

# Creating a recipe for **NET-ZERO**

A step-by-step guide to  
achieving a zero carbon future



Life Is On

**Schneider**  
Electric

[se.com/retail](https://se.com/retail)

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# Introduction

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The science is clear. So is the strategy.

Over 120 countries are now committing to net-zero 2050 goals. It is no longer a “nice to have” but a “must-have” to remain compliant and competitive. In its 2020 Survey of Sustainability Reporting, KPMG found that 80% of companies worldwide now report on sustainability. <sup>1</sup>

During that time, Schneider Electric™ established itself as a leading expert in sustainability and decarbonization. We ourselves are recognized for our best practices in sustainability, earning the #1 position from Corporate Knights in 2021. We're also a clean energy leader, the #1 largest corporate consultant on renewable energy purchasing, with 60% market share in the U.S., the most active market to-date, and have advised on large-scale renewable energy contracts in 8 countries across 4 continents. We're also the #1 builder of microgrids in the world, with over 300 successful projects in North America alone. We were recognized for our efforts in 2020 when we earned The Climate Group's inaugural Clean Energy Trailblazer award. We've not only accelerated our own carbon neutrality goal by five years to a 2025 target, we've also helped thousands of companies on their own decarbonization journeys.

As Schneider Electric, we have committed to be carbon neutral by 2025 and net-zero in our operations by 2030. We believe the buildings of the future need to be sustainable, resilient, hyper-efficient, and people-centric. But there's no need to wait, the technology is available today.

This paper lays out our holistic, replicable approach for organizational decarbonization. Our decades of experience in energy and sustainability consulting and technology spans across the realms of global commerce. It's this expertise that informs the four-stage process explored in this paper. With this proven roadmap, organizations of all kinds can define, set, deploy, and sustain decarbonization programs.

# #1

most sustainable company in 2021 from Corporate Knights

# 60%

U.S. market share of corporate renewable energy advisory services

# #1

builder of microgrids in the world

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<sup>1</sup> KPMG Impact, “The time has come: The KPMG Survey of Sustainability Reporting”, December 2020





# The need for rapid decarbonization

Restaurants use about five to seven times more energy per square foot than other commercial buildings. High-volume quick-service restaurants (QSRs) may even use up to 10 times more energy per square foot than other commercial buildings. Restaurants generally use the most electricity for kitchen equipment, followed by cooling, then lighting.<sup>2</sup>

Once relegated to the domain of environmentalists, today, climate change is a top concern among business and government leaders. There's also a growing recognition of the intersection between climate action and social justice. BIPOC (Black, Indigenous, and People of Color, low-income, and traditionally under-resourced and underrepresented communities have historically borne a greater burden from these impacts.

And although many of climate change's impacts are already felt today, its severity will increase dramatically over the coming years without immediate and substantial emissions reductions.<sup>3</sup>

<sup>2</sup> ENERGY STAR for Small Business: Restaurants

<sup>3</sup> Intergovernmental Panel on Climate Change, "Special Report: Global Warming of 1.5 °C."



## CLIMATE CHANGE IMPACTS

The impacts of a warming planet include, but are not limited to:

- Increasingly extreme weather events resulting from rising water and land surface temperatures
- Increased drought, affecting food production, water security, and producing conditions that escalate wildfires, floods, conflict, and human migration
- Rising sea levels that can cause nuisance flooding and erode existing coastlines, and that are an existential threat to communities in low-lying areas and island nations
- Extended warm seasons which enable the propagation of allergens, mosquitos and other insects, and disease
- Acidification of the oceans, which results in loss of marine biodiversity, increased algae blooms and, eventually, loss of sea-based livelihoods



# Why McDonald's is acting now

Much like the pandemic, climate change will increasingly pose challenges to business as usual. Organizations are not only threatened by environmental risks—wildfire-caused property damage, flooding, and disruption to natural resource availability—there are also organizational impacts, with threats to brand reputation, business models, and, ultimately, bottom lines.<sup>4</sup>

The approach we describe in this e-guide helps organizations achieve the full spectrum of decarbonization's benefits. Decarbonization is not only about limiting GHG emissions and conserving natural resources; it's increasingly just good business.

McDonald's Global Restaurant Building & Equipment Standards include minimum requirements and recommendations on systems such as lighting, refrigeration and the energy efficiency of heating, ventilation and air conditioning systems, as well as energy management and even the way in which buildings are constructed to optimize solar gain.

Through our work, we've seen how decarbonization helps McDonald's:

- Conserve resources and boost bottom lines
- Satisfy investors and other key stakeholders
- Ignite innovation and technological progress
- Stimulate organizational growth
- Grow industry influence, reputation, and brand
- Boost building valuation



## McDonald's US 20x200 By Design:

The sustainability program aimed to reduce energy and water by 20% by 2020 from a 2005 base year, using innovative strategies in the design of new restaurants. Including LED lighting, low oil-volume fryers, high-efficiency hand dryers, toilets and faucets, and low-spray valves.

In a concluding study, McDonald's U.S. 2020 prototype buildings have achieved a 26.4% reduction in electric use, and a 3.7% reduction in natural gas use from 2005. For water, they achieved a total water use reduction of 19%.

<sup>4</sup> Consider Pacific Gas & Electric (PG&E) Company, the utility held legally responsible for California's deadliest wildfires, in which 129 people lost their lives. The company has been fined multiple billions of dollars and declared bankruptcy in June 2020.



# Gaining momentum toward a net-zero future

As one of the world's largest restaurant companies, McDonald's believes they have a unique opportunity to mobilize the entire value chain to act now. In collaboration with their franchisees, and through relationships with suppliers, farmers, and ranchers around the world, they can help to catalyze action around emissions reductions and strengthen climate resiliency.

McDonald's has been on this journey for many years. In 2018, McDonald's became the first global restaurant company to set a science-based target approved by the Science Based Targets initiative (SBTi) to significantly reduce greenhouse gas (GHG) emissions. Efforts underway since 2018 have already resulted in an 8.5% reduction in the absolute emissions of restaurants and offices and a 5.9% decrease in supply chain emissions intensity against a 2015 baseline.

## McDonald's accelerates climate action

In pursuit of this ambition, McDonald's has committed to evolve their current 2030 targets to align with the SBTi Business Ambition for 1.5°C campaign and has joined the United Nations Race to Zero. McDonald's will increase the emissions reduction levels in its existing 2030 science-based target across all scopes of emissions in line with best practice guidance and a long-term reduction target to reach net-zero emissions by 2050.

*"We believe we have both a privilege and a responsibility to help lead on issues that matter most in communities – and there is no issue more urgent globally and of impact locally than protecting our planet for generations to come,"*

**- Chris Kempczinski**  
McDonald's President and  
Chief Executive Officer







# A trusted partner on your decarbonization journey

Schneider Electric offers a comprehensive, step-by-step, approach for restaurants on the path to net-zero – from strategy and implementation, to operation, optimization, and green building certification. With our services, software, and solutions, organizations can increase building valuation, exceed investor and consumer expectations, and meet net-zero targets, all while contributing to a healthier planet for us all. Our four-stage, holistic, and iterative process described in this paper can help any organization to progressively move towards their ambitions.



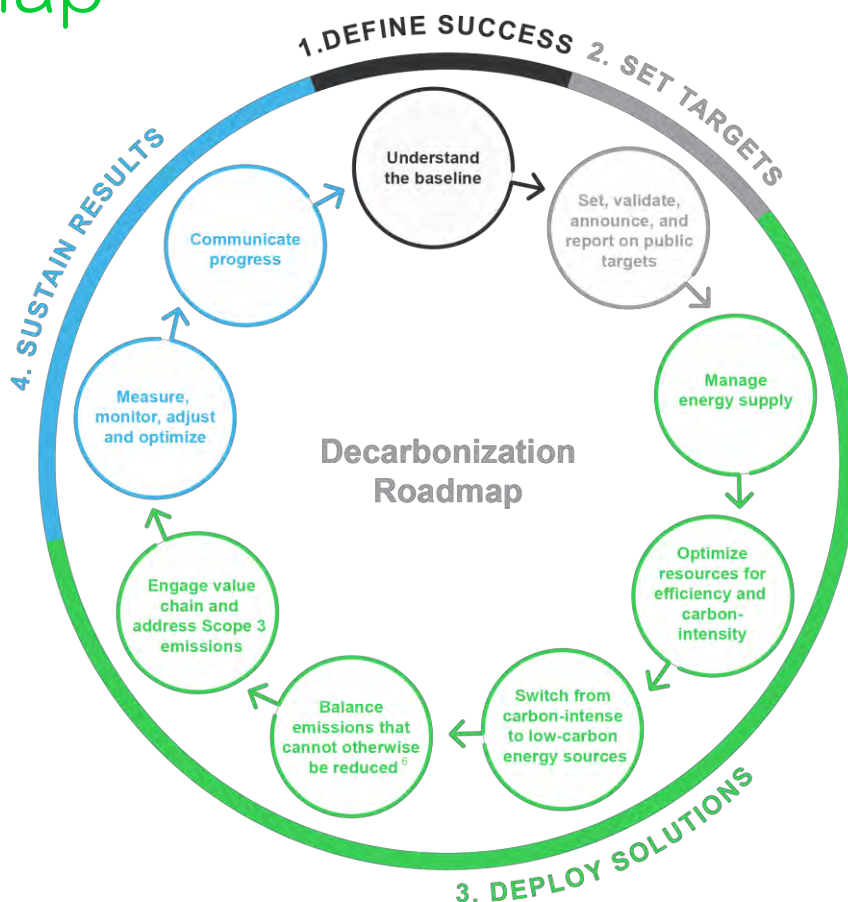


# Schneider Electric's Net-Zero roadmap

Decarbonization takes a relatively straight forward path. That's not to say it's easy; each step in the path can pose significant challenges and requires technological, financial, organizational, and governance capacity. Fortunately, new solution and financing models make decarbonized technologies more accessible, effective, and affordable than ever.

It's important to note that the steps can be steps can happen in parallel at any given point, some steps can be tailored to better align with the organizational strategy, and can be, by nature, iterative. Fluctuations in organizational resource demands can result in changes that impact decarbonization goals and timeline; the pathway isn't linear, it's circular. There are always greater steps organizations can take to help themselves or others become more efficient or decarbonized.<sup>5</sup>

Whether you are setting portfolio level targets, designing a new building, or looking for sustainable retrofit opportunities, the steps you take remain the same. Let us help you along the way.



## TIGHT BUDGETS? NO WORRIES

With the Energy as a Service financing model, organizations can purchase clean energy microgrids for zero upfront costs. We work with our partners to finance, build, operate, and maintain microgrids, and we charge clients a fixed monthly rate for green, resilient energy.

<sup>5</sup> For example, the Microsoft corporation, who, after committing to operational net-zero, [set goals to make itself "carbon negative"](#) through the offsetting of historical emissions from its founding in 1975.

<sup>6</sup> McDonald's follows the SBTi which requires companies to set targets based on emission reductions through direct action within their own boundaries or their value chains. Offsets are only considered to be an option for companies wanting to finance additional emission reductions beyond their science-based target (SBT) or net-zero target.





Stage

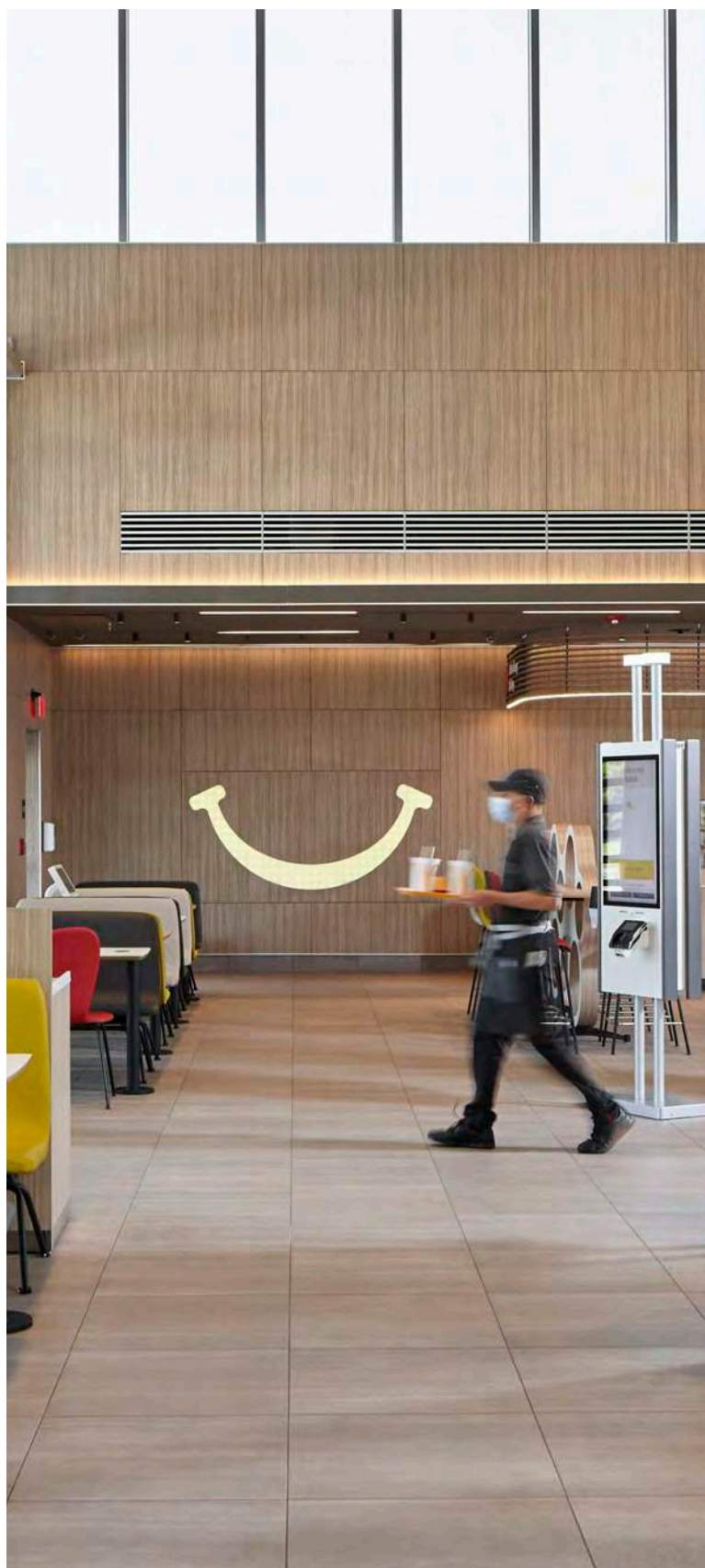
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## Strategize: define success

The expression, “You can’t manage what you don’t measure” is as true for decarbonization as any other organizational metric. Organizations must understand where they are today on the decarbonization pathway and what it is they aspire to achieve. Leaders across an organization must align on the vision and the strategy to achieve that vision. This is a foundational element to any program of change.

### How Schneider helps clients define success

- **Market intelligence and trends:** Schneider can perform in-depth market research to help organizations understand the competitive landscape of their industry and the available opportunities, anywhere in the world.
- **Benchmarking and footprint assessment:** We help organizations measure their baseline emissions and develop an understanding of the volume and type of emissions by source. Through the ongoing measurement of emissions data, we give clients a central system of record that enables a single source of reporting truth, even across thousands of sites.
- **Stakeholder engagement and journey mapping:** We work with our clients to identify and engage the right organizational stakeholders in a strategic discussion, aligning desired outcomes with the organization’s commitments.
- **Digital solutions:** EcoStruxure for Retail offers digital solutions, from device-level connected products, to edge control software for building, power, and microgrid management, to digital services, apps, and analytics to help continually optimize throughout the lifecycle of your building.





Stage

2

## Strategize: set targets

The type of decarbonization target(s) an organization sets, and the timeline to achieve those targets, is crucial to the overall success of any decarbonization program.

Although it was once in vogue to set a generic reduction target, based on either overall (i.e. absolute) emissions or the emissions profile of an organization's products or services (i.e. intensity), today, the most ambitious targets are aligned with prevailing climate science.

The Intergovernmental Panel on Climate Change (IPCC) recommendation is to limit human-caused global warming to 1.5 °C or less. Warming above this threshold has the potential to result in catastrophic planetary impacts.

Research by Schneider Electric and GreenBiz Group<sup>7</sup> has also found that it is essential for organizations to publicly announce their decarbonization and energy targets.

Publicly announced targets are likelier to:



Seek more ambitious reductions



Move organizations faster toward their goals



Result in greater overall confidence that the organization will achieve its goals

### How Schneider helps clients set targets

- **Analyzing risks and opportunities:** Alongside our clients, we assess and predict the potential upsides and downsides of decarbonization to help them set ambitious, yet achievable, goals.
- **Emissions roadmap development and design:** We develop and map decarbonization programs by identifying and validating target scenarios, key performance indicators, and funding opportunities.
- **Amplifying and validating public target setting:** We also partner with our clients to help them publicly announce their targets and to validate and report on their progress through leading indices, such as the Science-based Targets initiative (SBTi), SASB / TCFD / GRESB, CDP Climate Questionnaire, and the Global Reporting Initiative (GRI).

<sup>7</sup> Visit [insights.se.com](https://insights.se.com) for more information and to view the full report(s).





Stage

# 3

## Deploy Solutions: digitize and decarbonize

Once an organization understands where it is and where it's going, the essential next stage is to deploy solutions that will help achieve your goals. All the analysis and ambition in the world mean nothing if they are not tied to action.

Schneider manages

# \$30B

in energy spend on behalf of our clients annually

It's in the solution deployment stage where organizations take the bulk of the decarbonization pathway steps. These steps not only reduce emissions, but they also drive resource efficiency, resiliency, and innovation, thereby boosting positive bottom-line impact.

### Optimize procurement

For most organizations, energy is one of their most significant and most volatile <sup>8</sup> operational expenses. Managing these resources proactively is essential. As the largest and most experienced global energy manager, we support our clients in procuring, managing, and balancing their energy and carbon portfolios, including:

- Global commodity risk and analytics advisory services
- Competitive sourcing of energy resources and contract management
- Tracking and supervising energy performance and billing; invoice and rebate reconciliation
- Expert knowledge of global tariffs and regulatory trends for optimizing energy procurement

### Reduce energy through digitization and operation efficiency

Take action with integrated solutions that save money and energy, while fortifying resilience and sustainability across the lifecycle of your assets. We can help you create smart, digital, and efficient buildings with the following buildingDesigned to operate with 100% renewable energy and power management solutions:

#### • Level 1: Connected products

- Leverage connected space controllers, meters, sensors, valves, actuators and other devices that enable data transmission from the connected equipment for greater optimization of building systems.
- Gain access to accurate and continuous electricity usage monitoring and power diagnostics across all areas of a building's electrical distribution system from incoming power to final loads.
- Reduce carbon emissions and energy consumption by defining where and when to use energy, and through improved water and energy metering, and enhanced commissioning.
- Power meters enable knowing where and when to take action to reduce energy usage and support 20-40% energy reduction.

**34%**  
average energy reduction and up to 15 points toward LEED certification from smart, connected room control solutions

<sup>8</sup> U.S. Energy Information Administration, "What is Price Volatility?"



- **Level 2:** Building and power management software

- Includes HVAC control, lighting control, energy & power management, fire safety, security & access control, and workplace management systems.

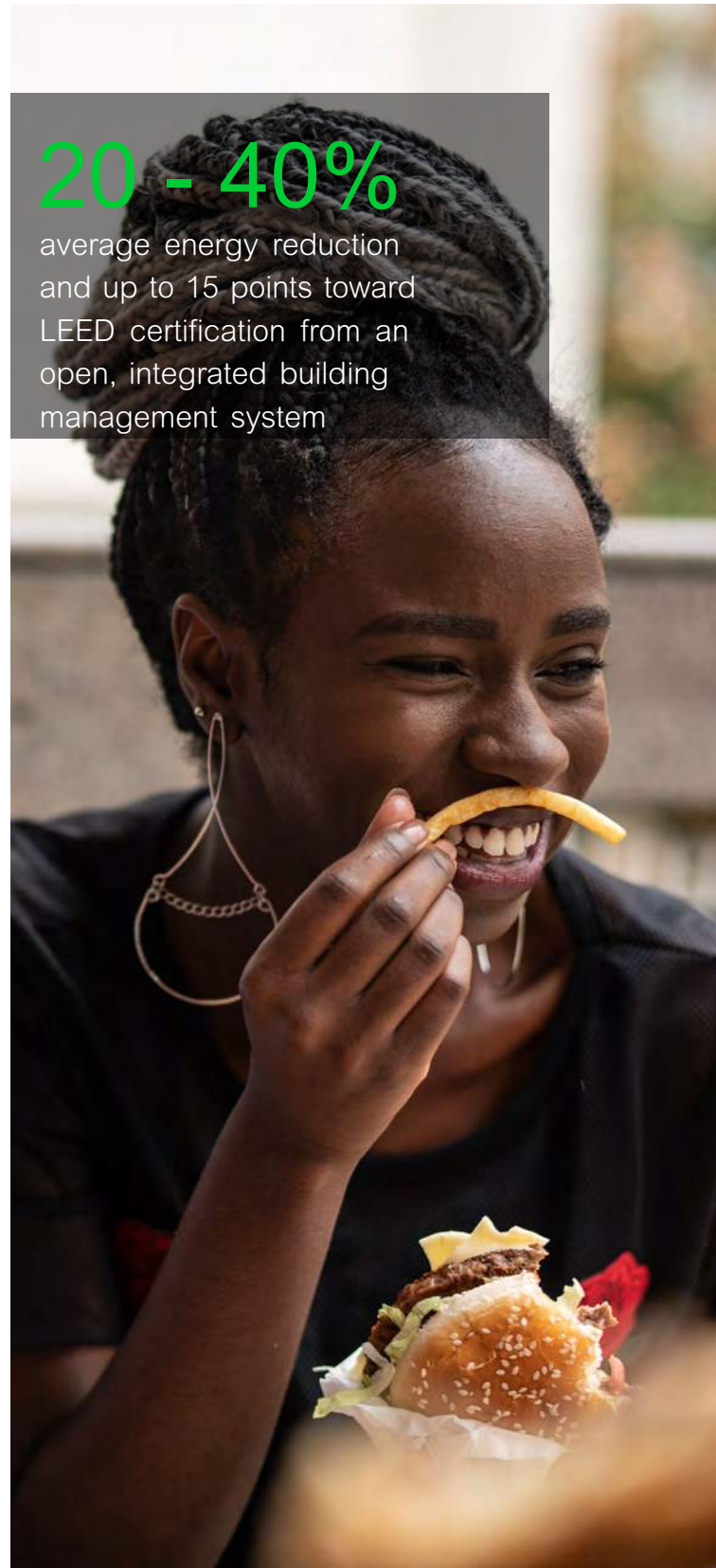
- **Level 3:** Predictive analytics and digital services

- Gain key insights into your building operations by monitoring systems and identifying faults to proactively address building inefficiencies.
- Achieve traceability, efficiency, and resiliency with alarm and condition monitoring, tenant optimization, and site health reporting.

**0.13**  
**kWh/sq ft**  
average energy savings  
with advanced building  
analytics

**20 - 40%**

average energy reduction  
and up to 15 points toward  
LEED certification from an  
open, integrated building  
management system







## Leverage electrification to replace carbon-intensive energy

Organizations can achieve significant carbon reductions — and potential budgetary savings and stability— through fuel switching or low-carbon replacement. This replacement can take a variety of forms, including renewable energy, alternative fuel sources, and electrification.

# 50%

average reduction of CO2 emissions with renewable energy generation

We're the world's leading advisor to organizations on renewable energy purchasing.<sup>9</sup>

We also walk the talk; we've committed to 100% electric fleet vehicles and 100% renewable electricity through The Climate Group's EV100 and RE100 programs. Our portfolio of electrification solutions helps electrify operations:

- Renewable energy, onsite microgrid, and eMobility
  - Acquire and deploy clean and distributed technologies, including combined heat and power (CHP), renewable gas, renewable thermal heat, fuel cells, biofuels/biomass, green hydrogen, and battery storage
  - Provide restaurants with EV charging and eMobility solutions including fleet electrification and Fleet as a Service
  - Proactively and efficiently manages your site's energy production including renewables and demand.
  - Protect critical loads during outages or abnormal grid conditions with onsite energy.
  - Provide energy to cover increased electricity load due to EV charging.

# 20%

average savings on energy costs through cost predictability

## Finance your sustainability initiatives

- GreenStruxure, a joint venture between Schneider Electric and Huck Capital, that delivers modular, standardized microgrids and Energy as a Service solutions to medium-size commercial, industrial, and governmental buildings in the U.S.



## Connect with other trusted sustainability partners and experts

- Unique in its industry, the EcoXpert™ Partner Program represents a worldwide ecosystem of more than 4k partners and solution providers – each trained and certified by Schneider Electric on our EcoStruxure™ architecture and platform. Equipped with a cross-expertise skill set that spans building & residential automation, power distribution & management, and digital services,
- EcoXperts have a deep understanding of the criticalities that their customers face and have the highly-sought-after knowledge to deliver best-in-class automation and digital solutions that drive efficiency and sustainability in their buildings. We are proud to say that EcoXpert partners are the implementation arms of EcoStruxure all over the world.

<sup>9</sup> To date, Schneider Electric has advised on the global procurement of more than 8.5 gigawatts of renewable electricity by non-utility organizations.

## Supply and value chain initiatives

For many organizations, the largest emissions source lies within their supply and value chains—outside their direct control. Leading organizations know that true carbon neutrality can only be achieved by engaging, encouraging, and empowering their suppliers and partners to reduce emissions within their own organizational scope. We provide a variety of services to our clients to measure and reduce value chain emissions, including:

- Emission reduction programs via renewable energy procurement and electrification
- Sustainable procurement practices based on Schneider Electric's own best-in-class program
- Other value chain initiatives, including lifecycle assessments and circular business practices



We're helping Walmart empower its supply chain to avoid 1 billion—yes, billion with a “B”—tons of carbon emissions through renewable energy purchasing.





## CASE STUDY

New and existing restaurants designed to accelerate sustainability

# McDonald's Portugal

Working together across Portugal since 2016



### The Challenge:

- Understand energy usage
- Find energy savings
- Move to a condition base (predictive) maintenance for critical assets (frying machines, cold rooms, HVAC systems, etc.)
- Benchmark the efficiency of energy use across devices, processes, and sites

### The Solution:

- Incorporate smart technologies to understand energy usage, e.g. production area, HVAC, lighting
- Real-time visualization of actionable data for all areas or only key areas in the restaurant
- Real-time communication and alarms supporting energy monitoring and condition-base maintenance

### The Outcome:

- Proven energy savings of at least 15%
- Smart alarming to prevent or identify potential asset malfunctions before they happen for critical assets (e.g. UPS machines, freezer & cooler, production area)
- 68 restaurants with Schneider Electric solutions since 2016

*Outcomes vary according to restaurant size, number of customers, sales, hours of operation, location and other factors.*

*“Collaborating with companies that understand our business and challenges is more important than ever. Schneider Electric took the time to learn how McDonald's operates. This enabled them to deliver a personalized solution that is helping us achieve key milestones to net-zero.”*

**- Miguel Teixeira Pinto,**  
Head of Construction, McDonald's

Sustainability is not a "one and done" type of project, it is a journey of continuous improvement.

### What's Next for McDonald's Portugal

Integration of Solar, energy storage and microgrids are the next step to net-zero.



## CASE STUDY

New restaurant sets the bar high for sustainability

# Australia's 1000<sup>th</sup>

Melbourne, Australia

### The Challenge:

- Design hub for testing industry-leading sustainability innovations.
- Understand and reduce energy use
- Find energy waste in the context of operations
- Benchmark the efficiency of energy use across devices, processes, and sites

### The Solution:

- Microgrid ready power system
- Green energy sources onsite: 6% of total of the total energy is from solar
- Real-time communication supporting energy and resource monitoring for data-driven operations & maintenance

### The Outcome:

- Designed to operate with 100% renewable energy
- One integrated, flexible and cyber secure platform for aggregation, analysis and decision making for energy and resource data
- Real-time occupancy-adjusted energy consumption



*“As a sustainability innovation hub, Restaurant 1000 will play a crucial role in enabling us to continue to design and build commercially practical sustainability solutions into every new Macca’s restaurants in the years to come.”*

**- Diana Grosmann**  
National Director of Development,  
McDonald’s Australia





Stage

# 4

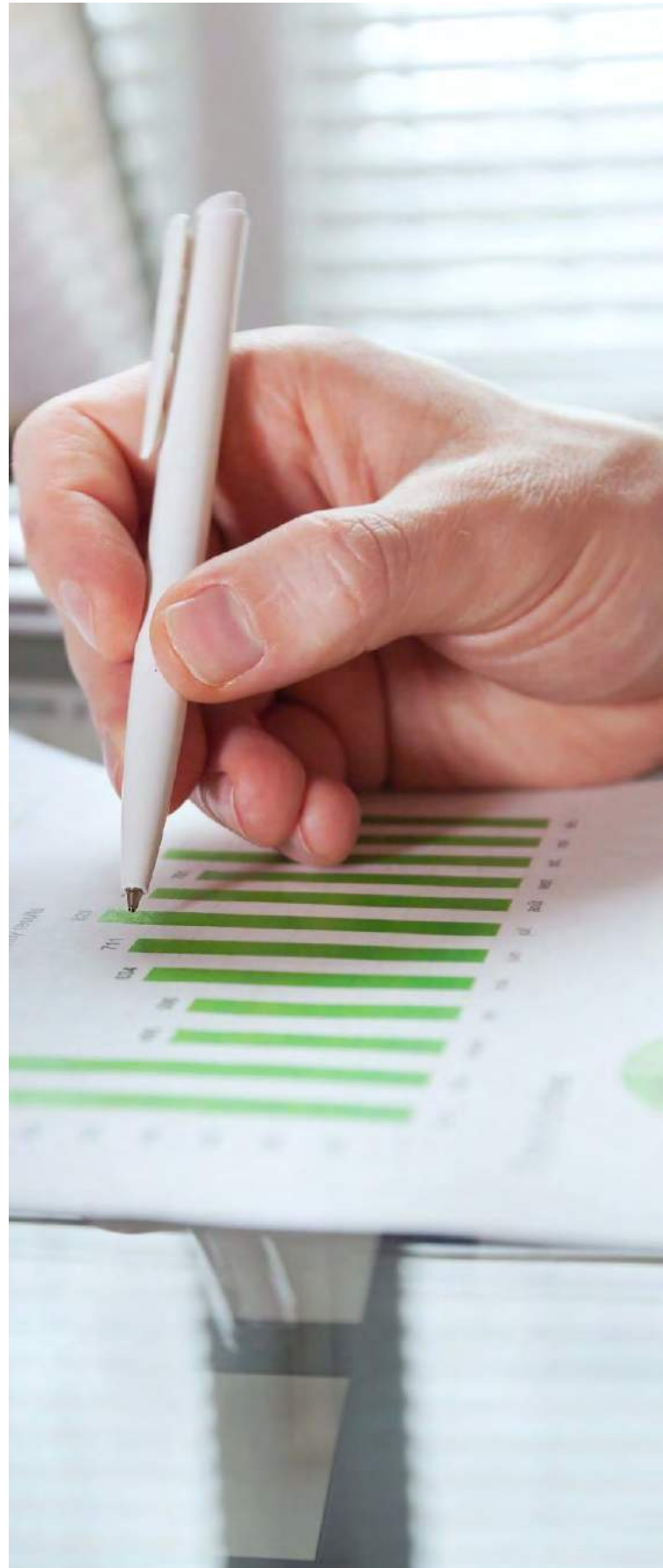
## Sustain results

Emission-reduction programs, once set into motion, require consistent attention to ensure they are performing as expected. Market forces, legislation, regulation, technological advancements, organizational growth or contraction, and financial changes can impact these programs.

Organizations must consistently monitor, measure, adjust, and optimize to sustain their decarbonization efforts. Doing so allows a company to communicate progress confidently to internal and external stakeholders, advancing its reputation and influencing others in its ecosystem.

### How Schneider helps clients sustain results

- **Performance tracking and analytics:** Our portfolio of EcoStruxure Advisor software monitors real-time performance of solutions and resources, allowing organizations to make optimal decarbonization and energy-related decisions
- **Operational performance services:** We track the performance of renewable and cleantech assets to ensure they're operating as expected across both energy generation and financial metrics
- **Internal and external reporting and communications:** Our reporting, marketing, and communications services enable client engagement with stakeholders and elevate and amplify organizational progress and success
- **Green building certification:** Our experts can help you understand specific areas of certification and how our solutions can help you achieve points toward LEED certification.





# The decade of decarbonization

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The United Nations has declared the period from 2020 – 2030 as the decade of action. To avoid the most severe human, planetary, and economic impacts of climate change, organizations must urgently act. Our comprehensive portfolio of strategic and tactical solutions for decarbonization makes us an unparalleled partner for any organization.

Will you join us in our commitment to a zero carbon future?  
We can help get you there.

[Discover more.](#)



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