BMW GROUP STRATEGY: SUSTAINABILITY 2030.

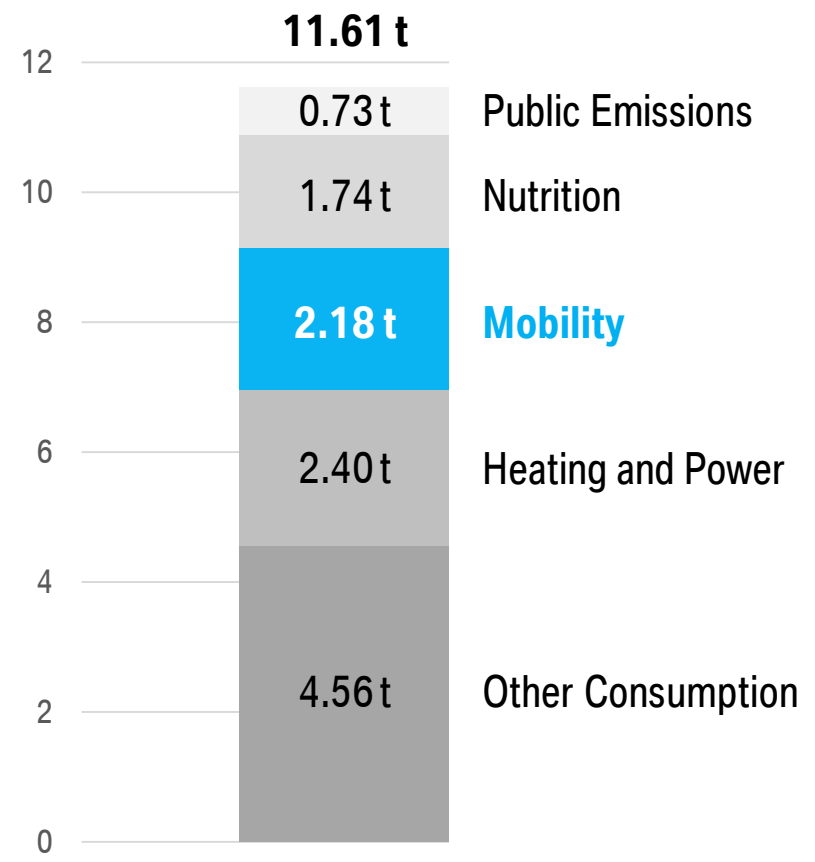
BMW GROUP THE NEXT 100 YEARS

Rolls-Royce Motor Cars Limited

MOBILITY IS PART OF OUR DAILY LIFE.
BUT IT HAS TO BECOME SUSTAINABLE.

Average CO_2 emissions per person in Germany

German Environment Agency 2020, Climate Action in Figures



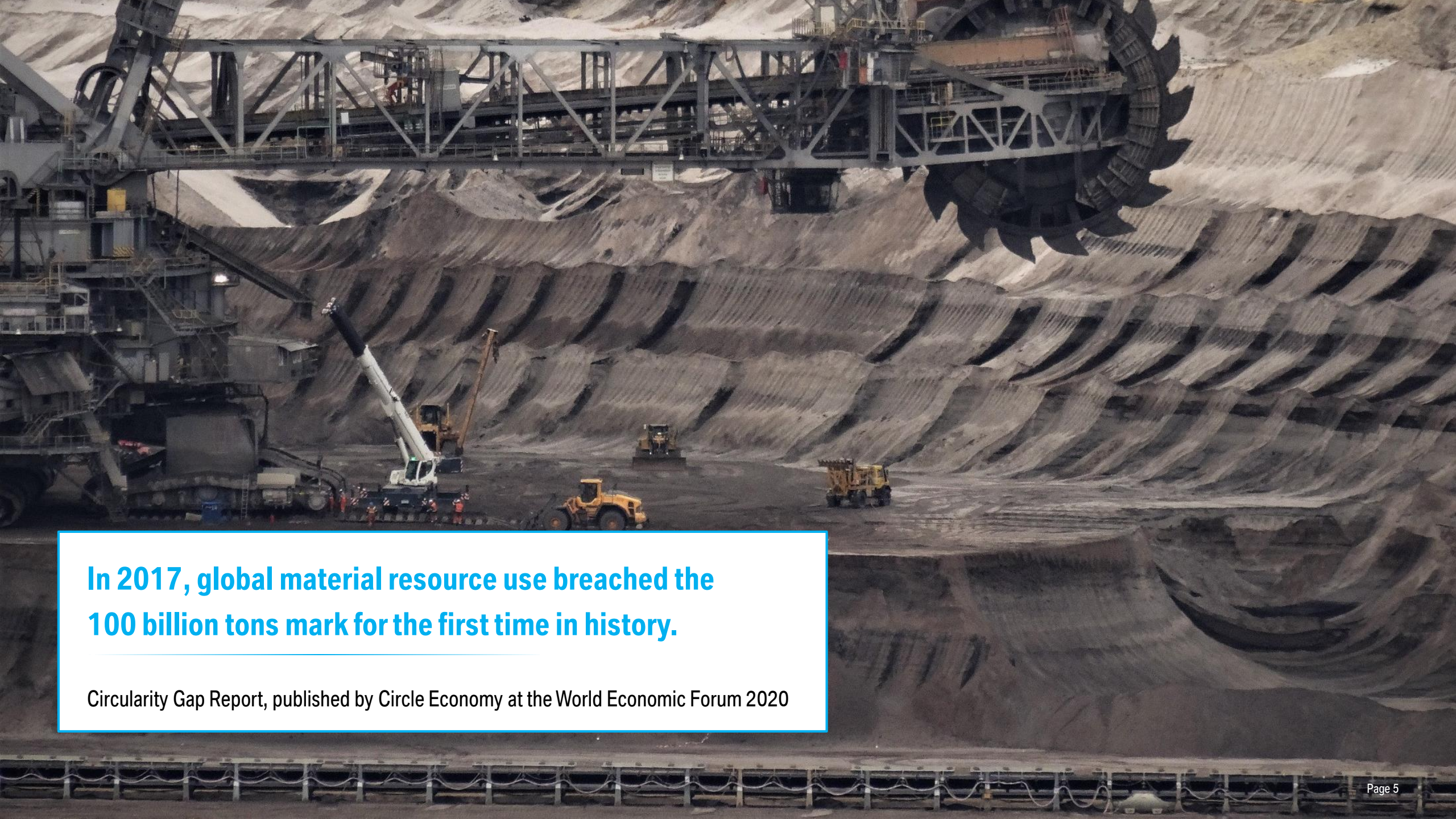
We are making sustainability central to the **strategic direction** of the BMW Group.

The fight against climate change and how we use resources will decide the future of our society – and of the BMW Group.

Excellent products and **sustainability** are inseparable.

We are committed: The BMW Group will implement **substantial measures** for sustainability and climate protection with an impact even beyond our own company.


We don't do sustainability
at BMW.
We make BMW sustainable.



In 2017, global material resource use breached the 100 billion tons mark for the first time in history.

Circularity Gap Report, published by Circle Economy at the World Economic Forum 2020

EFFECTIVE CLIMATE PROTECTION REQUIRES TRANSPARENCY, A CLEARLY DEFINED ROADMAP AND THE COURAGE AND CAPABILITY FOR EXECUTION.

Science-based approach for true effectiveness.

Without further measures, the CO_2 footprint of the BMW Group would continue to rise due to increasing sales volume until 2030.

To achieve real change, we are joining the "Science-Based Targets" initiative. We set ourselves substantial targets based on comprehensive emission values.

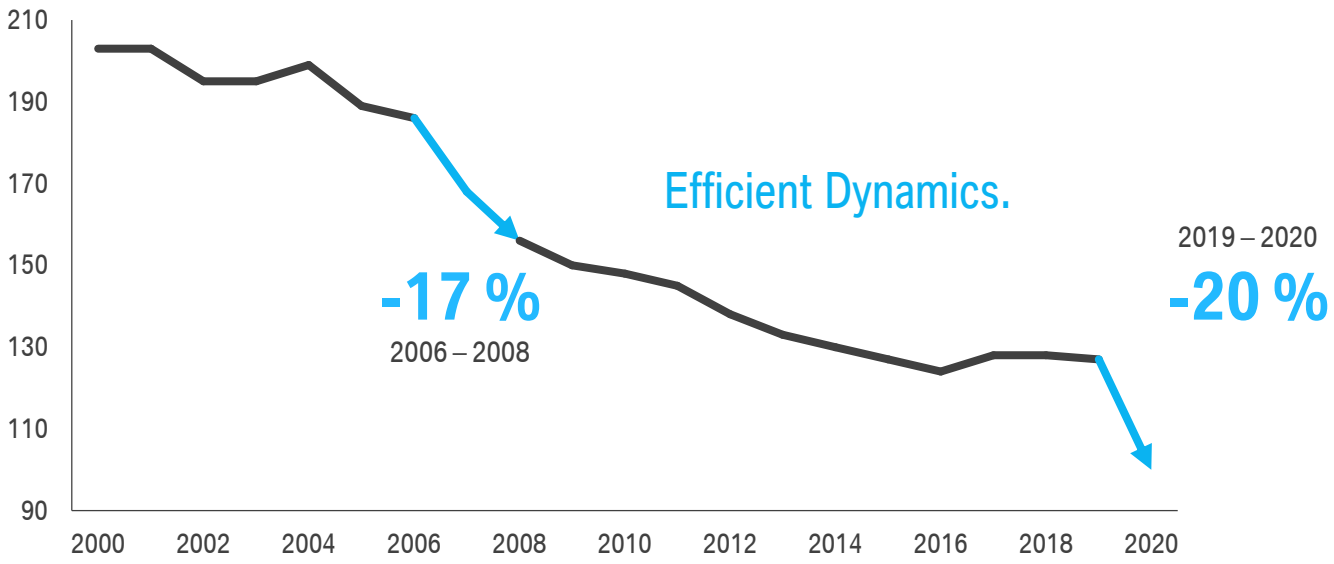
All values are normed to CO_2 equivalents.

We are refining the calculation base of our sustainability indicators fundamentally and will improve the maturity level of our reporting.

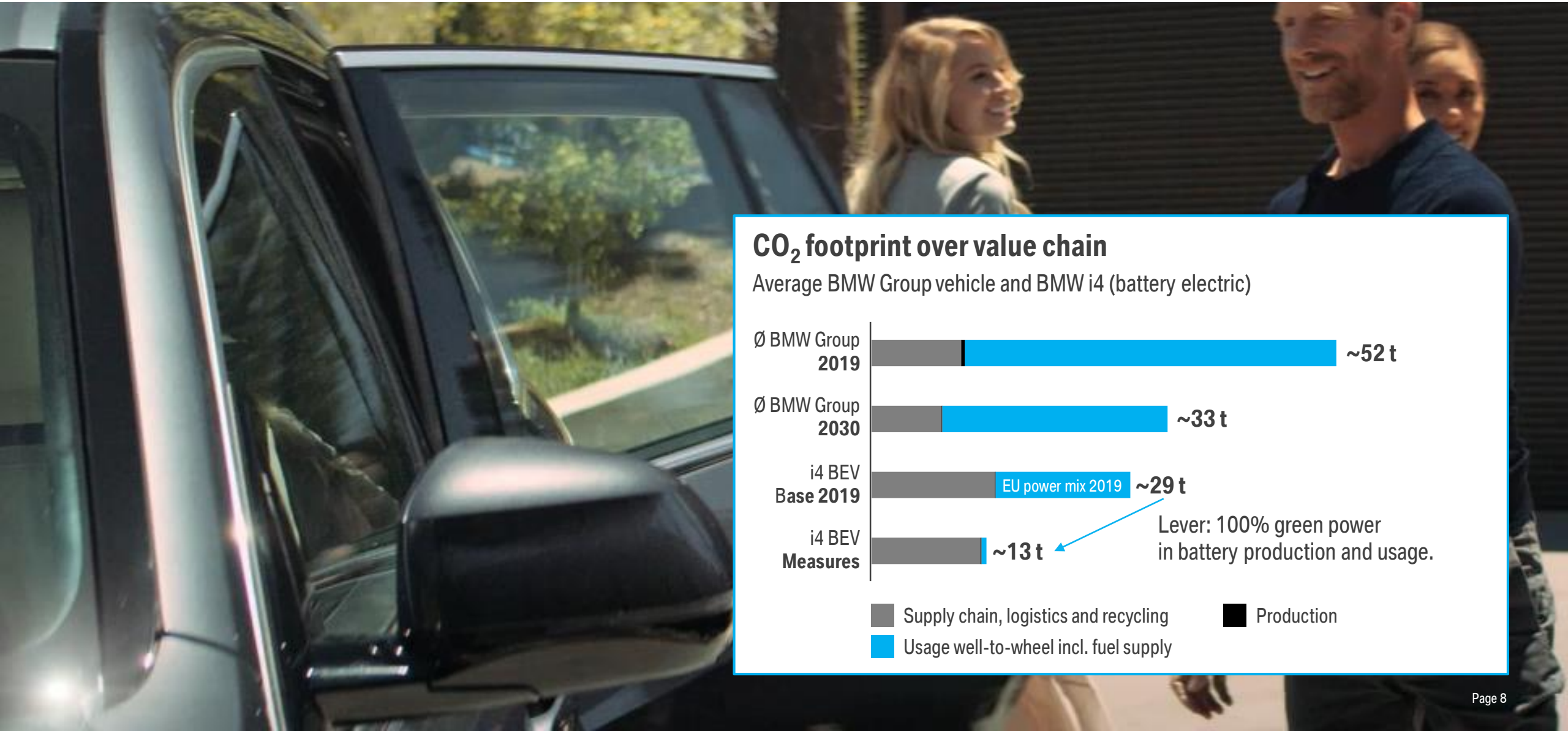
We are making transparent where we stand today, where we want to go and which measures we will implement.

WE ARE STAYING TRUE TO OUR PROMISE – WE ARE ON TRACK TO ACHIEVE OUR CO_2 TARGETS IN THE EU IN 2020.

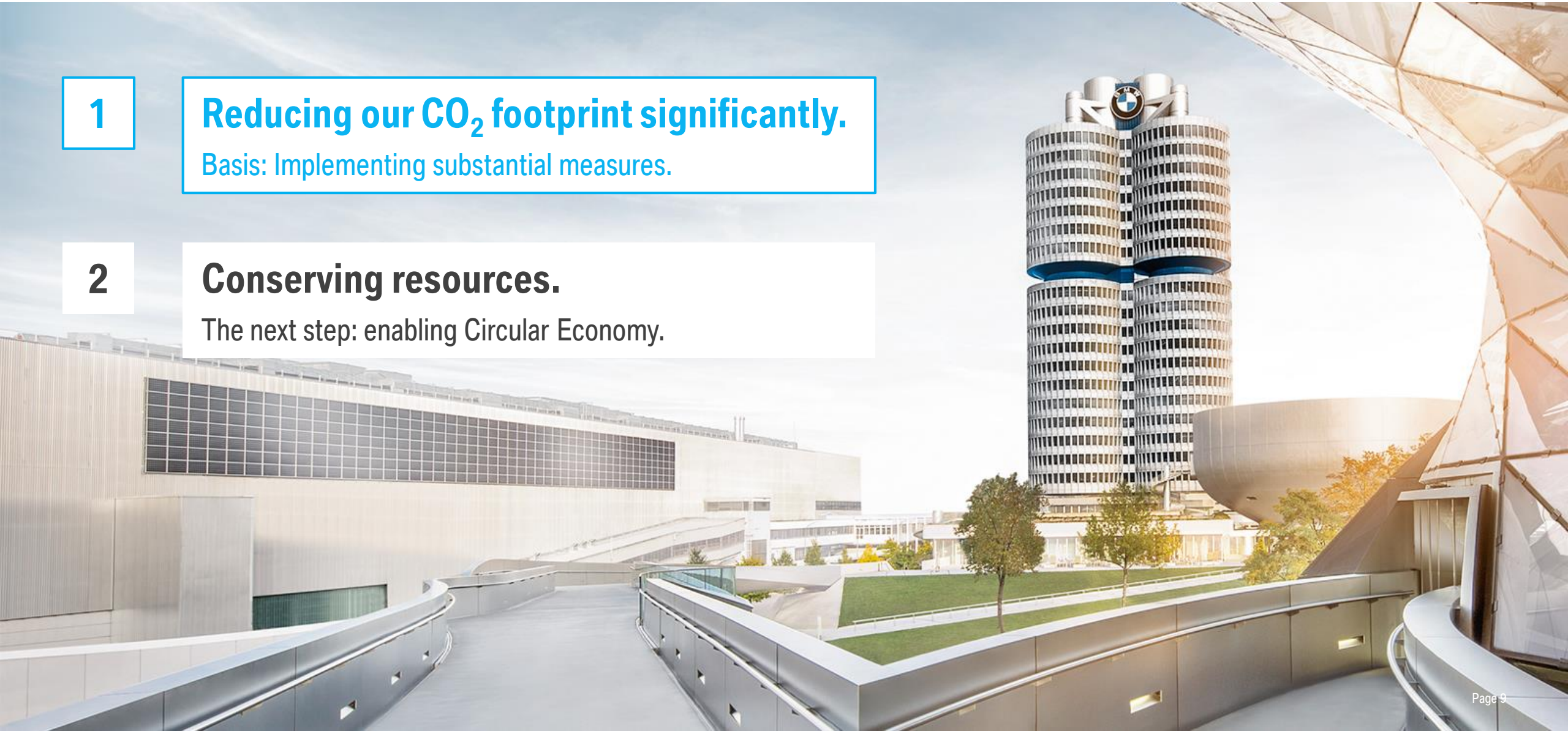
BMW Group CO_2 emissions in the EU new vehicle fleet.
[g CO_2 / km]



CREATING TRANSPARENCY.
WHAT IS THE TOTAL CARBON FOOTPRINT OF A VEHICLE OVER ITS LIFECYCLE?



BMW GROUP STRATEGY: SUSTAINABILITY 2030.



1 **Reducing our CO_2 footprint significantly.**

Basis: Implementing substantial measures.

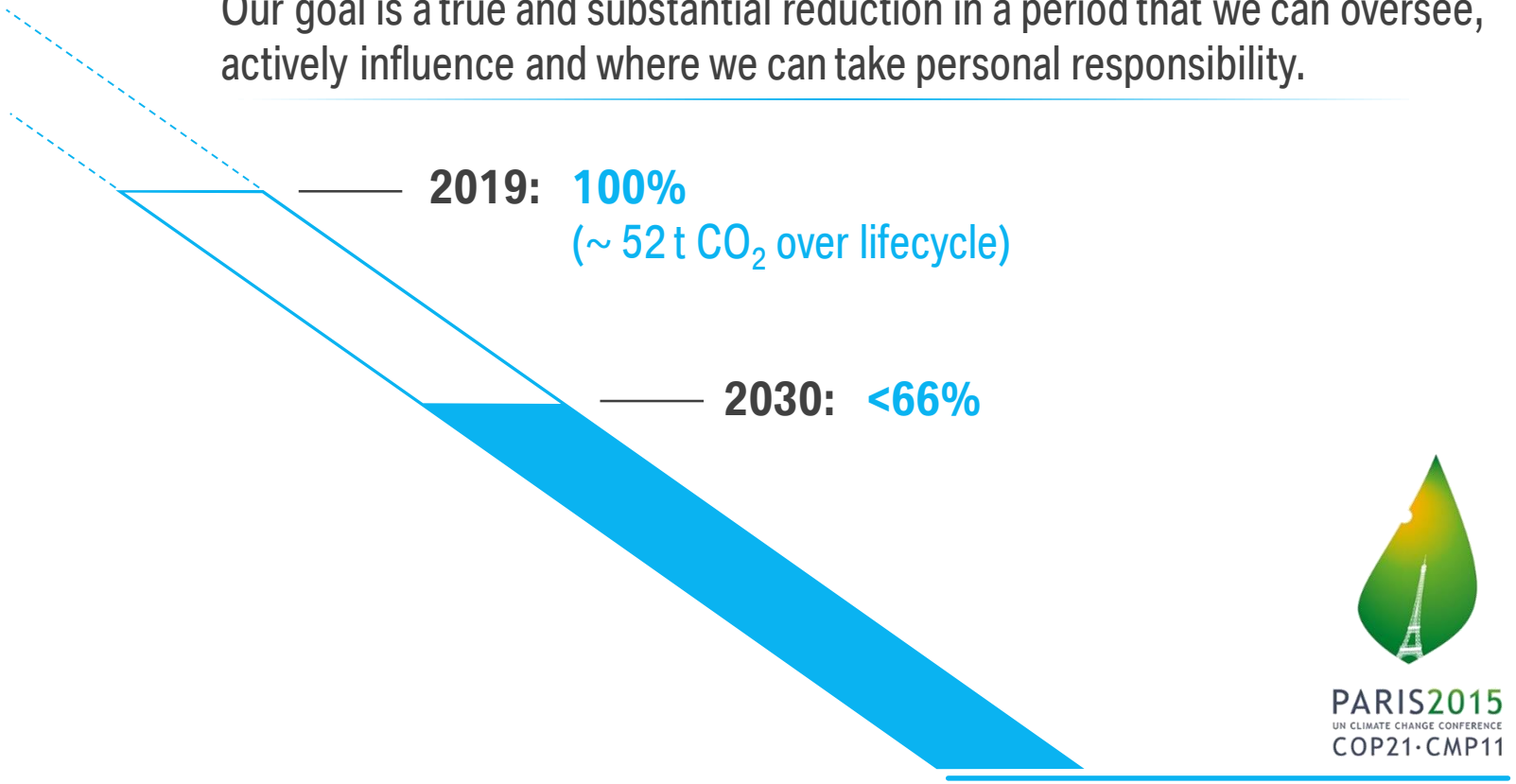
2 **Conserving resources.**

The next step: enabling Circular Economy.

ON THE PATH TO CO_2 NEUTRALITY, WE ARE ACTING TODAY.

BMW Group CO_2 footprint per vehicle

Our goal is a true and substantial reduction in a period that we can oversee, actively influence and where we can take personal responsibility.



PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

WE ARE REDUCING CO_2 SUBSTANTIALLY ACROSS THE ENTIRE VALUE CHAIN.

Supply Chain

-20% CO_2 per veh.
2019-2030

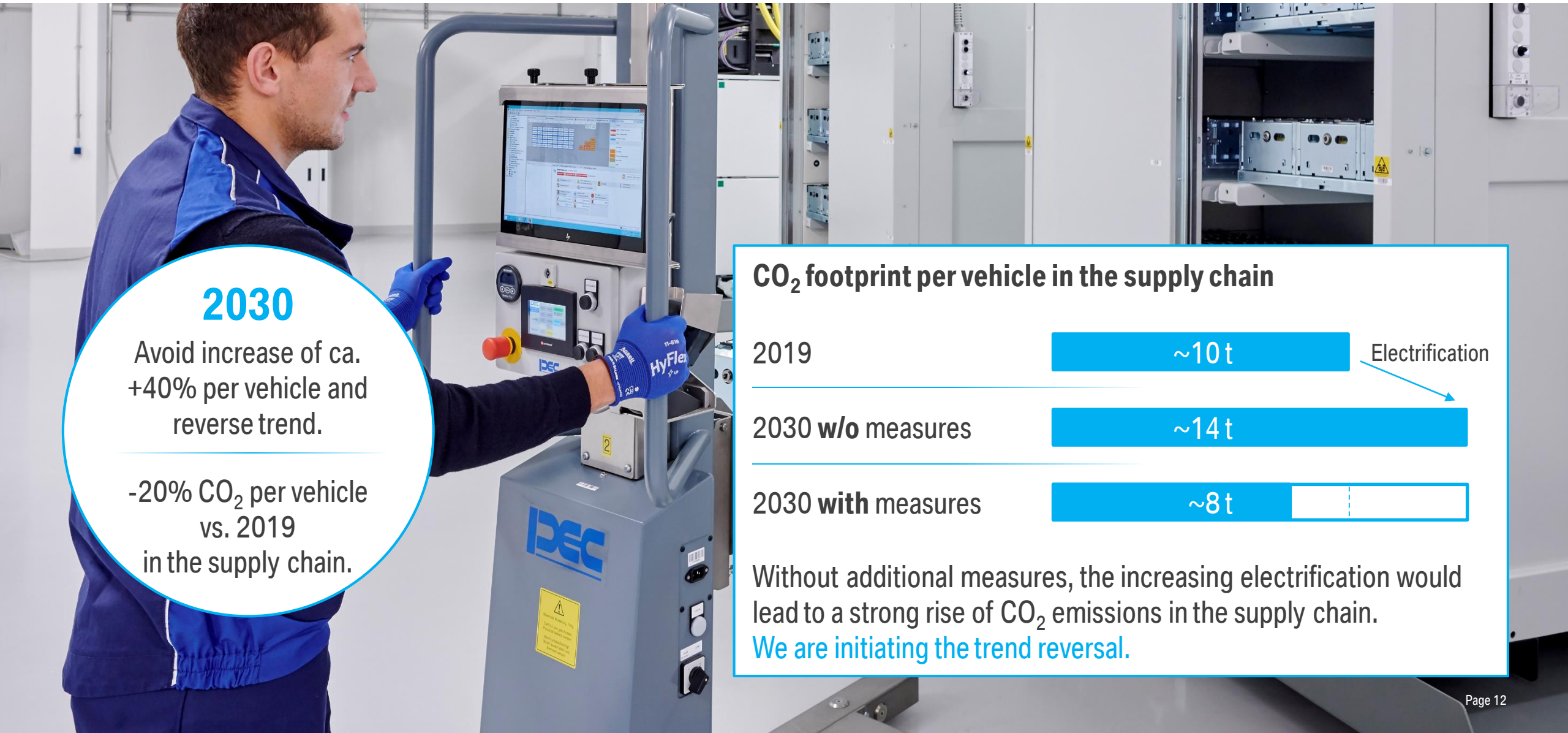
Production

-80% CO_2 per veh.
2019-2030

Use Phase

-40% CO_2 per veh.
2019-2030

OUR RESPONSIBILITY STARTS ALREADY IN THE SUPPLY CHAIN.



2030

Avoid increase of ca. +40% per vehicle and reverse trend.

-20% CO_2 per vehicle vs. 2019 in the supply chain.

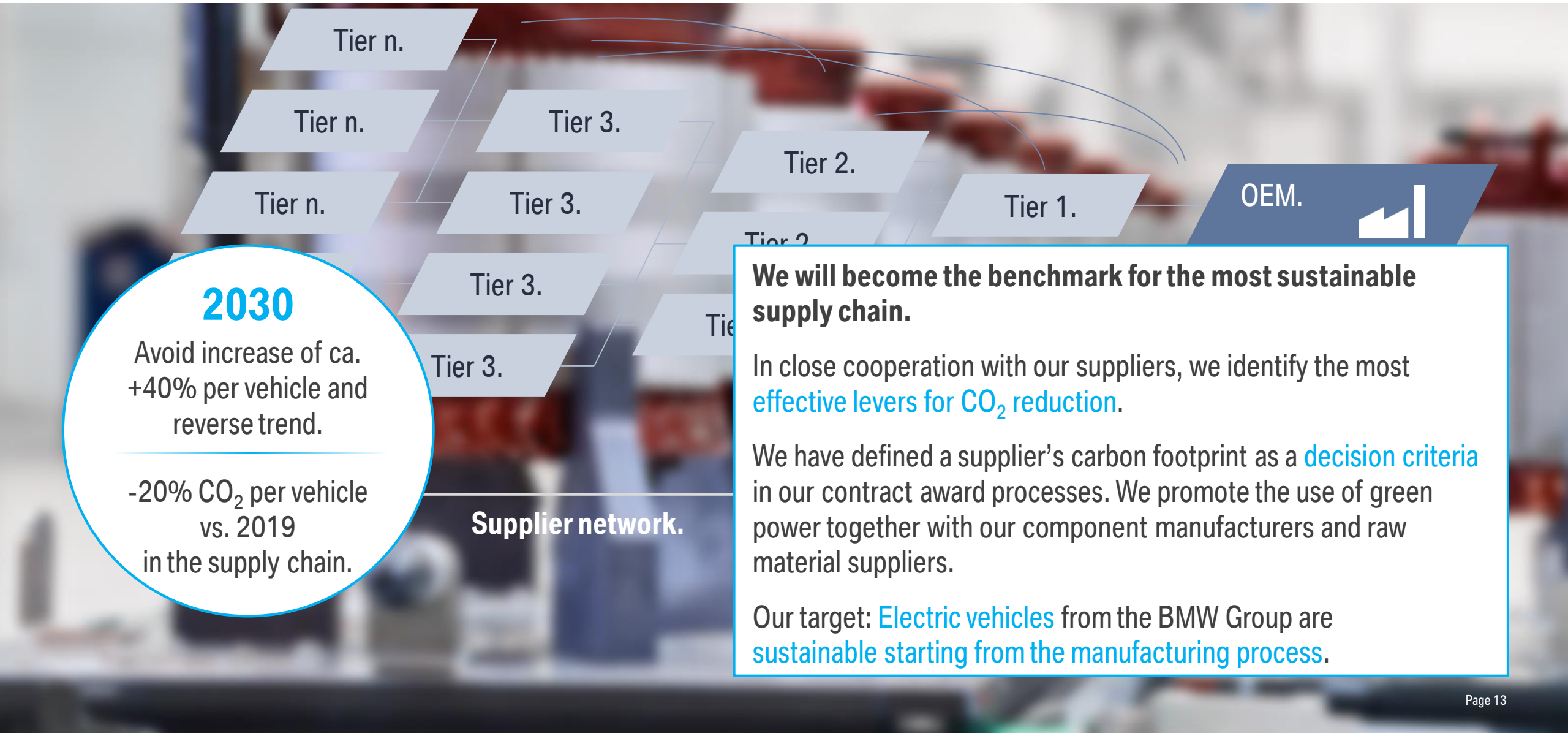
CO_2 footprint per vehicle in the supply chain

2019	~10 t
2030 **w/o** measures	~14 t
2030 **with** measures	~8 t

Electrification

Without additional measures, the increasing electrification would lead to a strong rise of CO_2 emissions in the supply chain.
We are initiating the trend reversal.

WE WILL EFFECTIVELY REDUCE THE CO_2 FOOTPRINT IN THE SUPPLY CHAIN, THROUGH TO RAW MATERIALS.



2030

Avoid increase of ca. +40% per vehicle and reverse trend.

-20% CO_2 per vehicle vs. 2019 in the supply chain.

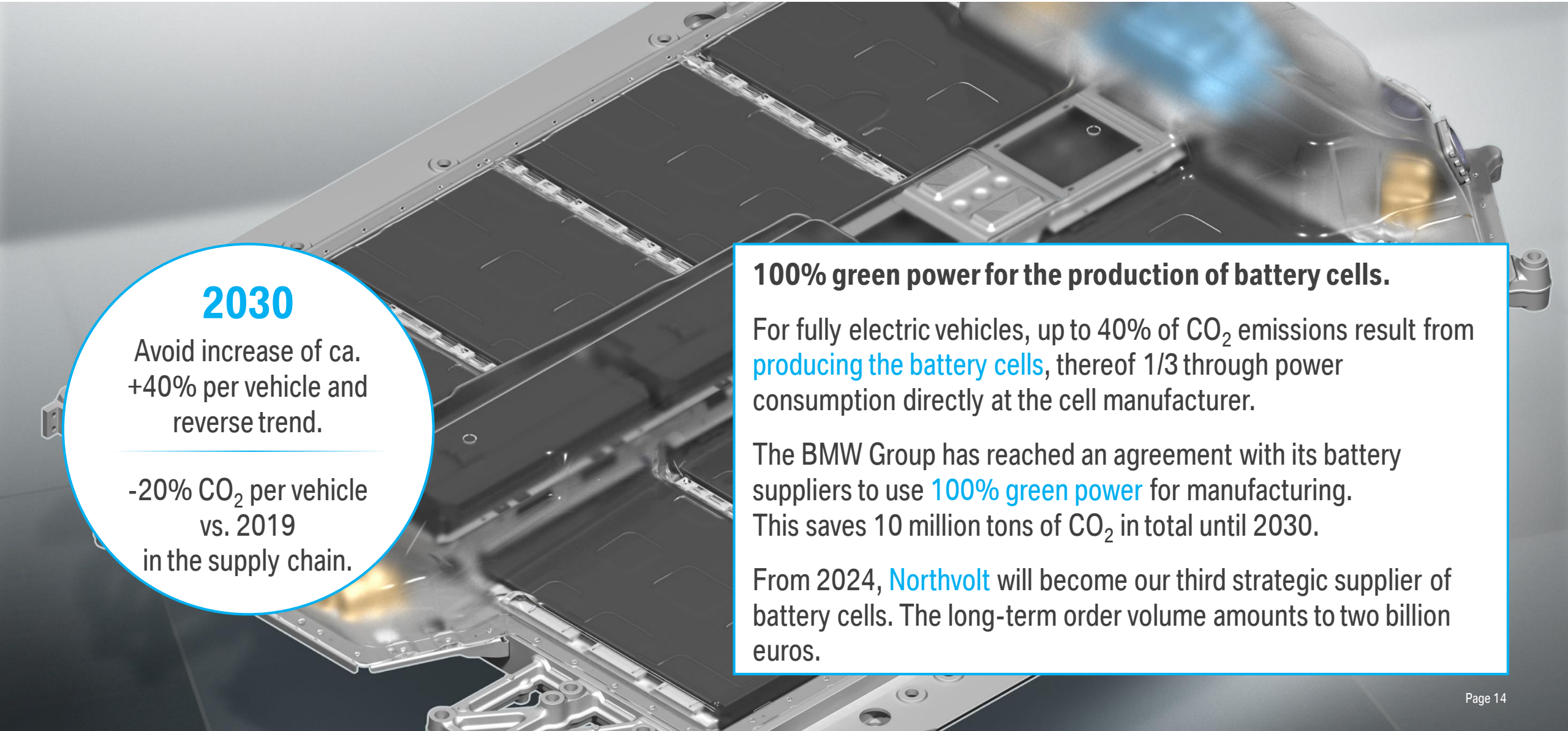
We will become the benchmark for the most sustainable supply chain.

In close cooperation with our suppliers, we identify the most effective levers for CO_2 reduction.

We have defined a supplier's carbon footprint as a decision criteria in our contract award processes. We promote the use of green power together with our component manufacturers and raw material suppliers.

Our target: Electric vehicles from the BMW Group are sustainable starting from the manufacturing process.

WE ARE TARGETING THE DECIDING FACTORS IN THE SUPPLY CHAIN: EXAMPLE BATTERY PRODUCTION.



2030

Avoid increase of ca. +40% per vehicle and reverse trend.

-20% CO_2 per vehicle vs. 2019 in the supply chain.

100% green power for the production of battery cells.

For fully electric vehicles, up to 40% of CO_2 emissions result from producing the battery cells, thereof 1/3 through power consumption directly at the cell manufacturer.

The BMW Group has reached an agreement with its battery suppliers to use 100% green power for manufacturing. This saves 10 million tons of CO_2 in total until 2030.

From 2024, Northvolt will become our third strategic supplier of battery cells. The long-term order volume amounts to two billion euros.

WE ARE REDUCING CO_2 SUBSTANTIALLY ACROSS THE ENTIRE VALUE CHAIN.

Supply Chain

-20% CO_2 per veh.
2019-2030

Production

-80% CO_2 per veh.
2019-2030

Use Phase

-40% CO_2 per veh.
2019-2030

BMW GROUP PRODUCTION SERVES AS A ROLE MODEL.

2030

-80% substantial CO_2 reduction.
per veh. vs 2019

2021

CO_2-neutral production.

Efficient resource management is the basis for a well-functioning circular economy.

Already today, the BMW Group is the benchmark with its very low resource consumption in production.

From 2020, we will source all of our external electricity from renewable sources.

From 2021, we will make all of our locations CO_2 neutral. Until 2030, we want to substantially reduce our CO_2-emissions by 80%.

We want to show in our own area of responsibility what is technically possible and economically viable.

WE WILL SIGNIFICANTLY REDUCE CO_2 EMISSIONS AT OUR LOCATIONS UNTIL 2030. WE WILL FULLY OFFSET THE REMAINING EMISSIONS.

2030

-80% substantial CO_2 reduction.
per veh. vs 2019

2021

CO_2-neutral production.

Lowering energy consumption, increasing renewable energy creation.

We are pushing forward with the use of renewable energy sources at all of our locations. We see much potential in alternative heat generation in our KWKs and for the process heat in paint shops.

We are examining the best options locally, e.g. the use of hydrogen, biogas, biomass or geothermal energy. In a Pilot Plant, we are examining how we can enable heat generation based on H_2.

At the same time, we are optimizing energy efficiency:

We are reducing heating needs by reusing more waste heat from processes and closing thermal cycles. We are using Data Analytics to reduce the power consumption of machines through smart controls and to minimize the amount of scrap parts.

WE ARE REDUCING CO_2 SUBSTANTIALLY ACROSS THE ENTIRE VALUE CHAIN.

Supply Chain

-20% CO_2 per veh.
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Use Phase

-40% CO_2 per veh.
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WE ARE REDUCING THE EMISSIONS OF OUR PRODUCTS IN THE USE PHASE.

2030

-40% CO_2 per vehicle vs. 2019.

Continued rollout of electro mobility, reduction of real emissions.

Extensive product strategy: Strengthening electrification.

By 2030, we want to have delivered more than 7 million electrified vehicles, two thirds of them fully electric.

This applies especially to our core models like the 7 Series, the 5 Series or the X1.

Beyond consumption cycles, we support our customers to increase their actual emission-free kilometers – with eDrive Zones in cities or smart charging.

We also use our lead in the efficiency of combustion engines to make a substantial contribution with Efficient Dynamics.

WE WILL EXTEND OUR COMPREHENSIVE IN-HOUSE COMPETENCIES WITH ELECTRIC DRIVETRAINS.

2030

-40% CO_2
per vehicle vs. 2019.

Continued rollout of electro mobility, reduction of real emissions.

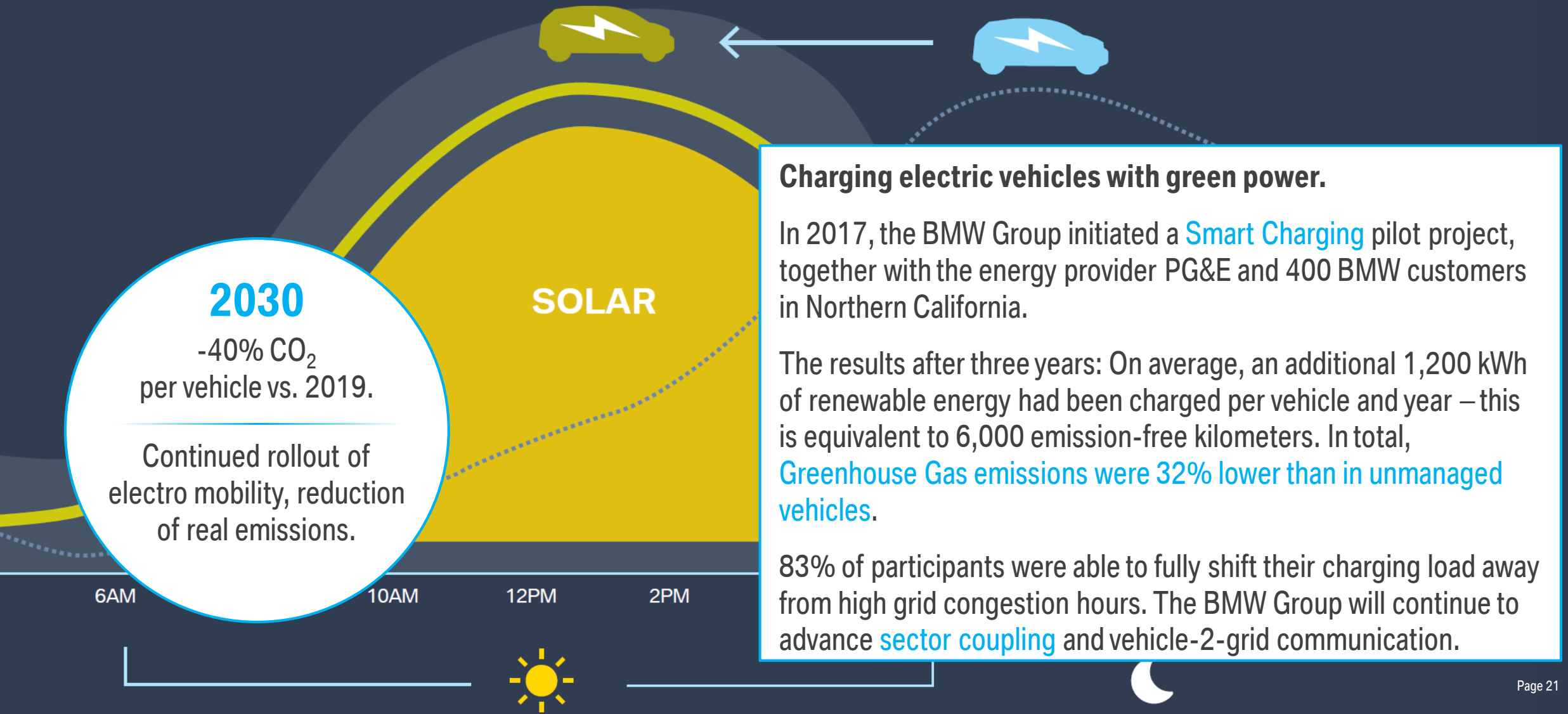
Half a million e-drives of the 5th generation per year.

We are increasing the capacity of our self-developed and self-produced fifth generation of electric drivetrains.

From 2022, we will reach a capacity of 500,000 units annually in Dingolfing alone.

We will further increase the electric driving range of our plug-in hybrids, so our customers can drive the majority of their daily trips emissions-free.

INTELLIGENT CHARGING AND SECTOR COUPLING REDUCE THE REAL EMISSIONS OF ELECTRIFIED VEHICLES SIGNIFICANTLY.



2030

-40% CO_2
per vehicle vs. 2019.

Continued rollout of electro mobility, reduction of real emissions.

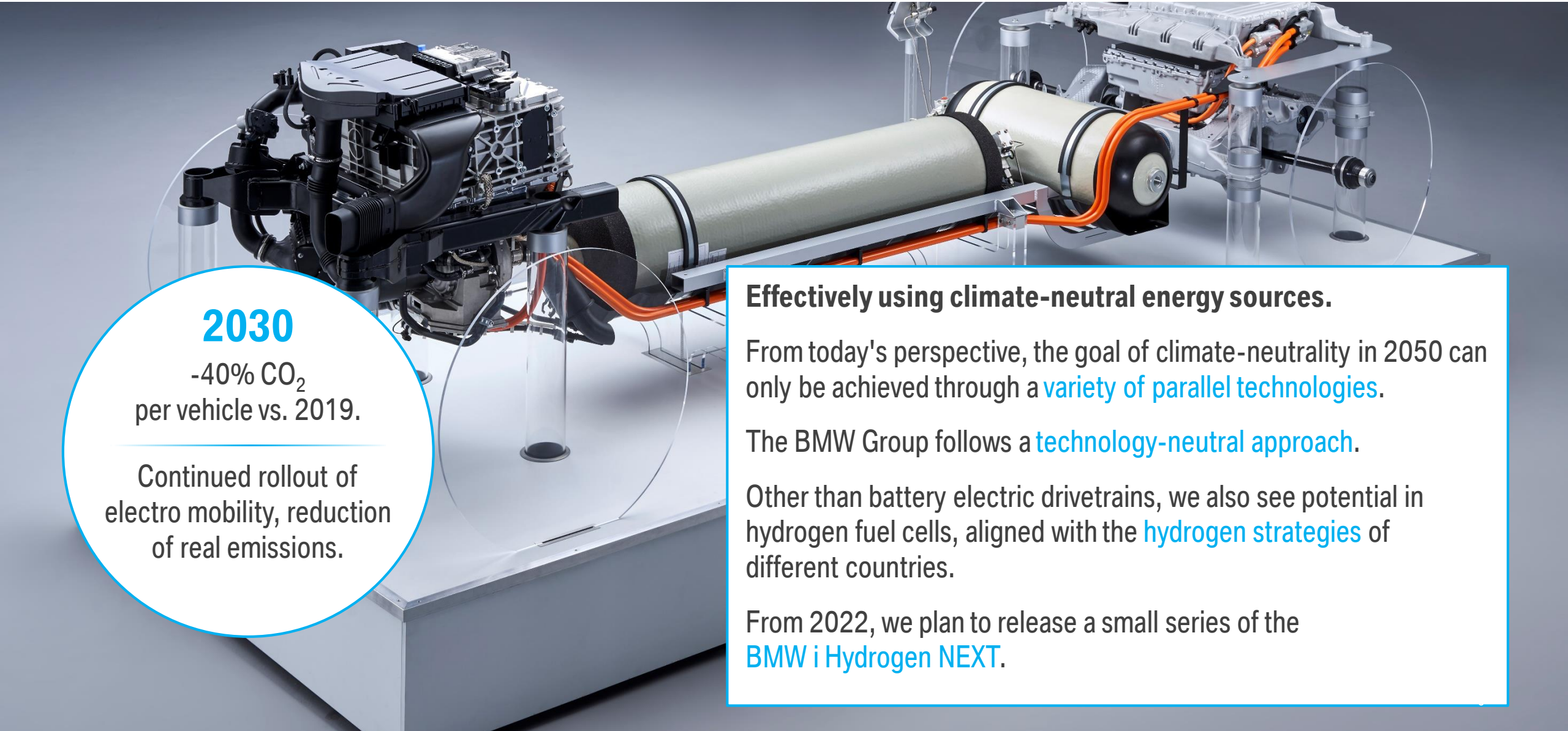
Charging electric vehicles with green power.

In 2017, the BMW Group initiated a Smart Charging pilot project, together with the energy provider PG&E and 400 BMW customers in Northern California.

The results after three years: On average, an additional 1,200 kWh of renewable energy had been charged per vehicle and year – this is equivalent to 6,000 emission-free kilometers. In total, Greenhouse Gas emissions were 32% lower than in unmanaged vehicles.

83% of participants were able to fully shift their charging load away from high grid congestion hours. The BMW Group will continue to advance sector coupling and vehicle-2-grid communication.

WE WILL CONTINUE TO DEVELOP HYDROGEN FUEL CELLS IN A TECHNOLOGY-NEUTRAL APPROACH.



2030

-40% CO_2
per vehicle vs. 2019.

Continued rollout of electro mobility, reduction of real emissions.

Effectively using climate-neutral energy sources.

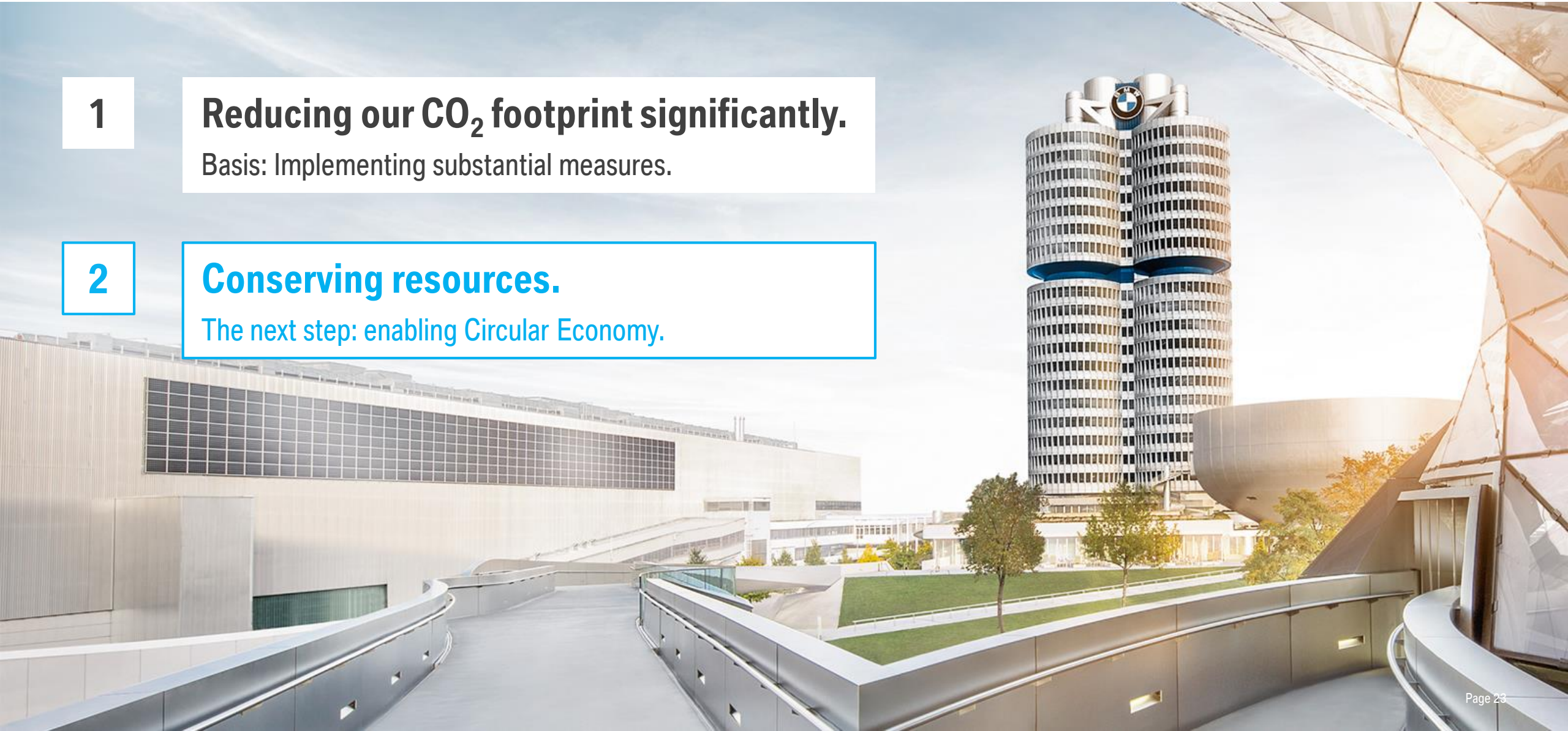
From today's perspective, the goal of climate-neutrality in 2050 can only be achieved through a variety of parallel technologies.

The BMW Group follows a technology-neutral approach.

Other than battery electric drivetrains, we also see potential in hydrogen fuel cells, aligned with the hydrogen strategies of different countries.

From 2022, we plan to release a small series of the BMW i Hydrogen NEXT.

BMW GROUP STRATEGY: SUSTAINABILITY 2030.



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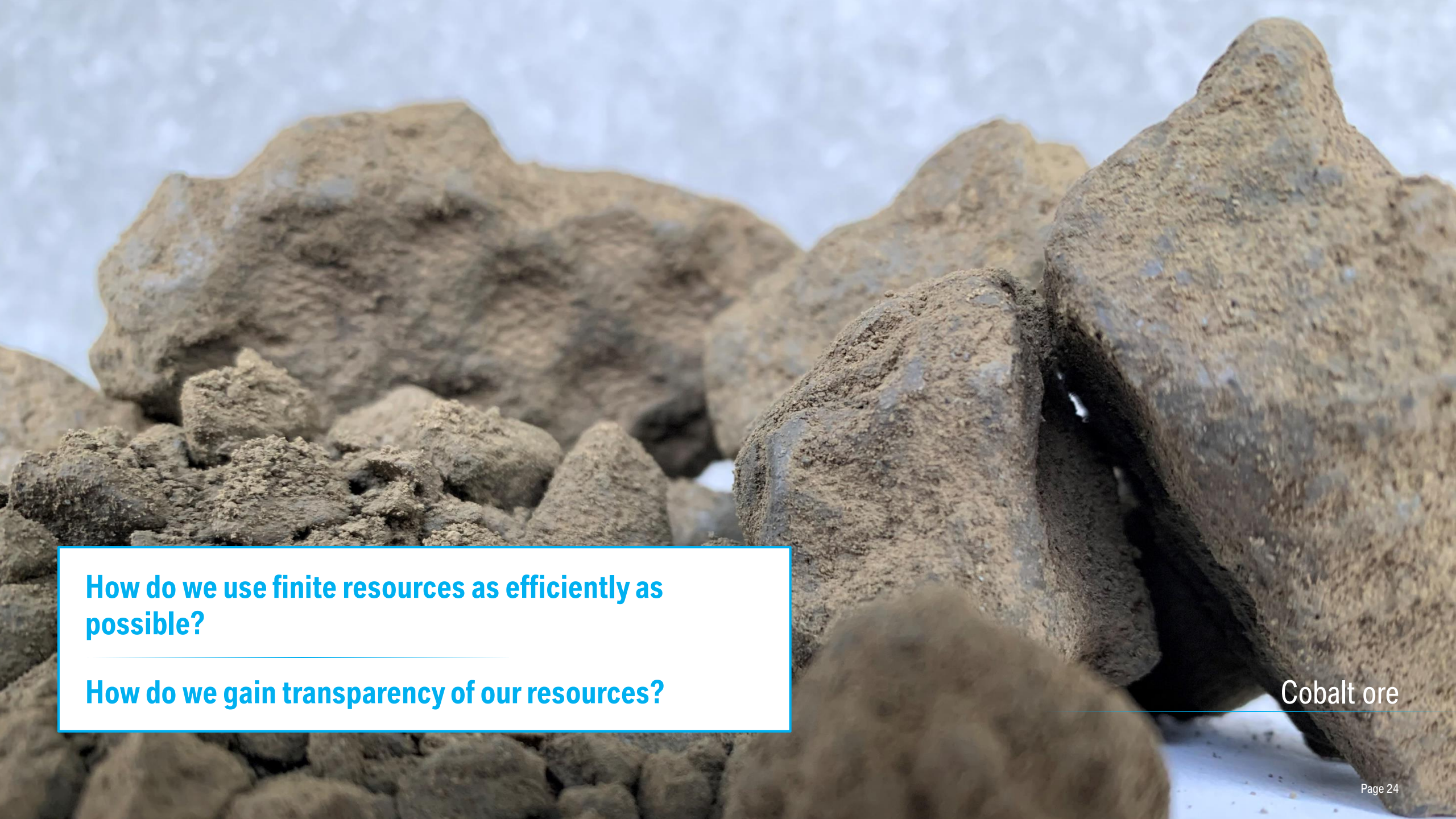
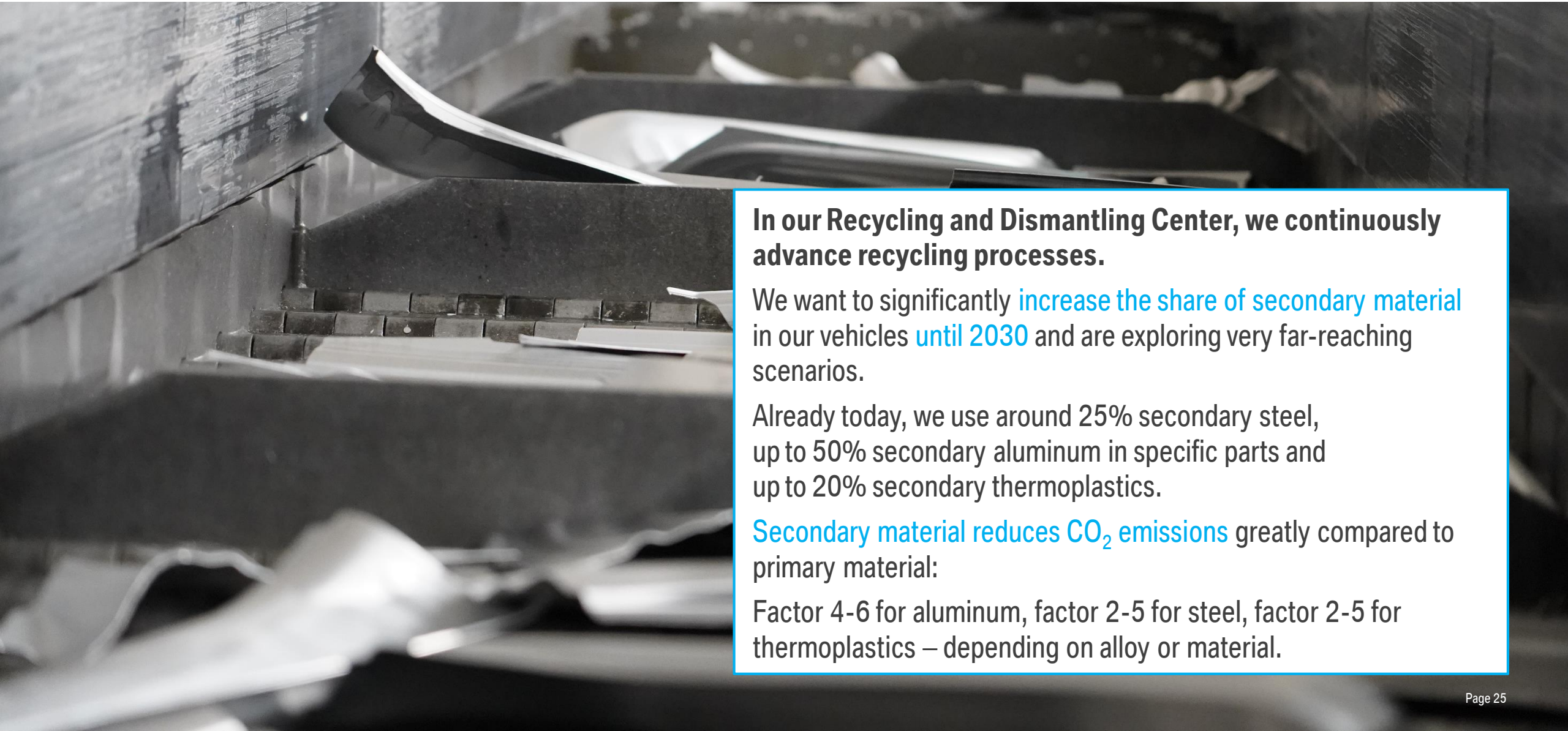


How do we use finite resources as efficiently as possible?

How do we gain transparency of our resources?

Cobalt ore

WE RELY ON LIFE CYCLE ENGINEERING FOR EFFICIENT RECYCLING. SECONDARY MATERIAL REDUCES THE CO_2 FOOTPRINT SIGNIFICANTLY.



In our Recycling and Dismantling Center, we continuously advance recycling processes.

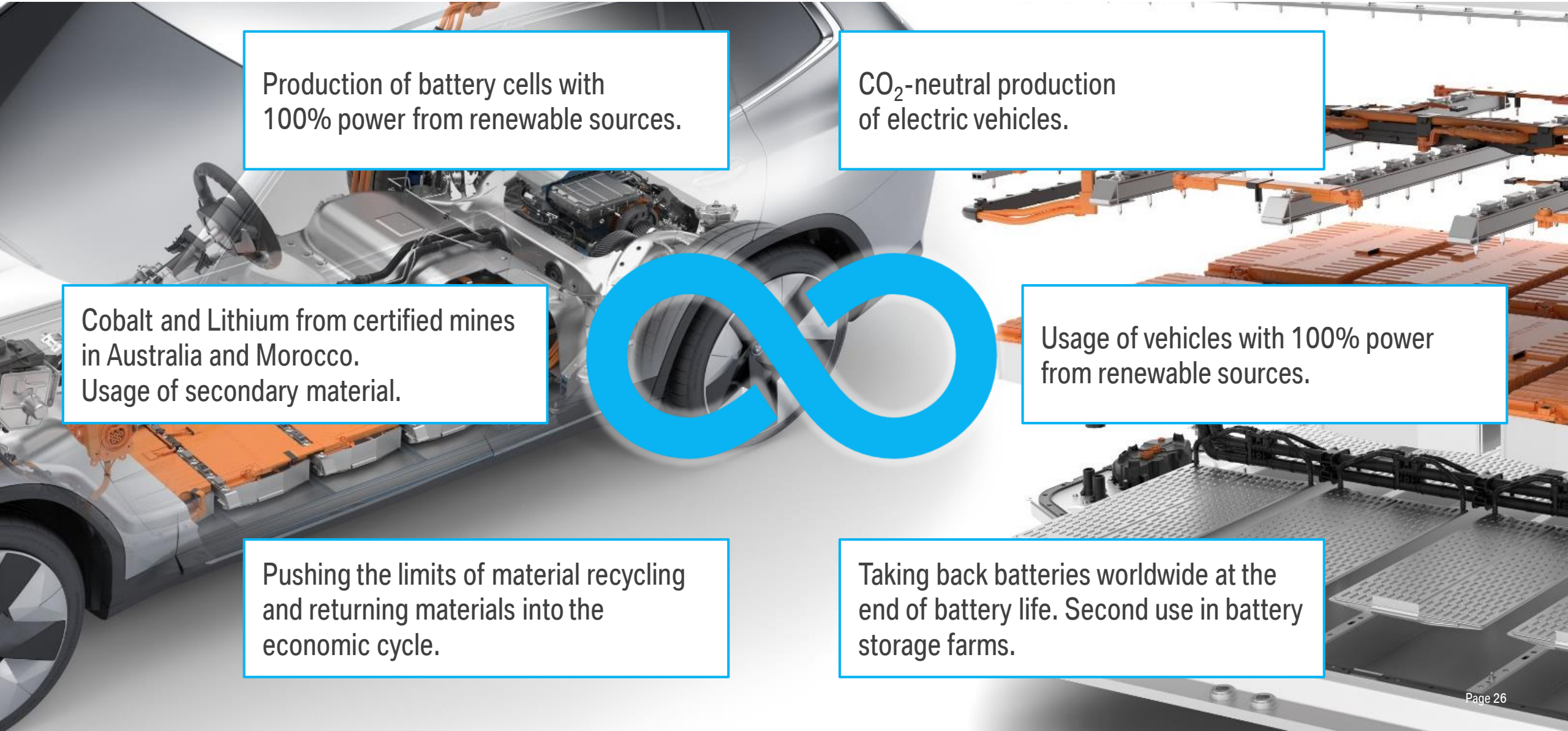
We want to significantly increase the share of secondary material in our vehicles until 2030 and are exploring very far-reaching scenarios.

Already today, we use around 25% secondary steel, up to 50% secondary aluminum in specific parts and up to 20% secondary thermoplastics.

Secondary material reduces CO_2 emissions greatly compared to primary material:

Factor 4-6 for aluminum, factor 2-5 for steel, factor 2-5 for thermoplastics – depending on alloy or material.

FROM RAW MATERIALS TO RECYCLING: WE ARE CREATING A GREEN MATERIAL CYCLE FOR BATTERY CELLS.



Production of battery cells with 100% power from renewable sources.

CO_2-neutral production of electric vehicles.

Cobalt and Lithium from certified mines in Australia and Morocco.
Usage of secondary material.

Usage of vehicles with 100% power from renewable sources.

Pushing the limits of material recycling and returning materials into the economic cycle.

Taking back batteries worldwide at the end of battery life. Second use in battery storage farms.

WE WILL DEEPEN OUR KNOWHOW OF BATTERY CELLS AND THEIR RECYCLING.

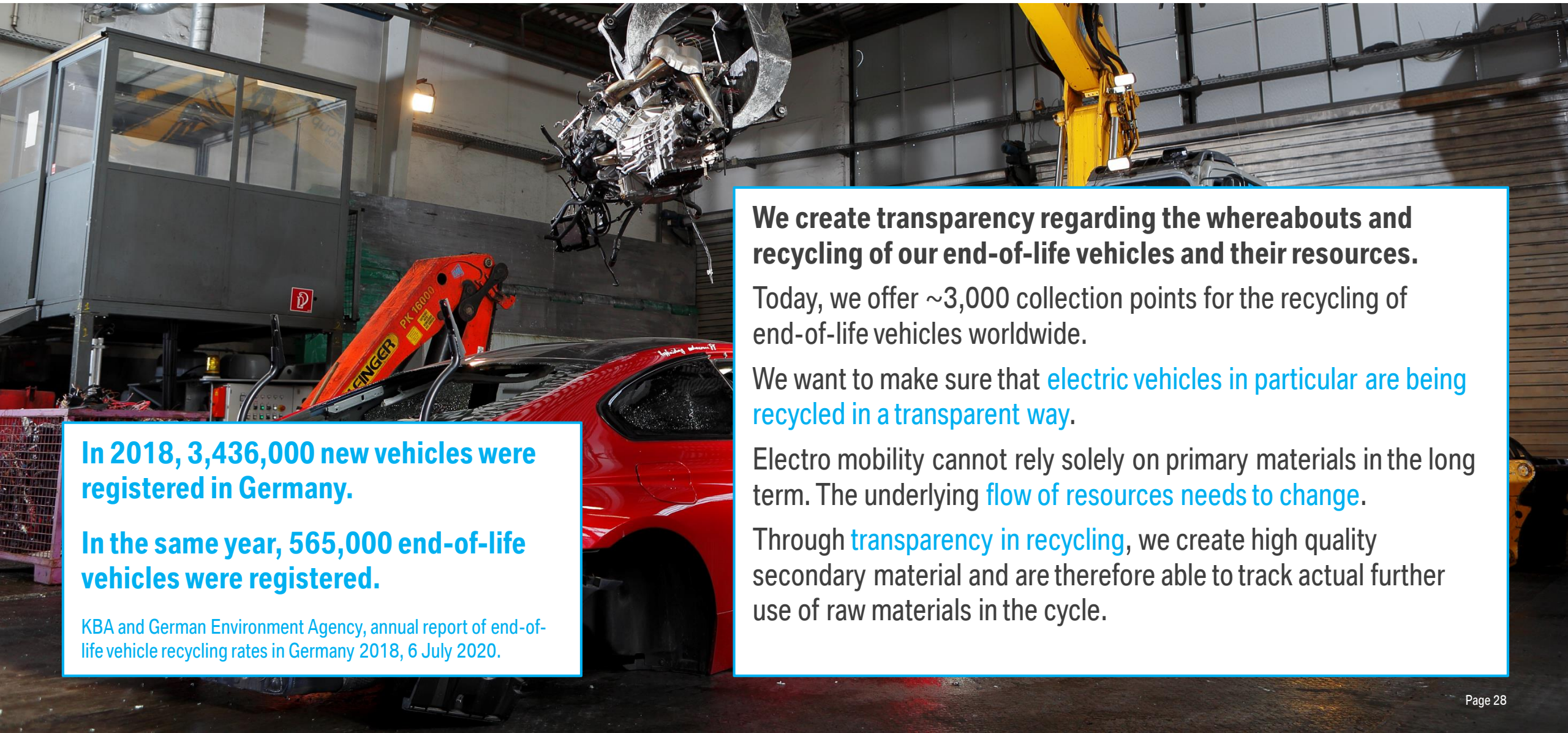
We extend our competencies in battery-cell production.

We are tapping into high-voltage batteries as a source of raw materials.

We have partnered with German recycling specialist Duesenfeld to develop a method that can achieve a recycling rate of up to 96% of the materials – including graphite and electrolytes. Currently, only thermoplastics wetted with electrolytes remain after the process.

We are taking back all used BMW high-voltage batteries worldwide – even though there is no legal requirement to do so.

CIRCULAR ECONOMY: WE ARE EXPLORING HOW WE CAN RETURN AS MANY END-OF-LIFE VEHICLES AS POSSIBLE INTO THE RESOURCE CYCLE.



In 2018, 3,436,000 new vehicles were registered in Germany.

In the same year, 565,000 end-of-life vehicles were registered.

KBA and German Environment Agency, annual report of end-of-life vehicle recycling rates in Germany 2018, 6 July 2020.

We create transparency regarding the whereabouts and recycling of our end-of-life vehicles and their resources.

Today, we offer ~3,000 collection points for the recycling of end-of-life vehicles worldwide.

We want to make sure that electric vehicles in particular are being recycled in a transparent way.

Electro mobility cannot rely solely on primary materials in the long term. The underlying flow of resources needs to change.

Through transparency in recycling, we create high quality secondary material and are therefore able to track actual further use of raw materials in the cycle.

The BMW Group is committed to the Paris Climate Agreement.

With our new direction, we are setting a course that is in accordance with the well below **two-degrees target.** We are generating effective impulses for a long-term functioning circular economy.

We will report on our progress every year in an **integrated report** and measure ourselves against our **science-based targets.**

The **compensation** of our Board of Management and executive management will also be tied to this.