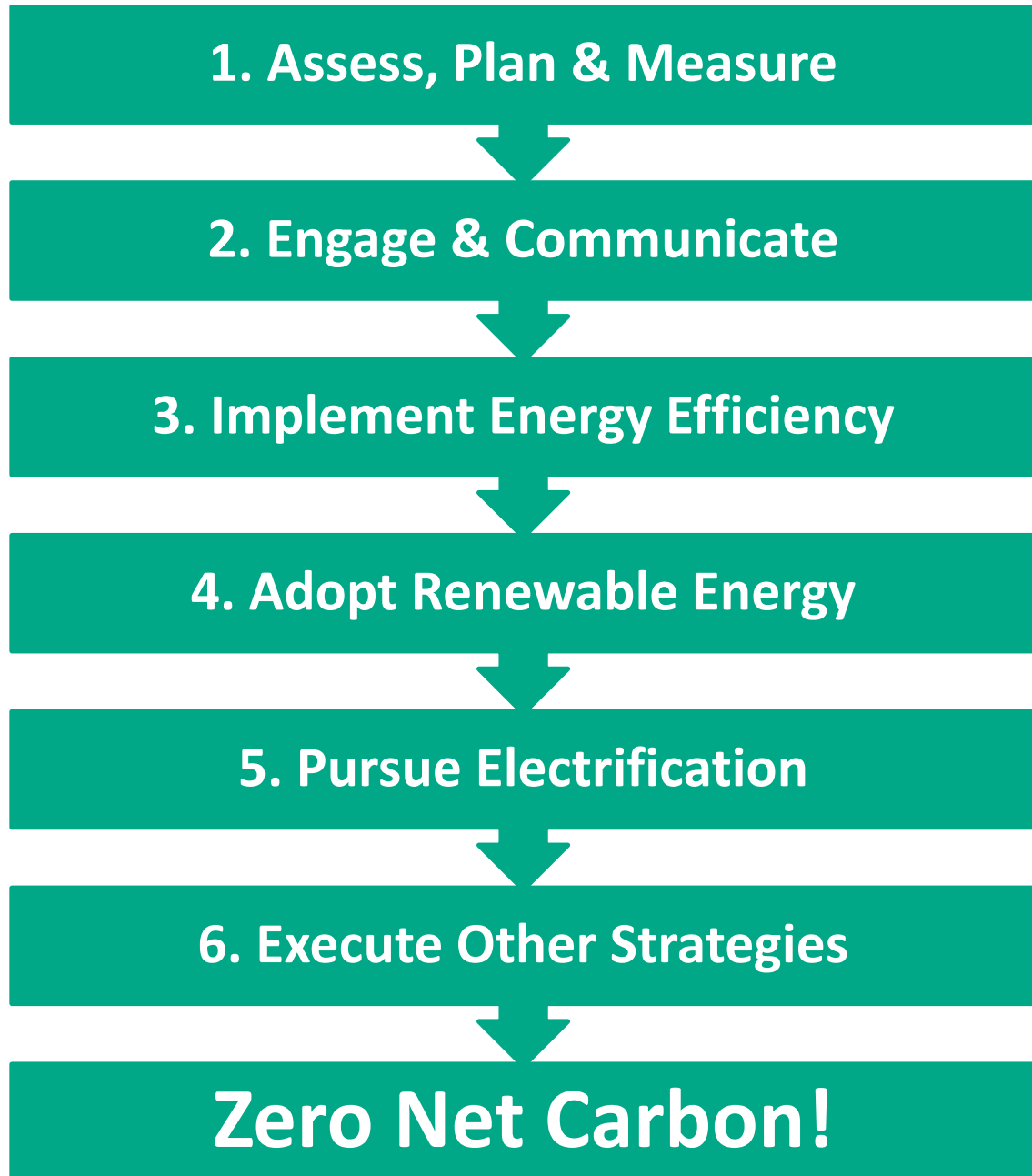


# Pathway to Net-Zero Commercial Offices

A guide to help commercial offices become greenhouse gas pollution free



### **The Challenge**

The United Nations Intergovernmental Panel on Climate Change, the State of Colorado, Boulder County, and the City of Boulder have all set greenhouse gas pollution reduction goals of 50% by 2030 and 90% by 2050. To avoid the worst impacts of the climate crisis, every office and individual must participate. The good news is that Offices are well positioned to be leaders in turning this challenge into an opportunity.

This pathway demonstrates the steps that your office can take to become more energy efficient, save money, and reduce your climate impact to zero. This pathway is a clear and simple way to understand where you are currently and what the major steps are on the journey.

### **The Goal**

The goal of the effort is for offices to take active and visible action in transitioning their facilities to have zero climate impact. A second goal is to share the work offices are doing to motivate and inspire other offices to act, both locally and across the country.

### **The Vision**

A significant number of offices have become inspired and empowered to take action that demonstrate the benefits of converting to efficient lighting and equipment in addition to adding renewable energy. Many are also actively working with their own supply chains to inspire and empower their stakeholders to take similar action. Through making these efforts highly visible, this leadership inspires a larger movement that significantly accelerates the adoption of a sustainability lifestyle – first around energy, but also around other critical areas like food, use of resources, and relationship to the natural world.

## Step 1: Assess, Measure & Plan

It is important to first understand what opportunities are appropriate for your office and what incentives are available. To determine success, you need to benchmark your energy use and calculate greenhouse gas emissions, repeating this annually. Building from the opportunities identified and the benchmarking data you can create a plan and set goals that drive your journey toward becoming a net-zero office. Feel free to use the rest of the action steps in this document to help inform your office's plan.

Assess Opportunities	Target Date	Person Responsible
<input type="checkbox"/> Review and adopt the City of Boulder's <a href="#">climate action commitment</a> for your office*		
<input type="checkbox"/> <a href="#">Engage with PACE</a> to learn about resources, incentives and opportunities*		
<input type="checkbox"/> <a href="#">Work with PACE</a> and Xcel to complete building assessments*		
<input type="checkbox"/> Review local sustainability ordinances and how they apply to your office		
<input type="checkbox"/> Identify electric conversion opportunities to pair with renewable energy		
<input type="checkbox"/> Evaluate renewable energy opportunities (such as solar PV, RECs, Community) to offset electric load		
<input type="checkbox"/> Determine budget and available financing options		

Measure and Track	Target Date	Person Responsible
<input type="checkbox"/> Establish a benchmarking process to measure energy use*		
<input type="checkbox"/> Calculate annual greenhouse gas emissions**		
<input type="checkbox"/> Continue to measure and track progress against goals**		

Plan	Target Date	Person Responsible
<input type="checkbox"/> Develop the action plan (determine level of property owner commitment)		
<input type="checkbox"/> Evaluate cost/payback of each measure to help prioritize budget		
<input type="checkbox"/> Set tangible and actionable goals, and timeline**		

\* First wave of actions

\*\* Ongoing Actions

## Step 2: Engage and Communicate

It is beneficial to begin engaging with your staff, customers and other stakeholders at the start of this process. However, you will need to engage with all these groups throughout your journey to minimize barriers and maximize impact. Engaging with customers and staff is great for offices, many studies have shown that staff and customers both invest more in offices that are value driven. Additionally, by publicizing and sharing your success you can inspire others to work toward effective climate solutions.

Staff Engagement	Target Date	Person Responsible
<input type="checkbox"/> Appoint an energy steward, champion and/or develop a green team *		
<input type="checkbox"/> Create a forum for staff to share and suggest their ideas		
<input type="checkbox"/> Share goals and commitments with management and staff		
<input type="checkbox"/> Provide ongoing sustainability educational opportunities for your staff**		

Stakeholder Engagement	Target Date	Person Responsible
<input type="checkbox"/> Engage with property owners/property managers to gauge interest *		
<input type="checkbox"/> Present climate action plan to property owner/manager to get buy in. Change lease if necessary		
<input type="checkbox"/> Create a green purchasing policy and distribute to your supply chain		
<input type="checkbox"/> Join industry specific groups to learn how peers are addressing sustainability**		
<input type="checkbox"/> Participate in sustainability leadership groups to better understand current trends**		

Communication and Recognition	Target Date	Person Responsible
<input type="checkbox"/> Publish your climate action commitment on your website, in your office, or other forum *		
<input type="checkbox"/> Publish your goals on your website, in your office, or other forum		
<input type="checkbox"/> Communicate your wins as they happen on your website, in your office, or other forum **		
<input type="checkbox"/> <a href="#">Become PACE Certified Business</a>		

\* First wave of actions

\*\* Ongoing Actions

### Step 3: Implement Energy Efficiency

The checklists of energy efficient measures below are an example of how you may list and prioritize measures according to your action plan. The first section are actions that make sense to implement regardless of whether you own or lease your space as they have quick paybacks and/or enhance the quality of your space. The second set of actions might require partnering with your property owner/manager to implement if you lease your space.

Operational Projects		Target Date	Person Responsible
Interior Lighting Upgrades	<input type="checkbox"/> Identify what lighting temperatures, fixture and bulb types suit your space*		
	<input type="checkbox"/> Determine over-lit areas and reduce unnecessary fixtures*		
	<input type="checkbox"/> <a href="#">Replace inefficient lighting with LED</a> (Energy Star or DLC)		
	<input type="checkbox"/> Install controls (daylight/occupancy sensing opportunities)		
Kitchen Equipment	<input type="checkbox"/> Inventory all kitchen equipment (log age and note any Energy Star labels)		
	<input type="checkbox"/> <a href="#">Replace inefficient equipment with Energy Star</a>		
	<input type="checkbox"/> Service equipment keep refrigeration coils clean and free of dust**		
HVAC Optimization and Envelope	<input type="checkbox"/> Weatherstrip drafty doors and windows*		
	<input type="checkbox"/> Adjust thermostat temperature setpoints and setbacks		
	<input type="checkbox"/> Insulate ductwork and/or bring into condition space		
Water Heating Efficiency	<input type="checkbox"/> Appropriate thermostat temperature setpoints*		
	<input type="checkbox"/> <a href="#">Replace faucet aerators</a>		

Higher Capital Investment Projects (done in partnership with property owner/manager)		Target Date	Person Responsible
Outdoor Lighting Upgrades	<input type="checkbox"/> <a href="#">Replace inefficient lighting with LED</a> (Energy Star or DLC)		
	<input type="checkbox"/> Consider curfew controls and/or timers to reduce run-time		
HVAC Optimization	<input type="checkbox"/> Add a building automation system		
	<input type="checkbox"/> Perform test & balance of air distribution system		
Building Envelope Improvements	<input type="checkbox"/> Air tightness testing to identify air leakage, durability issues		
	<input type="checkbox"/> Increase insulation R-Value in roof		
	<input type="checkbox"/> Invest in efficient windows or apply window film to mitigate solar heat gain		

\* First wave of actions

\*\* Ongoing Actions

## Step 4: Adopt Renewable Energy

The checklists of renewable actions below are an example of what you might include in your action plan. The first section looks at installing renewable energy on your building and might require you to partner with your property owner/manager to implement if you lease your space. The second section provides alternative ways to purchase renewable energy if installing is not an option or if you cannot meet the load demands with self-generation.

Higher Capital Investment Project (done in partnership with property manager)		Target Date	Person Responsible
Install Renewables	<input type="checkbox"/> Review <a href="#">incentives</a> , financing and power purchasing agreement options*		
	<input type="checkbox"/> Get bids from several contractors*		
	<input type="checkbox"/> Install/Purchase Renewable Energy		

Other Renewable Options		Target Date	Person Responsible
Community Solar	<input type="checkbox"/> Investigate community solar opportunities*		
	<input type="checkbox"/> Invest in community solar		
Renewable Energy Credits	<input type="checkbox"/> Investigate renewable energy credit opportunities*		
	<input type="checkbox"/> Invest in community solar renewable energy credits		

\* First wave of actions

\*\* Ongoing Actions

## Step 5: Pursue Electrification

The checklists of electrification actions below are an example of what you might include in your action plan. Electrification is a crucial step to becoming a net-zero office because regardless of how efficient you are or how much energy you produce with renewables if you use natural gas to power heating and/or equipment you are still burning fossil fuel.

Electrification	Target Date	Person Responsible
<input type="checkbox"/> <a href="#">Review incentives and financing</a> *		
<input type="checkbox"/> Convert from gas to efficient electric kitchen equipment		
<input type="checkbox"/> Convert from gas to efficient electric heating		
<input type="checkbox"/> Reduce distribution losses with tankless water heating		
<input type="checkbox"/> <a href="#">Install electric vehicle charging stations</a>		

\* First wave of actions

\*\* Ongoing Actions

## Step 6: Execute Other Strategies

The impact you can have spans further than your buildings and the energy they consume. Below is a list of things you could consider adding to you plan that begin to address the broader climate impact of your office. The scope of what you address may vary and you likely will add additional actions.

Other Emission Reduction Strategies		Target Date	Person Responsible
Transportation Alternatives	<input type="checkbox"/> <a href="#">Install bike racks</a> to encourage staff and customer cycling		
	<input type="checkbox"/> Identify ways to increase pedestrian friendly zones		
	<input type="checkbox"/> <a href="#">Educate tenants/patrons</a> on available transportation options		
Landfill Waste Diversion	<input type="checkbox"/> Develop a <a href="#">zero-waste</a> program		
	<input type="checkbox"/> Create a green purchasing policy and distribute to your supply chain		
	<input type="checkbox"/> Develop a green cleaning policy		
Efficient Water Use	<input type="checkbox"/> Use drip irrigation and native drought-tolerant plants		
	<input type="checkbox"/> Conduct an <a href="#">outdoor irrigation assessment</a>		
	<input type="checkbox"/> Replace inefficient toilets with WaterSense-labeled models		

