2030s. As a global brand, the IKEA business is part of both the problem and the solution.

Within our climate positive commitment, we have set ambitious goals to drastically reduce greenhouse gas (GHG) emissions across the IKEA value chain. The largest portion of the IKEA climate footprint comes from the materials used in the IKEA range (52%) and from the use of IKEA products in customers' homes (17%), which includes the energy

consumption of lighting and appliances over the lifetime of a product.

**During FY21, it's encouraging to see that we have managed to reduce the IKEA climate footprint by 1.6 million tonnes of CO<sub>2</sub> eq in absolute terms compared to the baseline FY16 – a reduction of 5.8% while IKEA sales surpassed previous highs. This means that we're on track towards our 2030 goal of a reduction of at least 15% compared to the baseline FY16.**

We have reached one-third of the goal with two-thirds of the time remaining. This is the result of a lot of hard work by co-workers across the IKEA business committed to address every part of the IKEA footprint. Together, we have realised many short- and medium-term movements like significantly improving the energy efficiency of our already energy efficient LED bulbs and developing and increasing the sales of our plant-based food options, such as the plant ball and veggie hot dog. All in all, these support our commitment to make sustainable solutions available to many more people with thin wallets.

Other big movements include our work towards consuming 100% renewable energy for IKEA operations. For example, we secured 100% renewable electricity in 10 additional IKEA markets. The biggest achievement was in Russia, where we managed to secure renewable electricity for both our IKEA stores and factories. In China, we secured renewable electricity for all IKEA factories, as well as packaging and distribution units. This means that as of 1 January, 2021, all IKEA owned factories consume only renewable electricity – globally. In addition, we launched a programme to enable our 1,600 direct suppliers to purchase 100% renewable electricity.

We recognise, however, that most things remain to be done. Not all climate footprints are heading in the right direction, including those of our stores, our transports and the materials used in the IKEA range. With eight years to go before our 2030 goal, the needed longer-term movements have been identified and integrated into IKEA business plans. For materials, we now have concrete plans to reduce our impact.

To secure that necessary guidance and standards are in place to lead with facts in line with science, we have worked with many initiatives and consultations

during FY21. Together with Climate and Clean Air Coalition (CCAC) and Stockholm Environment Institute (SEI), we launched new external guidance that enables businesses to measure air pollution across their value chains. We're also closely involved in the development of the upcoming external standards by GHG Protocol on carbon removals, land use and bioenergy, as well as Science Based Targets initiative's (SBTi's) Forestry, Land and Agriculture (FLAG) project. These standards are critical to measure and set a credible target for the removing and storing carbon contribution of our climate positive commitment.

Our journey towards becoming climate positive continues. During FY22, we will align with the new net-zero standard – ensuring our 1.5°C commitment is fully in line with science. As always, we're aiming to achieve further emissions reductions wherever possible by continuing to learn where additional potentials exist and where we can move even faster. Together, we need to make every year count – from now and every year going forward.

<sup>1</sup> [Emissions Gap Report 2021](#) | UNEP - UN Environment Programme

# Becoming climate positive

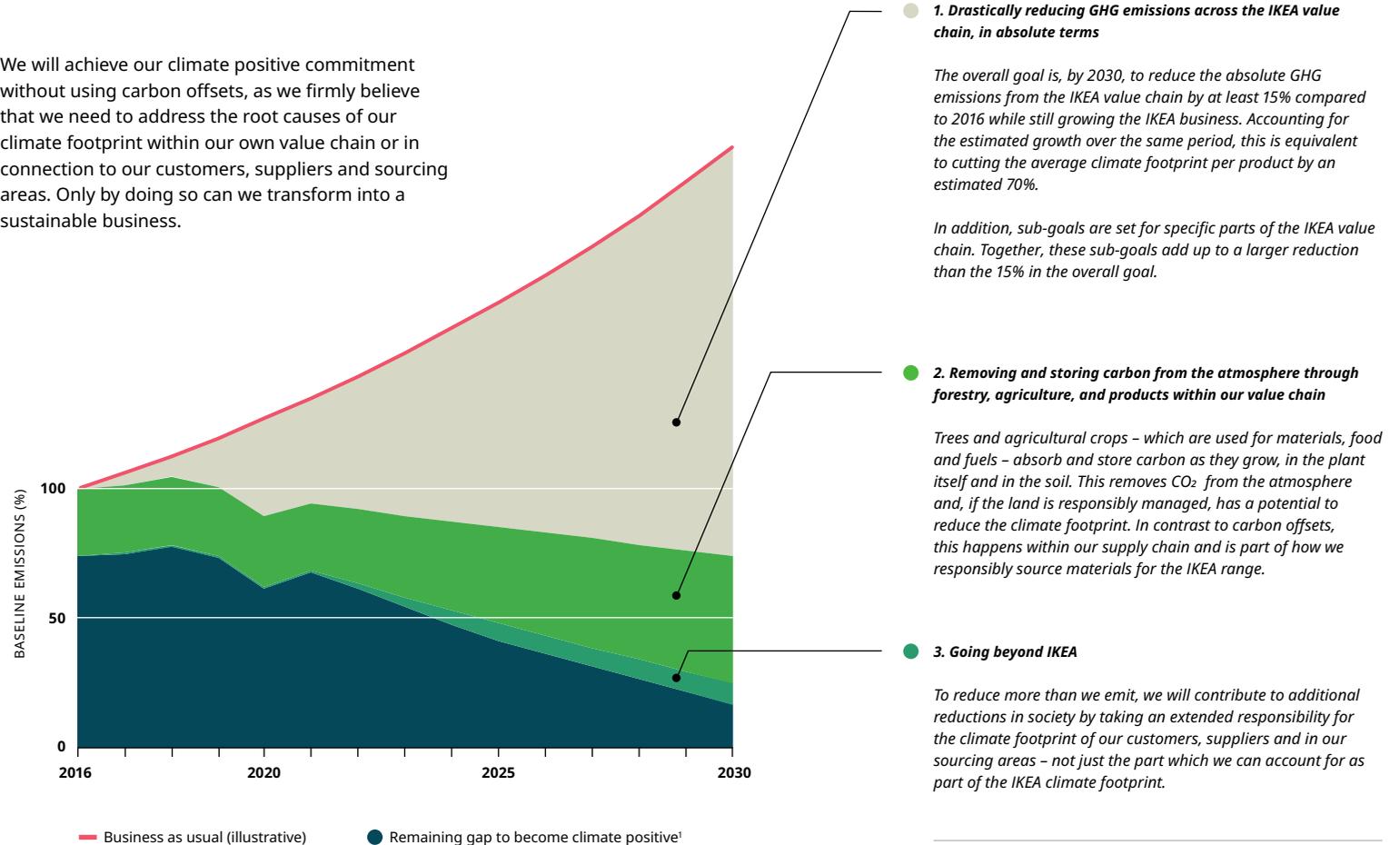
**By 2030, IKEA is committed to becoming climate positive by reducing more greenhouse gas (GHG) emissions than the IKEA value chain emits, while growing the IKEA business. This is how we contribute to limiting the global temperature increase to 1.5°C by the end of the century.**

To become climate positive, we must first reduce the climate footprint of the total IKEA value chain in line with the 1.5°C target – including halving emissions by 2030 and reaching net-zero by 2050 at the latest.

To reduce our climate footprint, we have set the following strategic goals, in order of priority:

- 1. Drastically reducing GHG emissions across the IKEA value chain, in absolute terms.**
- 2. Removing and storing carbon from the atmosphere through forestry, agriculture and products within our value chain.**
- 3. Going beyond IKEA by taking an extended responsibility for the climate footprint of our customers, suppliers and sourcing areas.**

We will achieve our climate positive commitment without using carbon offsets, as we firmly believe that we need to address the root causes of our climate footprint within our own value chain or in connection to our customers, suppliers and sourcing areas. Only by doing so can we transform into a sustainable business.



<sup>1</sup> The gap is based on current plans. We work to close this gap and await the final methodology for removing and storing carbon before deciding on the full set of actions to take.

# FY21 summary of progress



## 1. Drastically reducing GHG emissions across the IKEA value chain, in absolute terms

During both FY20 and FY21, COVID-19 impacted our operations and as a result our climate footprint. We've seen disruptions in our supply chain, temporarily closed restaurants, impacts on production and the availability of ocean containers for transport. The IKEA climate footprint in FY21 is estimated to be 26.2 million tonnes CO<sub>2</sub> eq, a decrease of 5.8% in absolute terms compared to the baseline FY16, but an increase of 5.7% compared to FY20. As expected, the climate footprint increased as retail sales began to recover from the pandemic.

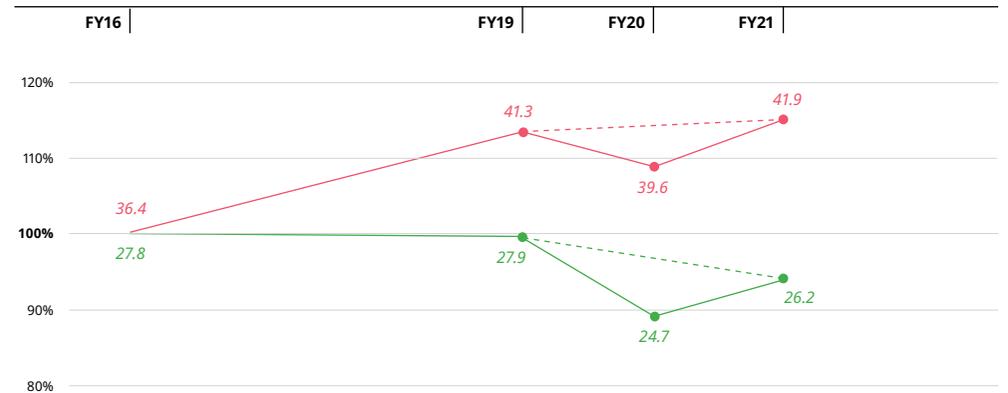
When comparing to pre-pandemic levels (FY19), our retail sales are now higher, while at the same time our climate footprint has decreased by almost 1.8 million tonnes CO<sub>2</sub> eq (FY21 compared to FY19) – continuing the break in trend achieved in FY19. This trend is also reflected in the decrease of the

climate footprint per unit of retail sales by 8% between FY19 and FY20 and 0.1% between FY20 and FY21.

During FY21, we saw solid progress in many areas impacting the total climate footprint such as the continued improvement in the energy efficiency of our LED bulbs, which are, on average, 7.8% more energy efficient compared to FY20. Another area of progress was in our movement towards 100% renewable energy across the IKEA value chain, especially for renewable electricity.

When it comes to our material agenda, however, we see a negative trend as the material footprint is still increasing. But we have plans in place to reach our strategic goal. The outcome of these will take longer than the ones for plant-based food and renewable energy, as new materials need both innovation and upscaling before they have a visible impact on the overall footprint.

**Our climate footprint vs. business growth** ● IKEA retail sales (EUR bn) ● Climate footprint (million tonnes CO<sub>2</sub> eq)



The climate footprint per sales (million tonnes CO<sub>2</sub> eq per EUR bn sales). Continuing the break in trend achieved in FY19.

FY16	0.76	FY19	0.68	FY20	0.62	FY21	0.62
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----- The trend when disregarding COVID-19 disruptions in FY20

## FY21 key activities to drastically reducing GHG emissions

### → Launching a new and more affordable way for people to save energy

In FY21, we introduced SOLHETTA LED bulbs, which last about 25,000 hours and are - on average - more affordable and 35% more energy efficient than previous IKEA LED bulbs.<sup>1</sup> Read more about SOLHETTA ([page 26](#)).

### → Offering more plant-based food choices

FY21 was the first full year we offered our plant ball, the ingredients for which have only 4% of the climate footprint compared to the ingredients of the meat-based version ([page 15](#)).

### → Achieving 100% renewable electricity in IKEA operations in 10 additional markets

During FY21, 10 additional IKEA markets switched to 100% renewable electricity. The biggest movement was securing 100% renewable electricity for IKEA operations in Russia (stores, offices and factories) ([page 21](#)).

### → Achieving 100% renewable electricity for all IKEA factories and packaging and distribution units globally<sup>2</sup>

As of 1 January 2021, we have also secured 100% renewable electricity for IKEA Industry and IKEA Components units in China, meaning that all operations globally by IKEA Industry and IKEA Components now only consume 100% renewable electricity ([page 16](#)).

### → Accelerating IKEA suppliers' transition to 100% renewable electricity

The IKEA business launched a new programme to accelerate suppliers' transition to only consume renewable electricity.<sup>3</sup> The programme supports over 1,600 direct suppliers and will first be introduced in three of the largest purchasing countries: Poland, China, and India. Achieving 100% renewable electricity in these countries will save 451,000 tonnes of CO<sub>2</sub> eq emissions per year. That's equivalent to approximately 2% of the total climate footprint of the IKEA value chain ([page 17](#)).

### → Taking steps to phase out coal- and fossil-oil based fuels in production

By completely removing coal from our ceramic production and from a few textile suppliers who had a high use of coal, we achieved a reduction of 2.3 percentage points. Since FY16, we have reduced the use of coal- and fossil-oil based fuels in production by almost one-third. For alternative fuels used in product transport, the share reduced from 3.3% in FY20 to 0.8% ([page 16](#)).

### → Increasing the share of recycled polyester in our supply chain

In 2020, we reached the milestone of 90% recycled content in textile products made of polyester. Now, we've widened our measurement scope to include all polyester and fibre applications ([page 13](#)).

### → Investment to generate more energy from wood waste and minimising air pollution

IKEA Industry signed an agreement for renewable electricity production with Meva Energy AB. The Meva Energy technology generates both electricity and heating from wood waste that's currently not possible to recycle and is incinerated. Compared to conventional technology, the new energy technology not only has an increased electricity output, but also minimises air pollution ([page 18](#)).

### → New corporate guidance on air quality

Together with the [Climate and Clean Air Coalition and Stockholm Environment Institute](#), we initiated and supported the development of a new air pollutant emissions standard to allow companies to measure their full value chain impact on air quality and take action to reduce it. The first version of the guidance was launched at COP26, after which the IKEA business and other companies will test and help refine the guidance.

Also, at COP26, we joined the Alliance for Clean Air, a new alliance hosted by World Economic Forum, aimed at accelerating corporate action on clean air in a science-based way.



#### Working with new materials and innovations for a smaller footprint

We're innovating with, and increasing the use of, renewable natural fibres, which require less fertiliser, pesticide and water, and contribute to lowering our materials climate footprint.

And since glues used in boards represent 5% of the total IKEA climate footprint, we are working to convert from fossil- to bio-based glues ([page 10](#)).

<sup>1</sup> Specifically, when compared to LEDARE and RYET which made up 80% of IKEA LED bulb sales before SOLHETTA launched.

<sup>2</sup> IKEA Industry and IKEA Components.

<sup>3</sup> Through IKEA Supply.

## 2. Removing and storing carbon from the atmosphere through forestry, agriculture, and products within the IKEA value chain

During FY21, we continued to contribute to the work of the GHG Protocol to develop a global accounting standard for how to measure the impact on climate change from carbon removals and storage.

This will extend the GHG Protocol with guidance for accounting and reporting carbon removals, land use and bioenergy. Based on this, the Science-Based Targets initiative (SBTi) will finalise its standard for setting goals connected to Forest, Land and Agriculture (FLAG) - work that the IKEA business is also contributing to. Completion is expected by the end of 2022. Once both standards have been finalised, we will set a strategic goal for removing and storing carbon through forestry, agriculture and products as part of our climate positive commitment.

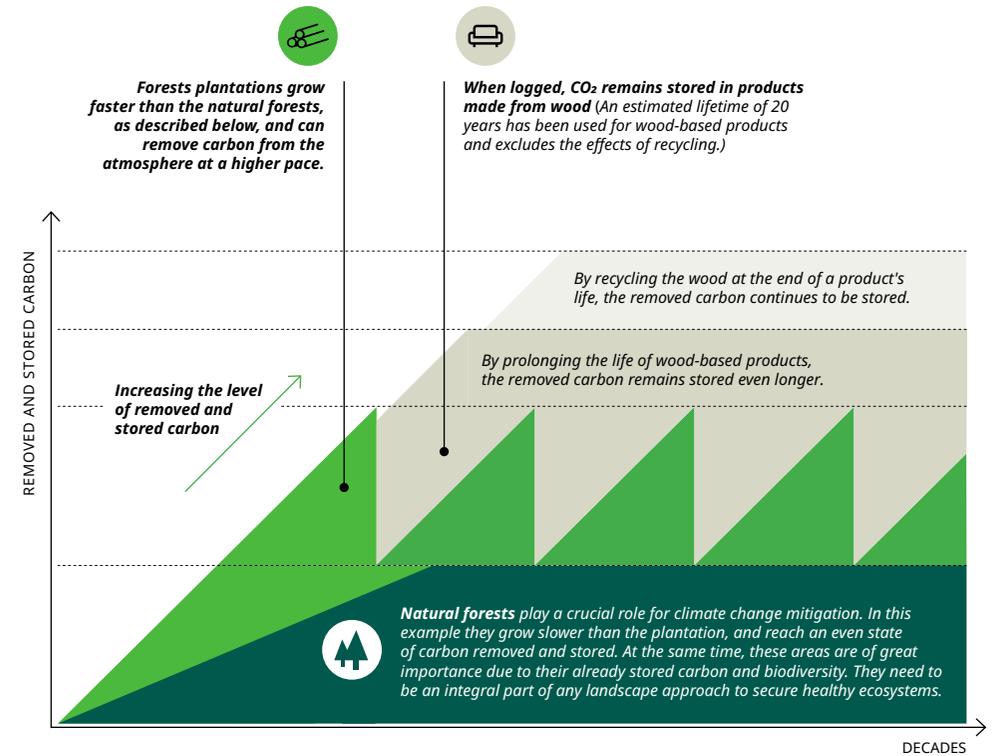
For the purpose of transparency, we have decided to disclose the preliminary figures this year, to the best of our knowledge, for the contribution of removing and storing carbon through forestry, agriculture and products. The reason is to provide an indication of its contribution towards the IKEA climate positive commitment. Please note that all figures are preliminary and subject to change (either increase or decrease) and will be revised once the guidance by the GHG Protocol has been finalised.

The main contribution to carbon removals and storage comes from the increasing carbon stock levels in the forests that we source wood for our products from. In FY21, 5.3 million tonnes CO<sub>2</sub> eq (estimated) was removed through forestry (net removal in the forest). This means that, on average, there is a net increase

in forest growth (above ground biomass), taking into account the decrease from wood harvested and losses from storms or fires. Many forests used for wood production in the world, which today are passively managed, have the potential to remove more carbon from the atmosphere by more active management. Conservation of old growth forests or other areas of high conservation value are at the same time very important. These forests often have a significant amount of carbon stored in them and provide irreplaceable services in terms of biodiversity, soil protection and many others. [Read more about our responsible sourcing of wood.](#)

The second-largest contribution comes from the effect of storing carbon in our products, especially the wood-based materials they use. This has a positive temporary storage effect, as there is a delay to when the carbon is re-emitted into the atmosphere. For our wood-based products, this is estimated to be on average 20 years. The effect of the delayed emissions coming from the temporary storage of carbon in wood-based products, can be estimated to 1.4 million tonnes CO<sub>2</sub> eq.<sup>1</sup> By prolonging the life of IKEA products and materials through circular business models we work to increase this effect. [Read more.](#)

Although the effect of removing and storing carbon seems potentially significant already, it's important to recognise that we'll only reach net-zero once GHG emissions have been reduced in absolute terms by at least 90% by 2050 at the latest. The remaining emissions are then neutralised by the carbon removal and storage effect.<sup>2</sup>



**A simplified model of removing and storing carbon through establishment of a fast growing tree plantation plus restoration of natural forests at degraded land, including the effect of prolonging the carbon storage effect through wood based products and recycling.** Trees from responsibly managed forest plantations absorb substantial amount of carbon dioxide (CO<sub>2</sub>) from the atmosphere. When trees are made into wood-based products, they act as temporary carbon storage. This storage effect can be extended through reuse, refurbishment, remanufacturing and recycling of the material at end-of-life. In resilient landscapes, the contribution of responsibly managed forest plantations towards climate change mitigation, and the many contributions of natural forests, in terms of biodiversity or soil protection, for example, have to be considered together. The forest's landscape resilience is important in itself in order to secure that the carbon is not released back to the atmosphere due to extraordinary weather events or pests (for instance). A holistic view, where we balance forest growth, carbon storage and other environmental services such as biodiversity, is critical.

<sup>1</sup> Including the recycled material content present in the products, excluding raw material volumes that do not contribute to land carbon removals. By estimating the delayed emission coming from the temporary storage of carbon in products we acknowledge the importance of any emission that reduces the remaining global carbon budget in line with the Paris Agreement.

<sup>2</sup> Science-based Targets initiative – Net-zero standard.

### 3. Going beyond IKEA by taking an extended responsibility for customers and suppliers



**Compared to FY20, the methodology to measure the effect of going beyond IKEA is now developed and we're starting to disclose its performance.**

A formal strategic goal will not be set until one is set for removing and storing carbon. The larger the contribution from removing and storing carbon is, the smaller the contribution needed for going beyond IKEA. But, it's important to note that while no strategic goal has been set, we're already actively working with the movements that are part of the going beyond IKEA agenda.

To secure that the movements are connected to the IKEA business transformation – and not act as carbon offsetting – all actions and activities in going beyond IKEA are connected to the IKEA value chain. This means that they are either part of the IKEA range, supplier base or sourcing area.

Therefore, any contribution must be within one of the following areas:

**Resource use at home:** Solutions that enable the generation of renewable energy like, for example, the SOLSTRÅLE home solar offer.<sup>1</sup> In addition, it also includes solutions to improve the efficiency of energy- and water-consuming products, when used as intended. One example is the MISTELN water nozzle.<sup>2</sup>

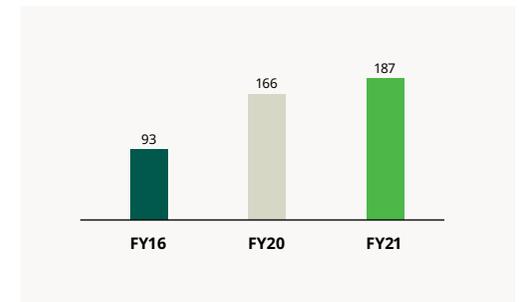
**Renewable energy for suppliers:** Actions by the IKEA business to convert our supplier partners to 100% renewable energy for their entire factory or operations, not just the IKEA share of their business.

**Improving forestry and agriculture in IKEA sourcing areas:** Actions by the IKEA business to improve forests or agricultural practices for the total surroundings/landscape where we source resources.

To avoid overestimating the contribution, we're only accounting for the contribution occurring each year, instead of summarising the total avoided GHG emissions that have taken place since baseline FY16. This year, we're only disclosing the effect of resource use at home through the SOLSTRÅLE home solar offer. As some large suppliers have alternated between reporting the climate footprint of their entire factories and only the IKEA portion, we will need additional time to secure consistency in the

reported figures. We're therefore not disclosing the going beyond IKEA contribution from suppliers this year. Until the additional guidance on carbon removals, land use and bioenergy in the GHG Protocol has been finalised, we're also not disclosing it as it otherwise could lead to double accounting.

In FY21, the total avoided emissions for the SOLSTRÅLE home solar offer was approximately 187,000 tonnes CO<sub>2</sub> eq. This is calculated as the effect of the electricity in the national grid, which the renewable electricity from home solar replaces. The average effect is calculated for the lifetime of the home solar panels, similar to how the climate footprint for product use at home is calculated for lighting and appliances.

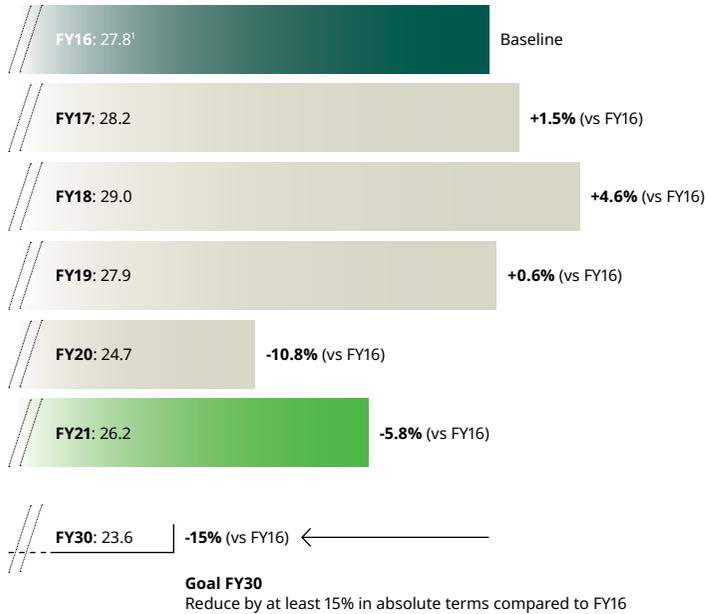


Thousands of tonnes CO<sub>2</sub> eq avoided through SOLSTRÅLE Home Solar

<sup>1</sup> Available in Ingka Group markets.

<sup>2</sup> This excludes lighting, appliances, taps, showers and circular services or solutions since they are already accounted for as GHG emissions in the IKEA climate footprint. Any improvement of these are accounted for in the IKEA climate footprint (drastically reducing GHG emissions), instead of going beyond IKEA.

**IKEA climate footprint - performance vs. baseline FY16**  
(million tonnes CO<sub>2</sub> eq)

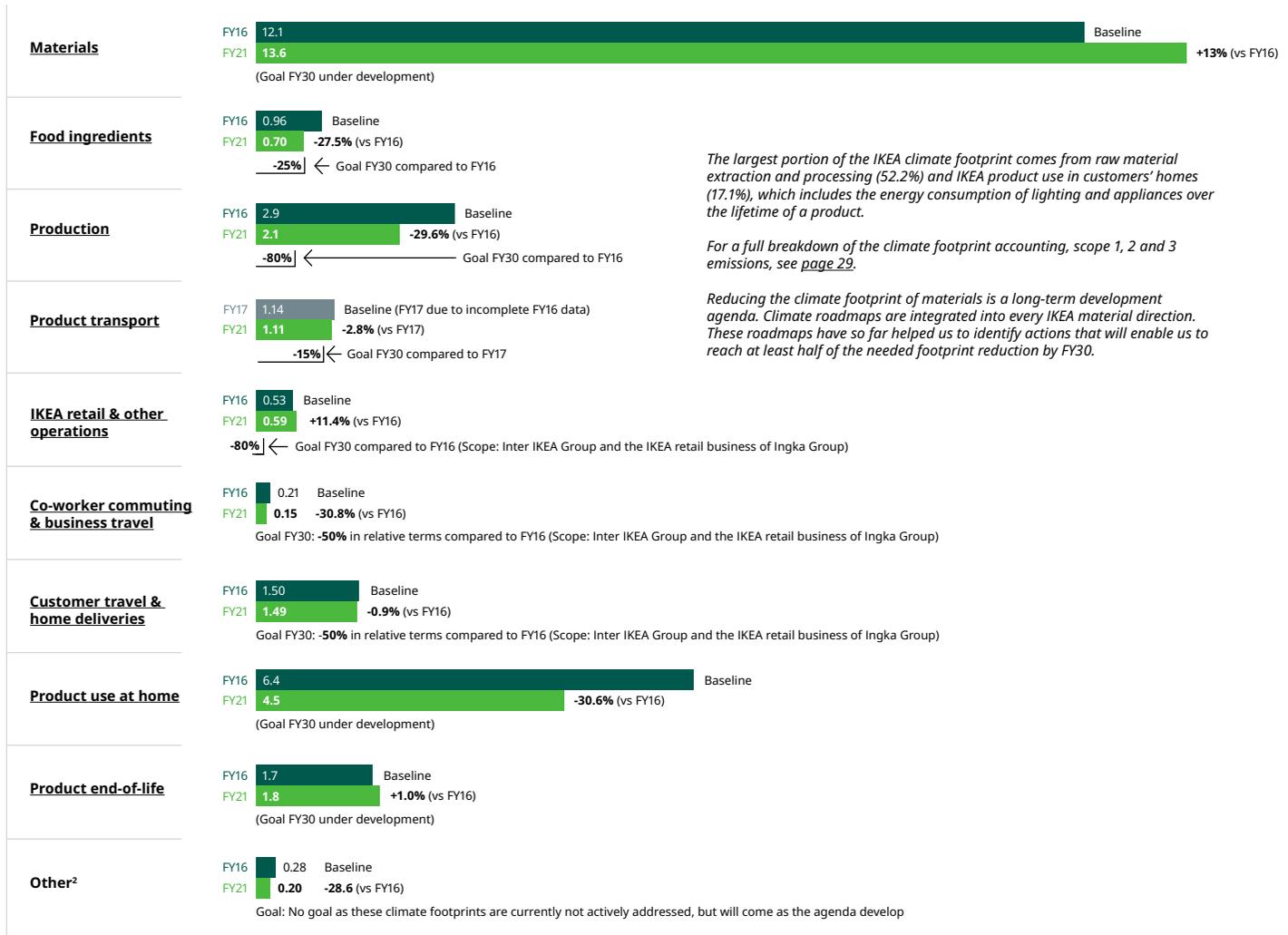


In FY21, the total IKEA climate footprint decreased by 1.6 million tonnes of CO<sub>2</sub> eq in absolute terms compared to baseline FY16, a reduction of 5.8%, while IKEA sales previous highs. As expected, the climate footprint increased during FY21 as retail sales began to recover from the pandemic.

<sup>1</sup> Historical data should not change, but we always revise historical figures if data quality or science has improved.  
<sup>2</sup> Includes the climate footprints of capital goods, materials connected to retail equipment and co-worker clothing, and waste generated in IKEA operations.

**Climate footprint at each stage of the IKEA value chain**  
(million tonnes CO<sub>2</sub> eq)

● FY16 ● FY21 ← Goal FY30 compared to baseline (FY16)



The largest portion of the IKEA climate footprint comes from raw material extraction and processing (52.2%) and IKEA product use in customers' homes (17.1%), which includes the energy consumption of lighting and appliances over the lifetime of a product.

For a full breakdown of the climate footprint accounting, scope 1, 2 and 3 emissions, see [page 29](#).

Reducing the climate footprint of materials is a long-term development agenda. Climate roadmaps are integrated into every IKEA material direction. These roadmaps have so far helped us to identify actions that will enable us to reach at least half of the needed footprint reduction by FY30.

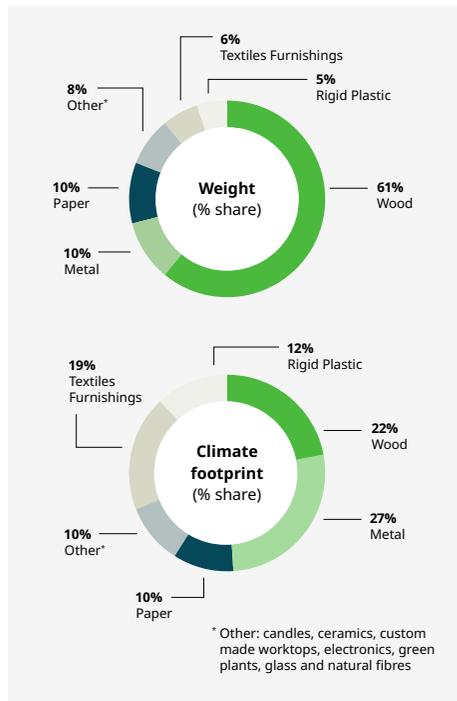
# Materials

Climate footprint (million tonnes CO<sub>2</sub> eq)<sup>1</sup>



Goal FY30: under development

Materials represent **52.2%** of the total IKEA value chain climate footprint in FY21



Material footprint vs. material weight

**There are many types of materials used in IKEA products. Altogether, they contribute the most to our climate footprint. That's why, to reduce our climate footprint, it's important to focus on the materials with the largest climate footprint: wood, metals, paper, textile furnishings and plastics. Combined, they represent about 90% of our material needs, with wood-based materials the largest by weight at 61%.**

Reducing the climate footprint of materials is a long-term development agenda. Climate roadmaps are integrated into every IKEA material direction. These roadmaps have so far helped us to identify actions that will enable us to reach at least half of the needed footprint reduction by FY30.

The climate footprint of materials has increased by 15% in FY21, compared to FY20, and is now 13% higher compared to the baseline FY16. The main reason is that sales have increased as the IKEA business recovers from the COVID-19 pandemic –

increasing the amounts of products sold and the materials used. Drawing any further conclusions is difficult at this time since the amount of materials used in the IKEA range is based on set estimations for most types of materials. Accurate yearly figures for different amounts of materials are currently only available for wood, paper-based materials, plastics and candles. In FY21, one focus was to review and revise previous material estimations to provide more accurate figures for material amounts – while the work to have a more accurate bill of material on a total IKEA level is finalised – enabling us to go from estimations to measured data. The revision caused the overall climate footprint of materials to increase as the material consumption was larger than previously estimated. Read about our footprint calculation methodology ([page 31](#)).

Going forward, we have set clear directions for the materials used within the IKEA business. These enable us to identify the critical movements in material choice for our existing range and new product development, as well as the material innovation and development needed. Some main movements include bio-based glues for our wood-

based products, low-emission steel, aiming for 100% recycled aluminium, plastics and polyester, more sustainable cellulose-based textile fibres, and securing 100% renewable energy at our material suppliers such as board factories and paper mills.

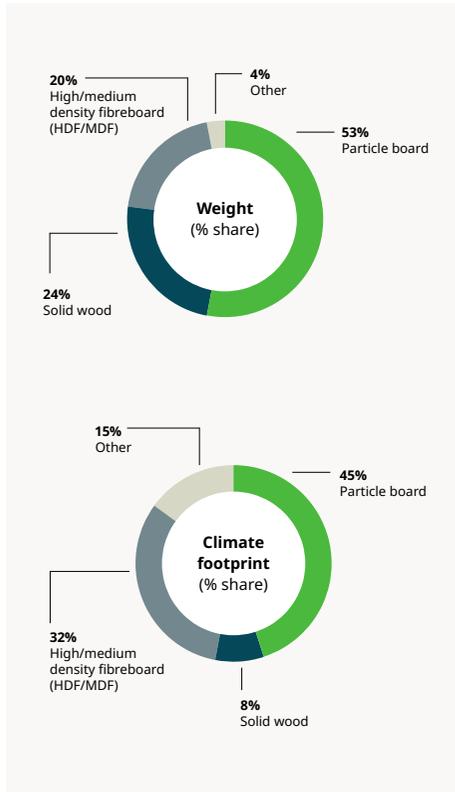
An overall challenge we face is in balancing affordability, accessibility, and sustainability. For example, in many cases switching to more recycled content, new innovative materials or emerging technologies can initially impact the end price customers pay – limiting the potential scale and impact of the solution. Even when affordable sustainable materials exist, access is often limited or the traceability of raw materials is difficult to secure. Finding the innovations and solutions that can be quickly deployed is also a challenge, as many needed solutions are still at the research stage or in need of scaling up.

Of the materials sourced in FY21, 55.8% were renewable and 17.3% were recycled.<sup>2</sup> Read more about our work with responsible sourcing of materials in the [FY21 IKEA Sustainability Report](#).

<sup>1</sup> Scope: GHG Protocol, scope 3 emissions: Purchased goods and services – raw material extraction and transports occurring until the entry gate of tier 1 home furnishing, food (packaging only), components, and catalogue and print suppliers.

<sup>2</sup> Previously, our method for reporting these figures was inconsistent, resulting in numbers that didn't fully reflect our progress. We're working on implementing a systemic measurement method. As an interim solution for this report, the figures have been calculated manually, based on material sourcing.

## Wood-based materials



Material footprint vs. material weight

**Wood is the most used material in the IKEA range. It's part of our identity and Swedish heritage and includes particleboard, fibreboard and solid wood. Today, 99.5% of all wood and paper we use comes from more sustainable sources such as Forest Stewardship Council® (FSC®) certified or recycled. We aim to improve the sustainability performance of wood even more through the **IKEA Forest Positive Agenda 2030**.**

For many wood-based materials, we use a significant amount of glue to hold wood components or fibres together. Glue used in our boards represents 5% of the total IKEA climate footprint. That's why moving towards bio-based glues is a key enabler to meeting our overall climate goal. So far, we've mapped the existing and future alternatives in terms of performance, cost and climate footprint. One bio-based system for particleboard is currently being prepared for implementation and another for fibreboard has advanced to smaller-scale production. Many more options are currently being explored, with IKEA Industry leading this development.

A big challenge with bio-based glues is that not all are compatible with our current conventional glue and application technology. A stepwise increase is therefore not possible. Instead, factories must switch entirely to bio-based glues and update their facilities and machinery/technology accordingly.



There's a further challenge in keeping costs low, as most bio-based glues are still more expensive than fossil-based glues. One main reason is that fossil-based glues have been optimised for use in the board industry for over six decades.

Another way to reduce the climate footprint of wood-based materials is by securing that board materials are produced using 100% renewable energy. The wood-based board industry already has a high share of renewable energy. Now we're developing a quantified baseline to identify gaps and take the appropriate actions to secure 100% renewable energy.

### ➔ Towards including the potential carbon removal and storage effect of wood in the climate performance framework

In addition to reducing greenhouse gas emissions, the sourcing and use of wood-based materials is also the main contributor to the removing and storing carbon agenda. During FY21, we continued to develop our capabilities to monitor the carbon removal and the storage effect from forestry and other land use systems connected to our raw material, for example by matching available data on the carbon pools in forests and land with the data we will need for a robust monitoring of our footprint.

## Paper

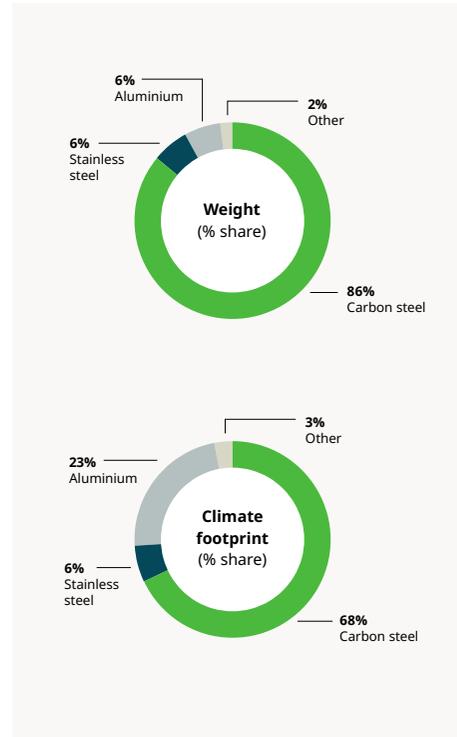
**Paper is a material that we'll be using in increasing amounts as we move towards packaging solutions and materials with better circular capabilities. Paper is renewable, recyclable and one of the most commonly recycled packaging materials globally.**

That's why paper will be a key material for the transition from plastic packaging solutions in consumer packaging. [Read more about our commitment to removing plastic from our packaging.](#)

As the number of applications for paper increases, so does the amount of paper used, as well as its climate footprint. To counter this, we are developing innovative packaging solutions. We are also exploring alternatives to fossil-based packaging components. This is the final step before reaching 100% renewable or recycled packaging material. Further, applications of paper are limited by the fact that paper is seen as a single-use material with a short lifespan. Paper is also sensitive to humidity, which limits its application in some areas of the world and in certain areas of the home.

We're also continually steering our sourcing towards paper mills with higher shares of renewable energy. By increasing the backward integration in the value chain, we're placing more production processes under an IKEA scope of influence, thereby enabling us to change these processes to more sustainable ones.

## Metals



Material footprint vs. material weight

**Although not the material used the most in the IKEA range, metals have one of the biggest climate footprints. This is due to the energy intensity of the raw material extraction and processing, and the heavy use of coal and coke in the steel industry.**

However, metal has unique properties that can't be easily substituted with other materials in products like pots and pans. The three main metal materials used in IKEA products are carbon steel, aluminium and stainless steel.

We're making good progress on a stepwise basis to increase the share of recycled content in our products. This reduces the overall climate footprint as the recycled-metals footprint is significantly smaller than the footprint of virgin metal. Additionally, we're also exploring emerging technologies to significantly reduce the climate footprint of metals, such as low emission steel – where the use of coke and coal has been nearly eliminated.

By making better material choices in the product development process, we can achieve additional reductions of the climate footprint. This ensures that we can develop more-from-less solutions, optimising material use in production, and choose the right metal for the right application, which includes selecting carbon steel over stainless steel whenever possible.

One big challenge is reaching 100% recycled metal materials. That's because most metals today already have a high share of recycled content. However, there are limitations to increasing this due to the availability of recycled metal material and the technical limitations of producing 100% recycled steel. And, as a small buyer on the market, we have less leverage to impact either of these limitations. Nevertheless, we are seeking alliances and collaborations in the industry to learn and influence as much as possible.



## Textile furnishings

### This material area includes textiles used for bed textiles, curtains, towels and other home textiles, as well as filling materials used in sofas and chairs.

Between 2017 and 2021, our total share of renewable or recycled materials, across all materials in textile furnishings, increased from 29% to 56%. Our biggest success has been with the implementation of recycled polyester in our value chain, which, by the end of 2021, was 88%. Our initial polyester agenda targeted textile products – but later expanded to include filling materials. We have also successfully launched our first ranges of recycled down and feather.

During FY21, good progress was made with the introduction of more viscose to our ranges. This helps us to reduce our dependency on cotton, as well as adding different attributes to the textile products offer.

When it comes to foam, we're on a productive journey as more types of renewable polyols are being approved, and post-consumer recycling is at its final test stage and moving into running operations. Likewise, new solutions for the wider application of bast fibres, such as hemp and jute, are now entering the IKEA product range. We see a strong potential to use these materials in their more natural form, but also blended with other materials.

The main challenge is in finding low price alternatives for textiles and filling solutions. That's why a new project was initiated to explore polypropylene to understand the potential of mechanically recycled materials and align with the IKEA plastic agenda to map gaps in order to meet renewable solutions.



### → New production processes and materials

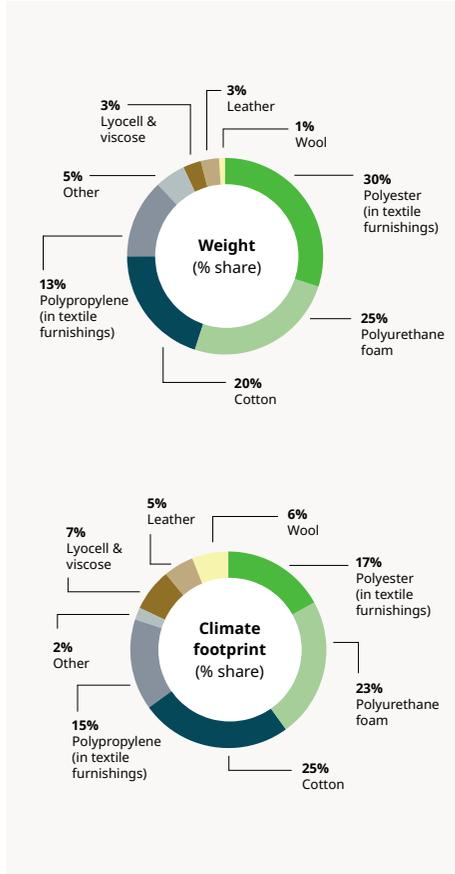
The VEDBO armchair was originally made using moulded foam and metal frame components. A new design for the chair, made with a compressed moulded shell that uses 50% recycled polypropylene and 50% hemp fibre to minimise components and use more sustainable materials, is now being piloted in Russia.



### → Increasing the share of recycled polyester in our supply chain

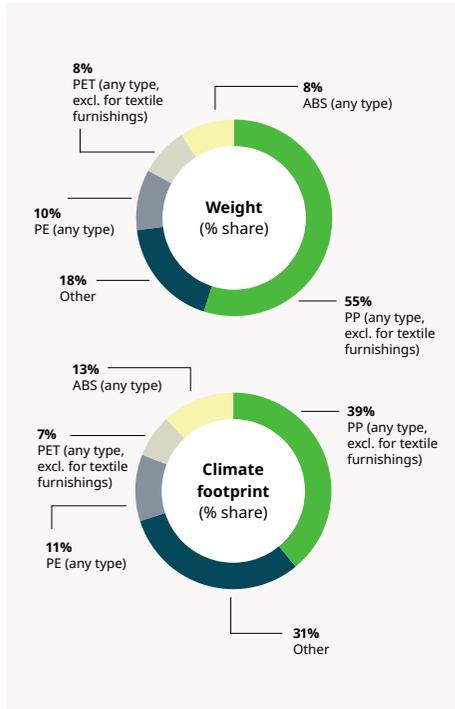
In 2020, we reached the milestone of 90% recycled content in textile products made of polyester. Part of our ambition is to not be dependent on virgin fossil-based materials. Now, we've widened our measurement scope to include all polyester in fibre applications, excluding rigid plastic but including all fibre-based applications, such as filling. Even with this wider scope, we've still ensured that 88% of the polyester in our supply chain is recycled.

The impact of the amount of virgin polyester we replaced with recycled in FY21 reduced the climate footprint of our polyester use by about 45%. That saved about 271,000 tonnes of CO<sub>2</sub> eq emissions.



Material footprint vs material weight

## Plastics



Material footprint vs. material weight

**Plastics are found throughout the IKEA offer – from products like the MAMMUT chair, to applications in electronics, foil and edge bands on particleboard, fittings, and as packaging material.**

We're continuing to convert the plastics we use to recycled or renewable for both existing products and when developing new products. However, since these recycled or renewable materials can have different properties, some level of product development is needed, rather than only re-sourcing the material. In the short term, we continue to use more post-industrial feedstock to convert to recycled materials. From FY25 onwards, we will begin to use more post-consumer – rather than just pre-consumer – and renewable feedstock in our range while we develop innovations in materials and technologies to meet our 2030 goals. As of January 2020, all single-use plastic products have been removed from the IKEA home furnishing range globally. We also aim to phase out plastic from consumer packaging by 2028.

Our main challenges include the affordability of, and accessibility to, the right feedstock, as well as the right technical solutions on a commercial scale, especially for our four key plastic materials: polypropylene (PP), polyethylene (PE), polyester (PET) and acrylonitrile butadiene styrene (ABS). Another challenge is determining the climate footprint of renewable plastics, which is highly dependent on the type of feedstock, management practices, location and process steps.



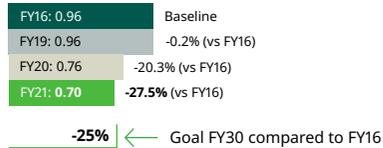
### → HÅLLBAR waste bins

HÅLLBAR waste bins are made of post-consumer recycled material collected from household packaging waste on a commercial scale. 40% is from post-consumer waste and 40% from pre-consumer waste.

# Food ingredients

(2.7% of the total IKEA value chain climate footprint in FY21)

Climate footprint (million tonnes CO<sub>2</sub> eq)<sup>1</sup>



## Goal FY30

Reduce the food-related GHG emissions in absolute terms by 25%, or a 38% relative reduction in food-related GHG emissions per calorie, compared to FY16.<sup>2</sup>

## Sub-goals 2025

- 50% of main meals offered in the restaurants will be plant-based.
- 80% of all packaged food offered will be plant-based.
- 80% of main meals offered in the restaurants will be non-red meat.

## Sub-goal 2022

- Cut food production waste by 50% in all IKEA stores globally.

**In FY21, IKEA restaurants and other food service touchpoints continued to operate at a reduced capacity due to COVID-19, while IKEA Swedish Food Markets remained open. This impacted the overall sales of food, which in turn also reduced the absolute climate footprint.**

To better track the development, the relative climate footprint per kilogram of food ingredient is a better indicator for FY21. This has decreased by 13.4% (excluding drinking water sold) since the baseline FY16.<sup>3</sup>

The positive development in relative terms is supported by trends in the share between plant-based and meat-based food options. For example, the volume of beef and pork sold in relation to other food ingredients (excluding drinking water) decreased from 15% in FY20 to 14.3% in FY21, while the sales of plant balls and veggie balls in restaurants increased from 11% to 14% in sales share within the HUVUDROLL range and from 13% to 24% in the Swedish Food Market – mainly due to the launch of the plant ball. For the veggie hot dogs sold in the bistro, it increased from 10% to 13% sales share of all hot dogs sold in IKEA bistros.

Until we have the digital system in place to measure full meal composition across the entire IKEA food range, we will not be able to confirm whether the sub-goals for 2025 have been achieved.

In FY21, we reached a waste reduction of 46%.  
Read more, [page 23](#).



## ➔ HUVUDROLL – a plant-based alternative to the classic IKEA meatball

In FY21, we launched the HUVUDROLL plant ball, which has only 4% of the climate footprint of ingredients compared to the ingredients of the iconic IKEA meatball<sup>4</sup> – without compromising taste or price. We sold 3% more plant and veggie balls in FY21 compared to FY20. Apart from gaining sales share from meat-based options, the plant ball also took sales shares from the veggie ball which sold 50% less compared to the total share of sales during FY21 compared to FY20.



## ➔ VÄRLDSKLOK – a plant-based alternative to minced meat

In FY21, we launched VÄRLDSKLOK, a plant-based mince. As with HUVUDROLL, our plant-based meatball alternative, VÄRLDSKLOK is based on pea-protein and will provide a similarly small climate footprint.

<sup>1</sup> Scope: GHG Protocol, scope 3 emissions: Purchased goods and services – raw material extraction and processing of food ingredients up until the entry gate of tier 1 food suppliers.

<sup>2</sup> In line with our commitment to the Cool Food Pledge of the World Resources Institute.

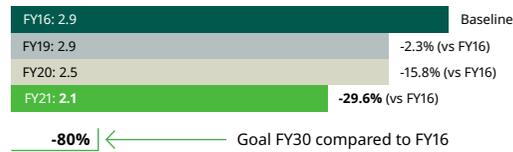
<sup>3</sup> To enable an accurate comparison, drinking water is excluded this year. Drinking water normally stands for more than half of the total tonnes of food sold, but as restaurants and bistros have been running at reduced capacity, less water has been sold, affecting the ratio with the Swedish Food Market where packaged food is sold.

<sup>4</sup> Footprint is for meatball ingredients.

# Production

(7.9% of the total IKEA value chain climate footprint in FY21)

Climate footprint (million tonnes CO<sub>2</sub> eq)<sup>1</sup>

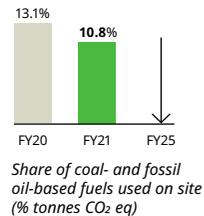


## Goal FY30

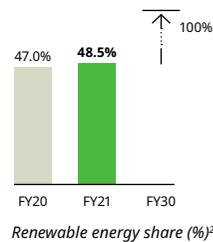
By 2030, reduce the absolute GHG emissions from production by 80% compared to FY16.

## Sub-goals

- By 2025 at the latest, phase out all coal- and fossil oil-based fuels used on-site in production where feasible, significantly reducing the climate footprint and improving air quality.



- Strive towards 100% renewable energy (electricity, heating, cooling and fuels) in production by 2030.



Despite the continuing challenges of COVID-19 during the year,<sup>3</sup> significant progress was made in GHG reductions in the production of IKEA products. We achieved a 16% decrease of the total production footprint since FY20, with wood-based furniture suppliers delivering a 22% reduction.

To drastically reduce GHG emissions from production, we focus on the following movements:

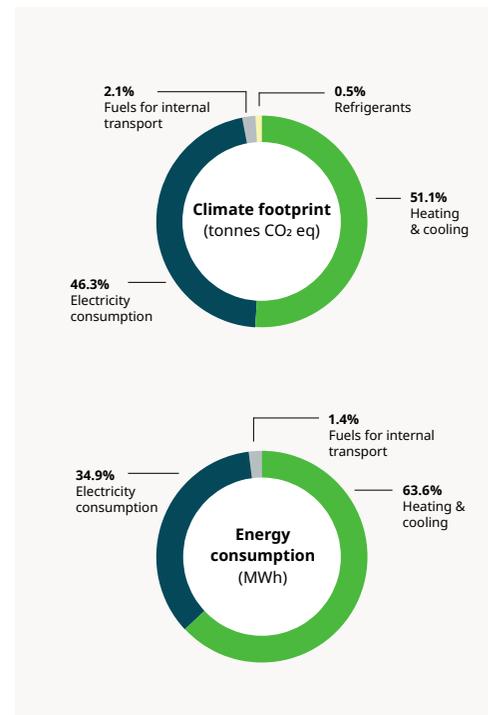
- Striving towards 100% renewable energy
- Phasing out coal- and fossil-oil based fuels used on-site

To enable these, we support our supply partners by financing the on-site generation of renewable energy and the purchase of 100% renewable electricity.

<sup>1</sup> Scope: GHG Protocol, scope 3 emissions: Purchased goods and services – scope 1 & 2 emissions and connected scope 3: fuel- and energy-related activities (incl. transmission and distribution losses) of tier 1 home furnishing, food, components, and catalogue and print suppliers.

<sup>2</sup> To secure consistency with data reported by our external suppliers, data covers the calendar year 2020. Therefore, it does not capture the achievement from 1 January to secure 100% renewable electricity for IKEA Industry and IKEA Components units in Russia and China.

<sup>3</sup> As the climate footprint for production is measured on a calendar year (the climate footprint for other parts is the financial year), this reporting period covers calendar year 2020 and is therefore the first climate footprint reporting in which the impact of COVID-19 is seen.



Production energy footprint vs. energy use<sup>4</sup>



<sup>4</sup> Excludes food suppliers due to breakdown in emission categories not available for these suppliers. Food production accounts for 3% of total production footprint.

## Striving towards 100% renewable energy

### Between FY20 and FY21, we saw significant steps in the use of renewable energy for the production of IKEA products – increasing from 47% to 48.5%.

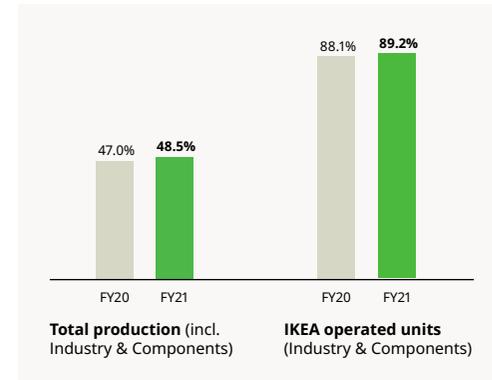
A main driver of this result has been our external wood-based furniture suppliers, where the share of renewable electricity increased from 52.9% in FY20 to 61.8% in FY21. Compared to last year, an additional 18 factories or suppliers have achieved 100% renewable electricity consumption, moving the total to 129. We still have a challenge within textile furnishing production, as the renewable energy share decreased to 15.2% in FY21 compared to 15.8% in FY20.

While more suppliers are achieving 100% renewable electricity, access to it remains a challenge for most. We hope to address this with the launch of our programme to enable the purchase of renewable electricity, starting with the countries where we face a large climate footprint and big challenges in accessing renewable electricity by purchasing it from the grid.

For our own factories operated by IKEA Industry, the share of renewable energy (electricity, heating and fuels) reached almost 90% in the calendar year 2020. A big part of this increase was achieved with the purchase of 100% renewable electricity for the Russian factories of IKEA Industry starting 1 September 2021. As of 1 January 2021, we have also secured 100% renewable electricity for IKEA Industry and IKEA Components units in China, meaning that

all global operations by IKEA Industry and IKEA Components now only consume 100% renewable electricity – a huge milestone.

But, consuming 100% renewable electricity is not enough. We want to make sure renewable electricity is also generated on-site at our units to make more renewable energy available to the many people. To achieve this, there are a few big challenges: One challenge is linked to the legal permit process for solar panels in Poland, which is delaying the implementation of additional on-site installations. Another limitation is the applied tax for any installation above 0.5 MW in Sweden, which restricts the business case, especially when compared to other EU countries.



Renewable energy share FY21 (%)<sup>1</sup>

### ➔ Accelerating suppliers' transition to 100% renewable electricity

In FY21, the IKEA business launched a new programme to accelerate suppliers' transition to 100% renewable electricity. The programme supports 1,600 direct suppliers and will first be introduced in three of the largest purchasing countries: Poland, China and India. Achieving 100% renewable electricity in these countries will save an estimated 451,000 tonnes of CO<sub>2</sub> emissions per year, equivalent to approximately 2% of the total climate footprint of the IKEA value chain.

In this effort, we will provide local solutions, such as framework agreements and power purchase agreements (PPAs) to buy renewable electricity from the grid, enabling direct suppliers to consume 100% renewable electricity in their production. This will cover the electricity demands of the suppliers that can't be generated on-site. An important aspect of this is that the IKEA business will enable 100% renewable electricity for the entire factory and that it will be the supplier who will be on the contract. This approach differs from other practices where companies purchase renewable energy certificates on behalf of their suppliers and their production share for the specific company – limiting the actual societal impact. Our approach is one of the ways we go beyond IKEA and contribute with additional reductions in society. [Read more.](#)

<sup>1</sup> To ensure consistency with data reported by our external suppliers, data covers the calendar year 2020. Therefore, it does not capture the achievement from 1 January to secure 100% renewable electricity for IKEA Industry and IKEA Components units in Russia and China.

## Phasing out coal- and fossil oil-based fuels used on-site

**By 2025, our goal is to phase out coal- and fossil oil-based fuels used on-site in the production of our products.**

Today, a big challenge is to find alternative solutions, especially in textile production and in countries where subsidies for coal-based fuels are high, for example, in Pakistan, India, Indonesia, Turkey and China. To solve this, we're exploring and testing solutions with companies offering promising new technologies.

Overall, progress is being made. Between FY20 and FY21, the use of coal- and fossil oil-based fuels on-site decreased from 13.1% to 10.8%; and from 15.3% in FY16. In FY21, we managed to phase out all coal for ceramic production and at three textile suppliers. This has a significant impact on the climate footprint, especially for textile suppliers that have a high use of coal, as coal has a much higher footprint than natural gas. However, in both cases, it's difficult to credibly state the reduction in climate footprint because the production volume also decreased due to the impact of the COVID-19 pandemic.



## Financing for the on-site generation of renewable energy

**In December 2019, we announced EUR 100 million in financing for the on-site generation of renewable energy. This provides discounted loans to our suppliers, enabling investments to speed up the transformation to 100% renewable energy.**

During FY21, we received eight business cases. Of these, six have been for the installation of solar panels, one for the electrification of a production process, and one for an on-site combined heat and power plant at IKEA Industry using a new innovative technology from Meva Energy AB.

In total, there have been applications for about EUR 14 million of the EUR 100 million and EUR 7.4 million have been, or are in the process of being, approved.

The investments for the on-site generation through solar panels will generate 27.5 GWh of additional renewable energy per year and a reduction of 5,500 tonnes of CO<sub>2</sub> eq per year. In addition, the investment in electrification will convert 467 GWh into renewable energy and achieve a further reduction of 90,700 tonnes of CO<sub>2</sub> eq. Because two suppliers are already consuming 100% renewable electricity, the on-site generation by solar panels will

allow some of the currently purchased renewable electricity to be available for others.

The reason for the relatively low number of business cases during FY21 is that suppliers were heavily affected by COVID-19 and had to focus on managing production rather than long-term investments. After a slow start, there are more business cases in the pipeline, and we're working to further raise awareness of the financing offer and its benefits to our suppliers.

It's especially important for us to gain business cases that address energy intensive processes such as glass furnaces, ceramic kilns, boilers for heating and steam, and surface treatments as these represent a very large part of the climate footprint in production and require large investments to address. In many cases, it requires electrification of the processes. All but one case have been in Europe, so greater geographical diversity is also needed.

<sup>1</sup> Scope: GHG Protocol, scope 3 emissions: Purchased goods and services – scope 1 & 2 emissions and connected scope 3: fuel- and energy-related activities (incl. transmission and distribution losses) of tier 1 home furnishing, food, components, and catalogue and print suppliers.

# Product transport

(4.3% of the total IKEA value chain climate footprint in FY21)

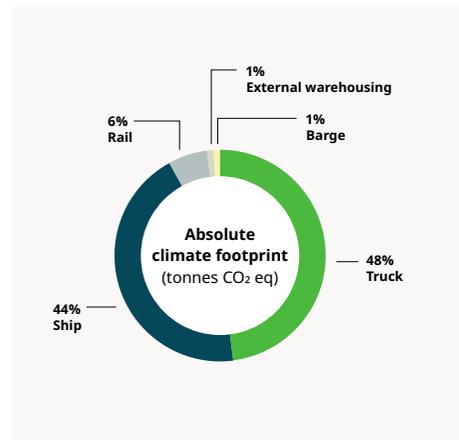
## Climate footprint (million tonnes CO<sub>2</sub> eq)<sup>1</sup>

FY17: 1.14	Baseline (FY17 due to incomplete FY16 data)
FY19: 1.13	-0.8% (vs FY17)
FY20: 0.98	-13.9% (vs FY17)
FY21: 1.11	-2.8% (vs FY17)

-15% ← Goal FY30 compared to FY17

## Goal FY30

By 2030, reduce our absolute GHG emissions from product transport by 15% compared to FY17.



## In FY21, the climate footprint for product transport decreased in absolute terms by 2.8% compared to the baseline year FY17.<sup>2</sup>

Compared to FY20, the absolute climate footprint actually increased by 12.9% because we transported more during FY21 as the world began to recover from the COVID-19 pandemic. The relative emissions per shipment remained at nearly the same level of 0.018 kg of CO<sub>2</sub> eq per tonne and km transported in FY21 compared to FY20. On a positive note, our relative emissions for land transport decreased by 2.2% compared to FY20 due to an increase in intermodal solutions from 41% to 45%. We also managed to maintain the filling rates of our containers.

To drastically reduce GHG emissions from the transportation of our products, we focus on the following movements:

- Maximising efficiency during transportation
- Going fossil free
- Switching to zero-emissions solutions

Supply chains worldwide continue to face huge challenges due to the pandemic. This impacts the transport industry, raw materials, sourcing and production. These challenges also impact the IKEA business with major constraints connected to our transport capacity.

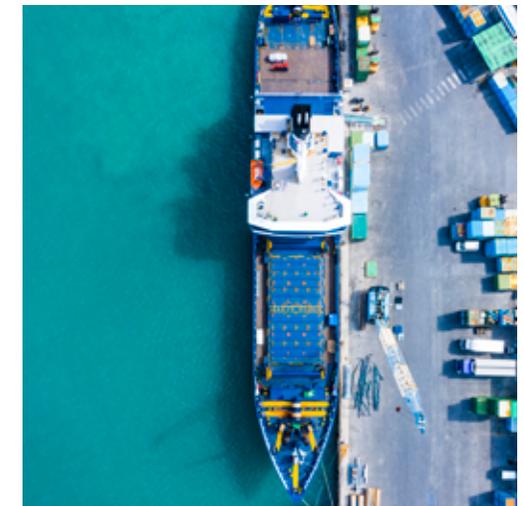
During FY21, the use of biofuels in ocean shipping did not progress in line with our expectations. This was mainly due to the turbulence in the transportation industry and constant network adjustments, followed by high-cost pressures from the supply chain challenges. As a result, the overall share of alternative fuels decreased from 3.3% to 0.8%.

We need to accelerate the transformation towards zero-emissions ocean shipping. By collaborating with like-minded companies, we can create positive movements in that direction. That's why, in October 2021, we joined forces with several global companies in signing the 2040 ambition statement through the collaborative platform [Cargo Owners for Zero Emission Vessels](#), facilitated by the Aspen Institute. The ambition statement makes it clear that global transport buyers want zero-carbon shipping and rapidly accelerating decarbonising efforts. With this ambition statement, we want to demonstrate our determination to reach set targets and reassure stakeholders of the direction of our common decarbonising journey ahead.

For electrification to happen, collaboration is needed across the value chain to scale up the development of infrastructure, technology, sustainable energy sources and financing solutions. In 2020, we joined the [World Economic Forum's Road Freight Zero \(RFZ\)](#) initiative to be an active part of the electrification movement. Together with other demand- and

supply-side actors – such as leading manufacturers, retailers, logistics providers, fleet operators, finance companies, academia and civil society – we are collaborating to define pathways to accelerate the roll-out of zero-emissions freight vehicles.

In Europe, we're intensifying our efforts to drive change on the policy level. We're members of the [European Clean Trucking Alliance](#), for example, which drives the development, implementation and support of future-proof policies, programmes and initiatives to create an ecosystem that shifts from fossil-fueled vehicles to vans and trucks with zero tailpipe emissions.



<sup>1</sup> Scope: GHG Protocol, scope 3 emissions: Upstream transportation and distribution and connected fuel- and energy-related activities of tier 1 product transport suppliers.

<sup>2</sup> FY17 due to incomplete FY16 data

## Maximising efficiency during transportation

**In addition to electrification and the increased use of alternative fuels, we are continuously working to shift more and more goods to intermodal alternatives such as rail, short sea or barge transports. On average, such movements can usually halve the climate footprint of a route.**

Moreover, intermodal solutions support the work-life balance of truck drivers by shortening the routes needed for trucks. This also results in easing road congestion, and less air and noise pollution. Between FY20 and FY21, we increased the share of intermodal transports from 41% to 45%. The increase was mainly in Russia, Italy and the Baltics.

Another way to improve the efficiency of the logistics network is to transport larger volumes with each transport, reducing the number of trucks needed. That's why we're increasing the number of bigger trucks we use in Europe and Asia, as well as moving from standard trailers to solutions with higher capacities. By transporting higher volumes with each transport, the GHG emissions are reduced as fewer trucks are needed. We're also continually optimising our network to find the shortest distances and most efficient routes to reduce the climate footprint.

## Going fossil free



Even though the share of biofuels remains small in our land transport network, we have increased it from 0.3% (FY20) to 0.8% (FY21).

In FY21, we achieved 100% biofuels use for all domestic deliveries and carriage movements in the United Arab Emirates, a transition we began in 2018. The biofuel is produced from used cooking oil collected in the local market. By using 100% biofuel, we reduced our climate footprint for those transports by 84% compared to fossil diesel, or 280 tonnes of CO<sub>2</sub> eq. Similarly, in the Netherlands, our service provider switched to 100% biofuel made from waste and residue. This resulted in a 90% reduction in the climate footprint of diesel, reducing it by 2,900 tonnes of CO<sub>2</sub> eq. We moved 70% of the transport volumes between Lithuania and Sweden to liquified biogas (LBG). This setup will save about

644 tonnes of CO<sub>2</sub> eq. Apart from being key milestones, these developments also show how replacing fossil-based fuels are often local solutions based on the availability of biofuels and the infrastructure.

We also have several warehouses where transported goods are consolidated before being sent to IKEA stores or distribution centres. During FY21, we managed to secure 100% renewable electricity for three of our consolidation points in Poland, Lithuania and Romania, where all heating, lighting and electric forklifts now operate on renewable energy.

## Switching to zero-emissions solutions

**In addition to going fossil free, we see the long-term need to switch to zero-emissions solutions, such as electrification.**

In FY21, we now have four heavy-duty electric vehicles (EV) operating within some of our transport flows in China. Charging for these vehicles happens at IKEA stores and at our external warehouse providers. Eight additional vehicles will be deployed by the end of the 2021 calendar year, setting the scene for further expanding the electrification of heavy duty road transport.

The electrification agenda is also important for rail transport. In Germany, for example, one of our service providers switched from truck to rail, powered by 100% renewable electricity. This move reduced the climate footprint by 1,100 tonnes of CO<sub>2</sub> eq compared to using diesel trucks. In addition to drastically reducing our GHG emissions, it also contributes to reducing air pollution and congestion on the roads by removing heavy trucks from the roads.

# IKEA retail & other operations

(2.3% of the total IKEA value chain climate footprint in FY21)

Climate footprint (million tonnes CO<sub>2</sub> eq)<sup>1</sup>

FY16: 0.53	Baseline
FY19: 0.60	+12.7% (vs FY16)
FY20: 0.60	+12.6% (vs FY16)
FY21: 0.59	+11.4% (vs FY16)

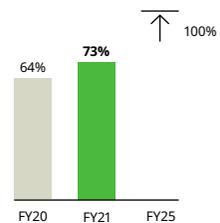
-80% ← Goal FY30 compared to FY16

## Goal FY30

By 2030, reduce the absolute GHG emissions from retail and other own operations by 80% compared to FY16.<sup>2</sup>

## Sub-goal

By 2025, consume 100% renewable electricity in retail and other own operations and IKEA owned factories.<sup>3</sup>



Renewable electricity share (%)

**While the climate footprint of IKEA retail and other operations is still larger than the baseline FY16, it has decreased compared to FY20.**

This was mainly due to an increase in the share of renewable electricity from 64% to 73% between FY20 and FY21, which was driven by those of our retail markets that achieved 100% renewable electricity in FY21: Canada, Denmark, Estonia, France, Russia, Serbia, Slovenia, Spain (the Canary and Balearic Islands), and markets where we made significant progress such as United Arab Emirates (+24.3 percentage points).

Conversely, the non-electricity energy consumption such as heating, cooling and fuels decreased from 17% to 15% renewable energy share between FY20 and FY21, compared to 17% at the baseline FY16. This decrease was mainly driven by retail expansion where new stores don't yet have 100% renewable heating and cooling solutions in place. That's why the focus is on securing 100% renewable electricity by 2025 and at the same time addressing energy used for heating and cooling – the latter of which often requires large investments because it's often generated on-site through technologies such as ground and air-source heat pumps and biogas/biomass boilers.



<sup>1</sup> Scope: GHG Protocol, scope 1 & 2 emissions and scope 3: Fuel- and energy-related activities (incl. transmission & distribution losses) of Inter IKEA Group operations (excl. production at IKEA Industry and IKEA Components) and IKEA retail part of our franchisees' business. This therefore includes scope 3: Franchises.

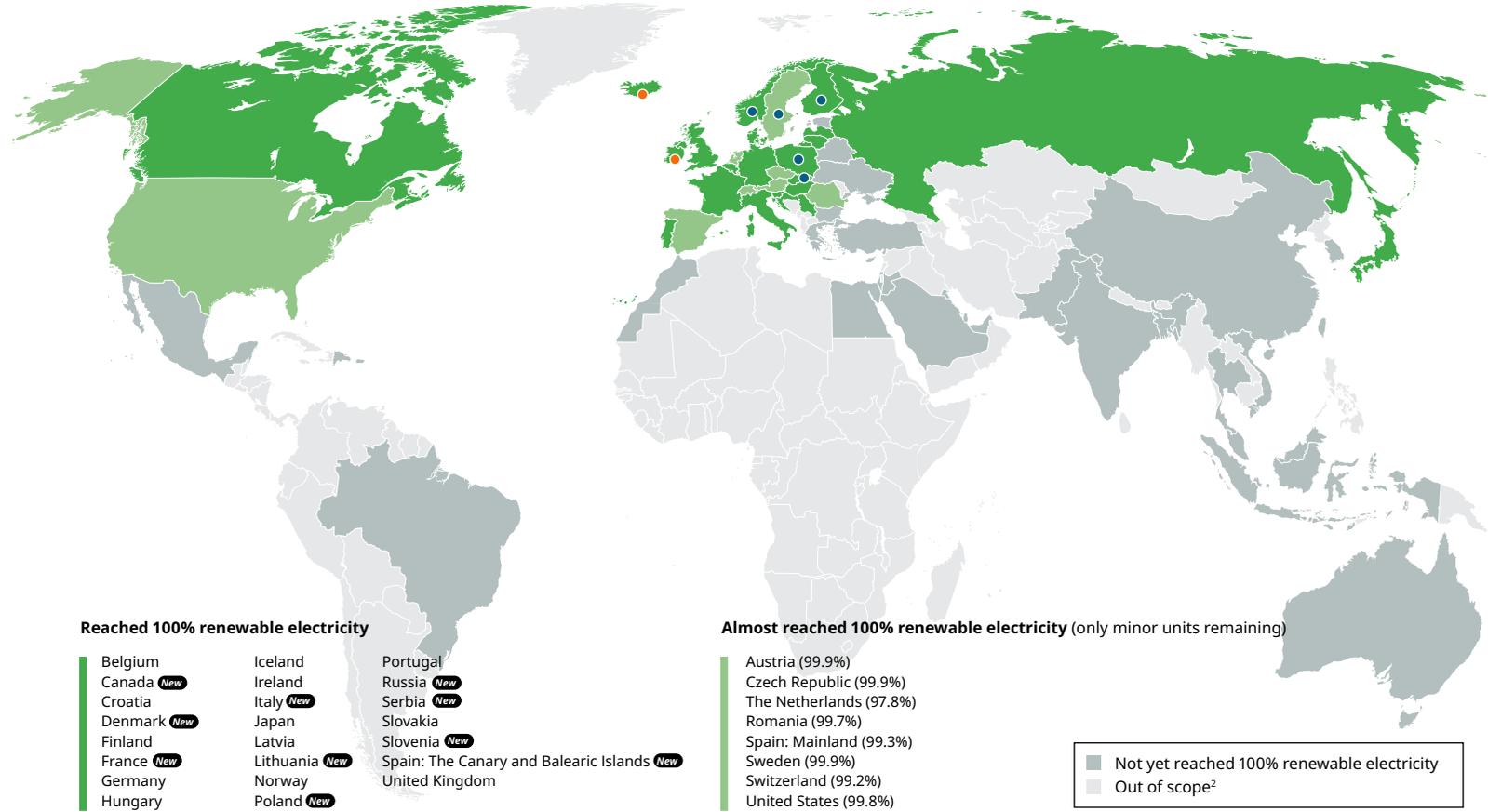
<sup>2</sup> Scope: Inter IKEA Group and the IKEA retail business of Ingka Group.

<sup>3</sup> Scope: Inter IKEA Group (excl. production at own units of IKEA Components and IKEA Industry) and the IKEA retail business of Ingka Group (scope 1 & 2).

## Striving towards 100% renewable energy for IKEA operations<sup>1</sup>

To become climate positive, we're striving towards 100% renewable energy for all IKEA operations (stores, warehouses, factories, offices and other operations) in every country. In FY21, 23 IKEA markets are consuming 100% renewable electricity (compared to 14 in FY20). For heating and cooling, only seven IKEA markets are today at, or almost at, 100%.

In FY21, 231 IKEA stores have installed solar panels. IKEA Retail Turkey initiated a project to invest in solar panels on all nine IKEA stores, starting with the biggest store in Ankara, to cover 60% of its electricity consumption. As the buildings are sometimes owned by others besides the IKEA business, this requires collaboration.



<sup>1</sup> Includes IKEA retail and other operations, as well as IKEA Industry and IKEA Components units covered in the production footprint.

<sup>2</sup> IKEA retail Philippines opened in Nov 2022 and is therefore out of scope for the FY21 reporting.

## Investing in off-site renewable electricity generation



**The IKEA franchisee Ingka Group (the largest franchisee) owns and manages 547 wind turbines in 14 markets, two solar parks and 935,000 solar panels on the roofs of IKEA stores and warehouses.<sup>1</sup>**

In FY21, the IKEA franchisee Ingka Group completed the acquisition of three new wind farms in Finland to support its renewable energy generation. It now owns five wind farms in Finland that produce a combined 520 GWh of renewable energy annually, and since 2017 has generated as much energy as IKEA Retail Finland consumes. [Read more.](#)

Ingka Group also acquired a 49% stake in eight solar parks in South-Western Russia, which have an energy capacity of 160 MW, providing enough electricity to power all 17 IKEA stores in Russia. [Read more.](#)

## Reducing food waste



**Our goal is to cut food production waste by 50% by the end of 2022 in all IKEA stores globally (compared to FY17). In FY21, food waste solutions have been implemented in more than 86% of all IKEA stores globally (60% in FY20), resulting in a waste reduction of 46% compared to baseline (32% in FY20 compared to baseline).**

This was achieved through a food waste measurement solution that uses a smart scale: a tool to measure the production of food waste in IKEA restaurants, bistros and Swedish Food Markets around the world.



### Retail alliance for a 1.5°C future

The IKEA franchisee Ingka Group, together with H&M, Kingfisher and Walmart, is a founding member of a retail alliance borne out of UNFCCC's Race to Zero. The aim of the alliance is to drive greater climate action in the retail industry. [Read more.](#)

<sup>1</sup> Net amounts of wind turbines and panels based on the equity share for the offshore wind farm and the solar farms.

# Co-worker commuting & business travel

(0.6% of the total IKEA value chain climate footprint in FY21)

Climate footprint (million tonnes CO<sub>2</sub> eq)<sup>1</sup>

Baseline	FY16: 0.21
+0.8% (vs FY16)	FY19: 0.22
-31.9% (vs FY16)	FY20: 0.15
<b>-30.8% (vs FY16)</b>	<b>FY21: 0.15</b>

## Goal FY30

Reduce the GHG emissions from co-worker travel by 50% in relative terms per co-worker compared to 2016.<sup>2</sup>



## The climate footprint from co-worker travel decreased by 30.8% compared to FY16.

Co-worker commuting and business travel were affected heavily during the COVID-19 pandemic, as stores were temporarily closed and many worked from home, while business travel was restricted to business-critical travel. In FY21, more stores were kept open compared to FY20. Since most co-workers work in the stores, the climate footprint from co-worker commuting increased by 2.6% compared to baseline FY16, after being reduced by 18.6% in FY20. Business travel is still restricted and has therefore been reduced by 92.3% compared to baseline FY16. In this new normal, it's difficult to draw any conclusions about the progress versus the set goal.

## ➔ New guidelines for reducing business travel

As co-workers have found new ways to meet and interact through video meetings, Inter IKEA Group Meet & Travel conducted surveys in 2020 and 2021 to help understand the need for future business travel. The findings of these surveys indicate that, in general, co-workers want to reduce the amount of time they travel for business. With this in mind, a strategy to help achieve this goal has been developed. New guidelines and principles have been issued, which include limiting air travel in general, limiting short-stay travel,

travelling less for purely internal purposes, and changing the way we deal with large events. We're also working to educate our co-workers by building a sustainable travel hub, which will include general information about how air travel impacts the world. For example, fuel consumption is highest during take-off and landing. Therefore, short-haul flights produce more emissions per mile travelled than any other form of transport. In addition, a project to include climate footprint reporting in travel dashboards to highlight the impact from business travel is ongoing.

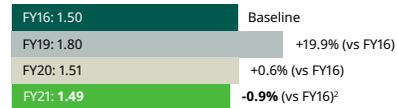
<sup>1</sup> Scope: GHG Protocol, scope 3 emissions – category 6: Business travel of Inter IKEA Group and IKEA retail part of Ingka Group, scope 3 emissions – category 7 employee commuting of Inter IKEA Group and IKEA retail part of Ingka Group

<sup>2</sup> Scope: Inter IKEA Group and the IKEA retail business of Ingka Group

# Customer travel & home deliveries

(5.7% of the total IKEA value chain climate footprint in FY21)

## Climate footprint (million tonnes CO<sub>2</sub> eq)<sup>1</sup>

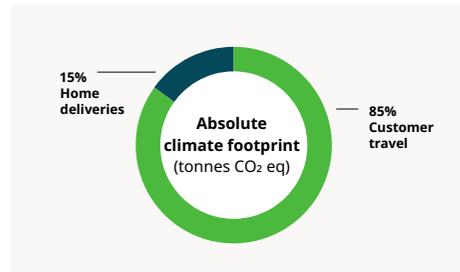
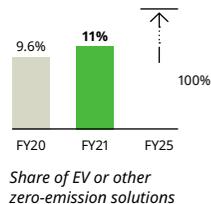


## Goal FY30

By 2030, reduce the GHG emissions from customer travel and home deliveries by 50% in relative terms (per store customer) compared to 2016.<sup>2</sup>

## Sub-goals

By 2025, aim for 100% of transport for customer deliveries and services to use electric vehicles (EV) or other zero-emission solutions.<sup>3</sup>



## The climate footprint from customer travel and home deliveries has decreased by 0.9% in absolute terms compared to FY16.

While the climate footprint from customer travel and home deliveries decreased in absolute terms by 0.9% in FY21, compared to baseline FY16, it has continued to increase in relative terms each year apart from FY20. To break the trend, it's critical to find more sustainable ways for customers to reach IKEA stores and meeting points. For example, in FY21 we reached the goal of installing EV charging stations at all stores in 32 markets. The aim is to encourage more customers with electric vehicles to visit. While the effect of this is still to be determined, as it's currently not possible to follow up using the existing model to calculate the climate footprint from customer travel, it's still a positive movement.

This year, we have improved the model for customer travel and are now able to measure it for all IKEA markets, whereas previously we were only able to measure it for the IKEA franchisee Ingka Group, while estimating it for the others. Going forward, we will explore a revision of the calculation model for customer travel to address the change in how we meet customers. Today, we're increasingly driving

visitation to customer meeting points such as stores and planning studios, while a customer can make the purchase at another meeting point or at home instead. It's therefore important to calculate the impact from the number of visitors and how they travel, rather than customers. Similarly, there are more and more ways to get a product delivered, such as Click-and-Collect. Progress on this will be shared in next year's IKEA Sustainability Report.

Although the share of deliveries made via electric trucks increased from 9.6% to 11%, the climate footprint from home deliveries increased by 46% in absolute terms between FY20 and FY21, as the impact from increasing numbers of home deliveries was larger than the impact from converting to EV home deliveries.

## More accessible inner-city IKEA store opens in Vienna

The new inner-city [IKEA Westbahnhof store](#) in central Vienna opened on 21 August and is the first inner-city store to offer a full range of IKEA products. The entire building is designed for pedestrians, users of public transport and cyclists. For larger items, the store offers same-day delivery via electric trucks, so customers can leave their cars at home. Customers can also hire an E-Cargo bike, a service run by a local NGO that helps long-term unemployed people to re-enter the labour market. [Cargo bike rental](#) is also available at city centre stores in Germany and Spain.



## Towards zero-emissions home deliveries

To reach the 2025 goal (see graph at left), the rollout of electric vehicles must increase significantly. This is a challenge, as the pandemic has caused delays in manufacturing, meaning we have not received all the electric vehicles ordered. Nevertheless, the expectation is to significantly increase the electric truck fleet next year and to reach 29% of home deliveries via EVs by the end of FY22.

The over 500 electric trucks now in use across 22 markets (19 markets in FY20) is proof that the technology works and is why the focus is now on scaling up across more markets. 100% electric deliveries has already been achieved in a number of cities, including Amsterdam and Shanghai, and 95% of all deliveries in China were made using zero-emissions trucks. [Read more.](#)

<sup>1</sup> Scope: GHG Protocol, scope 3 emissions: Downstream transportation and distribution of Inter IKEA Group operations and IKEA retail part of our franchisees' business.

<sup>2</sup> Scope: Inter IKEA Group and the IKEA retail business of Ingka Group.

<sup>3</sup> IKEA retail operations of Ingka Group.

# Product use at home

(17.1% of the total IKEA value chain climate footprint in FY21)

Climate footprint (million tonnes CO<sub>2</sub> eq)<sup>1</sup>



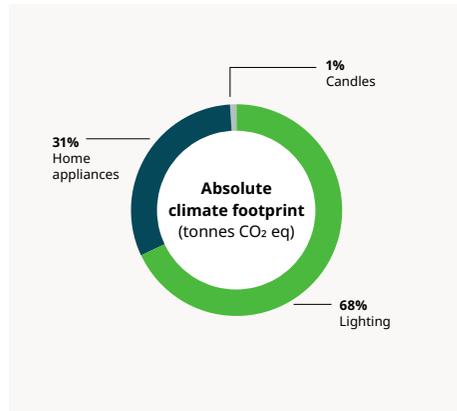
## Goal FY30

Under development because the previous goal has been met and we're now assessing the impact of new EU legislation on energy efficiency.

## The second-largest portion of the IKEA climate footprint comes from the use of products at customers' homes.

This is mainly from the electricity consumption needed to power products such as lighting and home appliances. A minor part of the climate footprint comes from gas-driven hobs, refrigerants used for refrigerators and freezers, and the burning of candles at home.

Since FY20, the climate footprint from product use at home decreased by 3%. This was mainly due to a positive trend in the continued improved energy efficiency of our LED bulbs offset by an increase in sales as the IKEA business began to recover from the impact of the COVID-19 pandemic. Apart from our own development, the average amount of renewable electricity that customers consumed across all markets has increased by 5 percentage points since the 2016 baseline. This highlights the importance of engaging externally and advocating for policies and regulations that enable our customers to consume renewable electricity at home. With a stronger development in the share of renewable electricity in country power grids, the climate footprint in customers' homes would be significantly smaller.



<sup>1</sup> Scope: GHG Protocol, scope 3 emissions: Use of sold products and connected fuel- and energy-related activities (incl. transmission & distribution losses).

## Lighting

### The main contributor to the climate footprint of products used at customers' homes comes from the electricity consumption of our lighting range.

Although the IKEA lighting range has included only energy-efficient LEDs since 2015, we always see room for improvement, making an already great product even better. We have therefore developed a roadmap with clear goals and actions

to continually improve the energy efficiency of our range in terms of lumens-per-Watt (lm/W) by 2030, while maintaining a well-designed and affordable offer. Since 2016, the energy efficiency has improved by 46.4% and the climate footprint has been reduced by 38.2%. This means that for each consumed kWh of electricity, more light is generated and less is lost as heat.



### → New, more affordable and energy-efficient LED bulbs

A major milestone in our roadmap is the new LED bulb SOLHETTA, which was launched in October 2021. SOLHETTA is significantly more energy-efficient than the LEDARE and RYET ranges it replaces, enabling reduced electricity consumption at home for more people. [Read more.](#)

## Home appliances

**Since 2016, the climate footprint of IKEA home appliances used by customers at home has decreased by 4.9%.**

This is mainly the result of the improving energy efficiency of appliances on average by 7.1% (kWh per year), while sales have increased by 15.7%. Dishwashers, extractor hoods, hobs and combined fridge-freezers are good examples of range areas where our offer is significantly more efficient than in previous years (in kWh used per year).

As with our lighting range, we have developed a roadmap with goals for 2030 and clear activities for how to reach them. That's one reason why we'll be introducing more energy-efficient gas hobs, achieved through new technologies, over the coming years. Although gas hobs use natural gas – a fossil fuel – we believe it's important to keep this option in our range as limitations in local infrastructure do not always allow for electric alternatives.

One challenge we have in offering energy efficient home appliances is how legal standards vary between IKEA markets on how the energy consumption of product use must be measured. This makes it difficult to compare products and to provide clear information to customers to support them in making an informed choice.



Within our product ranges, the cooling range is the most challenging when it comes to reaching its specific goals. However, with the updated EU eco-design directive and the new energy labels for appliances (implemented in FY21), we're contributing to awareness about energy consumption and driving positive change by launching more energy-efficient refrigerator and freezer solutions.

## Candles



**Since 2016, the climate footprint from burning candles at home has decreased by 22.1%.**

When addressing the footprint of our candles range, it's important to look at both the material and its use at home simultaneously. That's because renewable candle wax can have a smaller climate footprint at home, but a larger footprint in the supply chain due to land use related to how and where crops are grown.

One main movement is to introduce more diverse sources of vegetable-based waxes from rapeseed and soy. This is challenging to do, as palm oil today is the most affordable vegetable oil available on the market, which leads to a conflict between affordability and introducing new, more sustainable

waxes. But we're making progress in reducing prices by working across the entire supply chain to cut costs elsewhere in production. This will enable us to launch new affordable candles, made with rapeseed and soy waxes, during FY22.

The other main movement is replacing fossil-based paraffin wax, which has a larger use-at-home climate footprint. We've set a new goal to phase out fossil-based paraffin by 2030. Finding a suitable alternative is a challenge, but we're actively searching for and testing replacements.

# Product end-of-life

(6.7% of the total IKEA value chain climate footprint in FY21)

Climate footprint (million tonnes CO<sub>2</sub> eq)<sup>1</sup>

FY16: 1.7	Baseline
FY19: 1.7	±0 % (vs FY16)
FY20: 1.6	-7.9% (vs FY16)
FY21: 1.8	+1.0% (vs FY16)

Goal FY30: under development

## The climate footprint from product-end-of-life has increased by 1.0% compared to FY16.

The increase in the footprint in FY21 is due to an increase in the amount of materials used in the IKEA range. The model to calculate the climate footprint will be updated to capture movements towards designing our products for recycling. Another needed improvement in the model is to move away from national averages on end destinations for different types of waste and, instead, be specific to the local infrastructure close to each IKEA store. The climate footprint also doubled compared to previous IKEA Sustainability Reports as the emission factors to calculate the climate footprint of the end-of-life destination (e.g. recycling, incineration, landfill) were updated to the most recent in the Life Cycle Assessment (LCA) databases we use. Another reason was due to the updated mapping of material amounts conducted in FY21, which led to a higher estimated value than in the previous mapping.

As we transform into a circular business, we're working to ensure that we're not only prolonging the life of products through reuse, repair, recycle – using renewable or recycled materials – but

also ensuring that our products are designed to be recycled from the beginning. By designing for recycling, we avoid products ending up in landfills or being incinerated - which would increase the climate footprint - and instead enable our products to become a source of secondary raw material for us or others to use.

We're working together with communities and societies where we source to do our part to enable increased recycling infrastructure. We want to increase the possibilities of prolonging the life of our products by supporting the development of responsible waste management set-ups, circular product loops and by creating work opportunities in neighbourhoods in connection to product care and recycling. Ultimately, we want to source back as much recycled materials as IKEA products generate at end-of-life.

If we manage to design all products to be recycled and enable recycling in our markets, then we'll be able to, in principle, eliminate this climate footprint by 2030. However, the first step is prevention. We'll encourage reuse and work with refurbishment and remanufacturing to ensure products last as long as possible and are recycled only as a last step.



<sup>1</sup> Scope: GHG Protocol, scope 3 emissions: End-of-life treatment of sold products.

# Greenhouse gas inventory: scope emissions 1, 2 & 3

<i>Sum of GHG emissions (tonnes CO<sub>2</sub> eq)</i>	2016	2017	2018	2019	2020	2021
<b>Scope 1</b> On-site generation, fuel combustion and refrigerants	122,643	120,174	115,095	90,661	78,686	79,392
<b>Scope 2</b> Purchased electricity & heating						
<b>Location-based</b>	439,324	388,873	421,604	414,821	386,151	374,114
<b>Market-based</b>	266,079	306,863	262,690	74,836	59,157	54,597
<b>Scope 3</b>	27,367,499	27,739,061	28,652,187	27,765,980	24,611,282	26,019,759
<b>1. Purchased goods and services</b>	15,574,149	16,184,951	16,874,382	16,748,955	14,922,067	16,281,406
Food ingredients	959,788	929,971	995,729	957,446	764,856	695,468
Materials	12,078,339	12,276,418	13,231,813	13,086,054	11,839,081	13,647,367
Production	2,479,633	2,911,796	2,598,008	2,648,908	2,282,776	1,894,025
Retail equipment & co-worker clothing	56,389	66,766	48,832	56,547	35,354	44,546
<b>2. Capital goods</b>	199,633	193,558	348,944	319,720	188,686	127,815
<b>3. Fuel- and energy-related activities</b>	59,776	55,741	56,600	47,631	43,353	39,389
<b>4. Upstream transportation and distribution</b>	1,111,735	1,144,457	1,202,186	1,134,832	984,934	1,112,149
<b>5. Waste generated in operations</b>	28,586	35,881	49,523	48,266	33,141	32,090
<b>6. Business travel</b>	74,966	75,456	77,931	63,872	32,763	5,792
<b>7. Employee commuting</b>	138,369	141,974	145,362	151,248	112,572	141,929
<b>8. Upstream leased assets</b>	0	0	0	0	0	0
<b>9. Downstream transportation and distribution</b>	1,500,706	1,639,035	1,711,918	1,799,538	1,510,198	1,486,746
Customer travel	1,408,741	1,529,742	1,578,236	1,562,245	1,360,504	1,267,832
Home deliveries	91,965	109,293	133,682	237,292	149,694	218,914
<b>10. Processing of sold products</b>	0	0	0	0	0	0
<b>11. Use of sold products</b>	6,424,915	5,993,859	5,805,639	5,129,170	4,596,369	4,460,785
Appliances	1,428,153	1,405,229	1,422,549	1,405,477	1,222,424	1,358,777
Candles	71,946	68,051	66,232	58,792	53,269	56,031
Lighting	4,924,816	4,520,579	4,316,858	3,664,828	3,318,290	3,045,324
Home electronics	0	0	0	73	2,386	653
<b>12. End-of-life treatment of sold products</b>	1,733,074	1,721,745	1,749,520	1,733,530	1,596,359	1,750,718
<b>13. Downstream leased assets</b>	0	0	0	0	0	0
<b>14. Franchises</b>	521,590	552,404	629,544	589,220	590,839	580,941
<b>15. Investments</b>	0	0	0	0	0	0
<b>Grand total</b> (For scope 2 emissions, the market-based value is used for purchased electricity and heating)	27,756,222	28,166,097	29,029,972	27,928,222	24,748,554	26,152,556
<b>Outside the scopes</b> Biogenic emissions (from on-site fuel combustion)	443,434	433,839	489,142	542,623	513,145	503,384

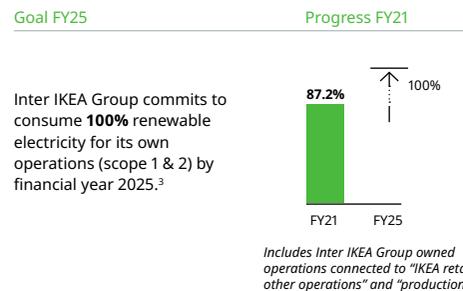
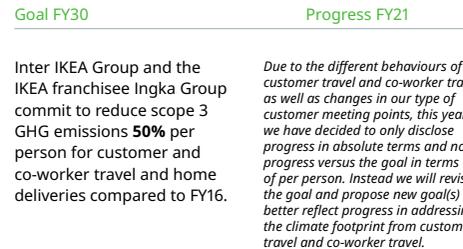
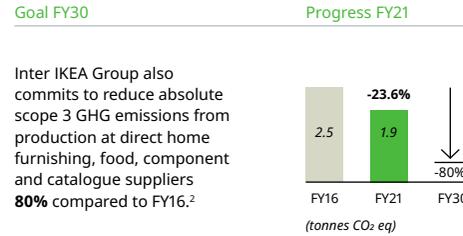
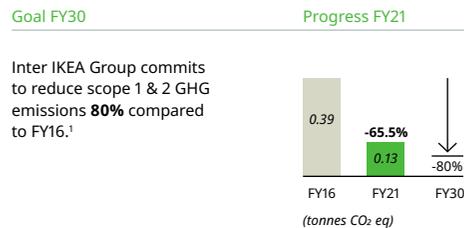
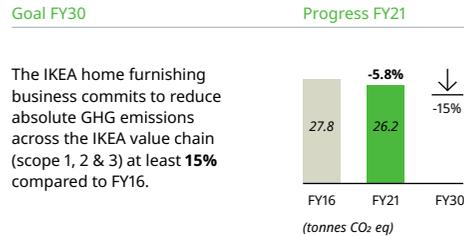
# FY21 progress on external initiatives

## The following is a summary of all IKEA commitments towards external initiatives.

Based on the pre-defined scope of each initiative, the values could differ compared to those shared in the [IKEA Sustainability Report FY21](#) and IKEA Climate Report FY21. For example, the Cool Food Pledge, where the concept of carbon opportunity cost is included in the calculations, is not part of the accounting standard and guidance by the GHG Protocol.

### Science Based Targets initiative

The target boundary includes biogenic emissions and removals from bioenergy feedstocks. For GHG emissions from bioenergy, the GWP of CO<sub>2</sub> is assumed to be zero, while the GWP of CH<sub>4</sub> and N<sub>2</sub>O are still included and as defined by IPCC AR5. All emission factors for combustion of fuel taken from GHG Protocol.



## Cool Food Pledge<sup>4</sup>

The figures below are a summary of the progress versus the IKEA commitment for the Cool Food Pledge. The goal is to by 2030 aim for at least a 25% absolute reduction in food-related GHG emissions or a 38% relative reduction in food-related GHG emissions per calorie, compared to 2016.

Progress against 25% absolute target (tonnes CO<sub>2</sub> eq)

	Agriculture supply chain emissions	Carbon opportunity costs	Total	% change since baseline
<b>2016</b>	516,367	2,264,240	2,780,608	<b>0</b>
<b>2017</b>	535,815	2,335,347	2,871,161	<b>+3.3%</b>
<b>2018</b>	522,184	2,226,329	2,748,513	<b>-1.2%</b>
<b>2019</b>	500,434	2,124,185	2,624,620	<b>-5.6%</b>
<b>2020</b>	393,380	1,658,998	2,052,378	<b>-26.2%</b>
<b>2030</b>				<b>-25%</b>

Progress against 38% relative target (kg CO<sub>2</sub> eq per 1,000 kcal)

	Agriculture supply chain emissions	Carbon opportunity costs	Total	% change since baseline
<b>2016</b>	2.78	12.21	14.99	<b>0</b>
<b>2017</b>	2.79	12.15	14.94	<b>-0.4%</b>
<b>2018</b>	2.59	11.05	13.65	<b>-9.0%</b>
<b>2019</b>	2.50	10.59	13.09	<b>-12.7%</b>
<b>2020</b>	2.38	10.04	12.42	<b>-17.2%</b>
<b>2030</b>				<b>-38%</b>

<sup>1</sup> Scope includes scope 1 & 2 emissions for Inter IKEA Group owned operations for IKEA retail & other operations and production (IKEA Industry and IKEA Components).

<sup>2</sup> Scope excludes production at IKEA owned factories of IKEA Industry and IKEA Components, which are reported in scope 1 & 2.

<sup>3</sup> For IKEA Industry and IKEA Components the figures are reported by the calendar year 2020 to be consistent with reporting by external direct suppliers. The achievements to secure 100% renewable electricity in Russia and China are therefore not fully reflected.

<sup>4</sup> The figures presented here differ from those in the rest of the IKEA Climate Report as its calculation methodology introduces concepts such as the Carbon Opportunity Costs, which is not part of the GHG Protocol accounting standard and guidance. As this is reported in the beginning of each calendar year, the IKEA Climate Report FY21 covers the progress up until the calendar year 2020.

# Footprint calculation methodology

## Overall

Described here is a high-level summary of how the IKEA climate footprint is calculated. The scope covers the entire IKEA value chain. This includes the raw material extraction and processing for the materials or food ingredients used in the IKEA range, how they are produced at our direct suppliers or IKEA owned factories, and then transported to the IKEA stores and warehouses. It covers all IKEA stores, warehouses, offices and other operations, as well as co-worker commuting and business travel. All travel by our customers to the IKEA stores is included and any home deliveries they order to get the products from the stores to their homes. The product use at home is mainly the electricity consumption needed to power our lighting and appliances products, as well as the CO<sub>2</sub> emissions from burning candles. Finally, the climate footprint from the product end-of-life is included should a product not be recycled, but instead be incinerated or end up on landfill. A few agendas are still developing. Until these are integrated into other climate footprints, they are categorised as "Other" for the sake of transparency.

The calculations models are annually reviewed to reflect the IKEA value chain and its parts as accurately as possible. This could be due to increasing traceability and gaining access to more supplier-specific information – moving away from qualified estimations – or that science and accounting standards are improved. At all times, all historical data is always revised to ensure that all disclosed performance reflect progress and not a change in accounting.

## Materials

The climate footprint of materials is calculated as the cradle-to-gate footprint from raw material extraction and all processing steps and transports up until the gate of our tier 1 suppliers where the IKEA products are manufactured, which are covered under "production". The amount of material is multiplied with an emission factor specific to its recycled content, renewable content, sourcing country (if available) and material company (if available) using ecoinvent and other LCA databases. The emission factors are based on sector averages, which are then modelled based on the amount of traceability and primary data we have available for the supply chain of that material. As more traceability is gained or more primary data is obtained from our material suppliers, the emission factors are continually refined to make them more specific to the IKEA supply chain.

For material amounts, measured data exists for all wood, paper, candles, and most plastics because systems are in place to measure and follow-up on at least a yearly level. These stand for about three-quarters of the material amounts. For the other material areas, we currently lack systems to follow-up and rely on close collaboration with our direct suppliers to estimate the amounts to the best of our knowledge. As we develop and extrapolate fewer materials with missing amounts and make our mappings more granular, the material footprint is subject to change. However, all historical data is always revised for comparability to ensure that any trend is due to improvements of the materials rather

than the data quality.

The climate footprint is also subject to change as the emission factors in ecoinvent and other LCA databases are updated from one version to another.

## Food ingredients

The climate footprint for food ingredients is calculated in a similar way as materials – from cradle-to-gate to the factory manufacturing the food products. For the amount of food ingredients, a system is in place to measure the ingredients per product for the global food range and for parts of the market-specific range. As the certainty improves and less of the market-specific food range is estimated, the climate footprint of food ingredients become more accurate, which is why it can differ from what's reported in one IKEA Sustainability Report compared to the next. However, all historical data is always revised for comparability to ensure that any trend is due to improvements of the food range rather than the data quality.

The climate footprint is also subject to change as the emission factors in ecoinvent and other LCA databases are updated from one version to another.

## Production

The climate footprint of production is the final step in the supply chain where the IKEA home furnishing or food products, components or printed media is

produced. It also includes the IKEA owned factories operated by IKEA Industry and packaging and distribution units by IKEA Components. The footprint is measured as the scope 1 and scope 2 emissions of each tier 1 supplier or unit, as well as any connected fuel- and energy-related activities (scope 3, category 3). All units provide their primary data on the consumption of energy sources and refrigerants, as well as any renewable energy attributes for bought energy (electricity and district heating or cooling). The related GHG emissions for each energy source are calculated using emission factors provided by the GHG Protocol (combustion of fuels and refrigerants) and the International Energy Agency (purchased electricity and heating).

## Product transport

The climate footprint of product transport is measured as any transport managed by IKEA Supply Chain Operations, IKEA Industry, IKEA Components or IKEA Marketing & Communication. In essence, these are all product transports from our direct supplier to any IKEA unit, as well as product transports between IKEA units.

It is measured per shipment for each transport route and calculated in line with the standard EN 16258.

### **IKEA retail & other operations**

The climate footprint of IKEA retail and other operations covers all IKEA operations (stores, warehouses, offices, etc.) by Inter IKEA Group and the IKEA retail business of each of the IKEA franchisees. It does not include IKEA owned factories by IKEA Industry and packaging and distribution units by IKEA Components, since these are reported in production.

The footprint is measured as the scope 1 and scope 2 emissions of each unit, as well as any connected fuel- and energy-related activities (scope 3, category 3). All units provide their primary data on the consumption of energy sources and refrigerants, as well as any renewable energy attributes for bought energy (electricity and district heating or cooling).

The related GHG emissions for each energy source are calculated using emission factors provided by the GHG Protocol (combustion of fuels and refrigerants) and International Energy Agency (purchased electricity and heating). The only exception to this is for the IKEA franchisee Ingka Group, where the GHG emissions from fuels are using emission factors by DEFRA. Work is in progress to align the emission factors throughout the IKEA businesses.

### **Co-worker commuting and business travel**

The climate footprint from co-worker commuting is based on the survey conducted for co-worker travel to stores and calculated for the IKEA franchisee

Ingka Group. This climate footprint is then extrapolated for the other IKEA businesses based on number of employees.

For business travel, the climate footprint is calculated by our travel agencies and their travel booking systems, which have integrated climate footprint calculations. All climate footprints are calculated using emission factors provided by DEFRA.

### **Customer travel & home deliveries**

The climate footprint of customer travel is measured on the IKEA store level based on number of customers (transactions) combined with a survey through Brand Capital on the mode of transports to store by customer and distance and time travelled. Using the time and distance travelled, an emission factor is provided by Numeo for each mode of transport.

As the IKEA business is driving visitation to the IKEA customer meeting points, the methodology will be reviewed to better reflect our new way of meeting the customer and new ways to deliver products to customers' homes.

### **Product use at home**

The climate footprint of product use at home is based on the energy consumption at home for lighting, home appliances, and home electronics and the burning of candles. The energy

consumption is measured in line with the GHG Protocol as the energy consumption through the product's lifetime. Since, in principle, all energy consumption is electricity consumption, the climate footprint is calculated by multiplying the energy consumption with that of the national electricity grid for the specific country in which the product was sold. For candles, the climate footprint is calculated by multiplying the amount of wax with the specific emission factor for combustion for the specific wax (emission factors provided by the GHG Protocol).

### **Product end-of-life**

The climate footprint for product end-of-life is calculated in a similar way as materials. The big difference is the scope, which is the grave (end-of-life) footprint, not the cradle-to-gate we use for materials. The amount of material is multiplied with an end-of-life emission factor specific to that material and the country average waste handling in each IKEA market.

Currently, no consideration in the model is taken to how the product has been designed for recycling or the specific waste handling infrastructure at the IKEA store level.

The climate footprint is subject to change as the accuracy for amount of materials increase and the emission factors in ecoinvent and other LCA databases are updated from one version to another.

### **Other**

In addition to the climate footprints above, there are areas currently not as actively addressed as the others. Until the agenda of these mature and they are integrated into the other climate footprints, they are kept as an "other" category. This includes capital goods, waste generated in operations and material for retail equipment and co-worker clothing. For transparency purposes, these footprints are calculated and disclosed.

### **Emission factors**

For used emission factors, please see each separate entry.

All global warming potentials (GWP) of reported GHG are defined by IPCC Fifth Assessment Report (AR5). If any updates are provided by the Sixth Assessment Report (AR6) during spring 2022, this will be revised for the climate footprint reporting FY22.

For GHG emissions from bioenergy, the global warming potential (GWP) of CO<sub>2</sub> is assumed to be zero, while the GWP of CH<sub>4</sub> and N<sub>2</sub>O are still included.