

# Accelerating business-wide transformation

WORKSHOP EXERCISE

# Accelerating business-wide transformation to achieve net zero

- Workshop Exercise

## INSTRUCTIONS

This package contains the material for a practical workshop exercise to help organizations identify and prioritize decarbonization actions, in order to accelerate business transformation to net zero.

The material includes a **backboard** and **14 cards** representing decarbonization actions.

Since all companies have unique value chain footprints, this includes one 'fill in the blank card' with the emissions in your company's value chain that are the hardest to influence.

Position your cards on the backboard based on whether each action will yield high or low emission reductions, and whether internal buy-in will be hard or easy to secure.

The QR codes on the cards and backboard lead to additional relevant resources.

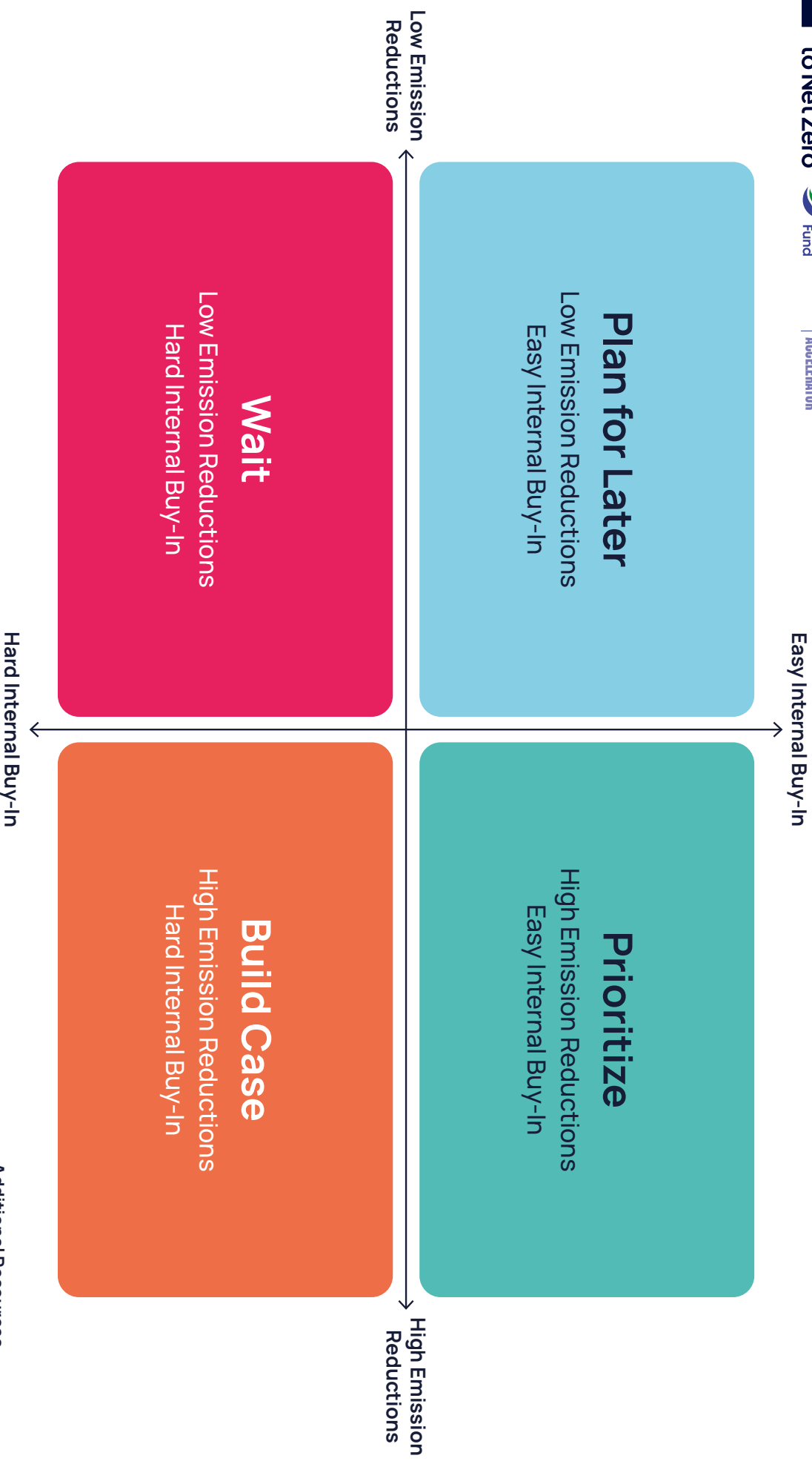
## INSTRUCTIONS FOR PRINTING

Please print on recycled or sustainably produced paper.

This workshop exercise can be conducted using only the fronts of the workshop cards, along with the backboard (Pages 3 to 7). The reverse of the cards have been included (Pages 8 to 11) to access further resources. Please only print the necessary pages.

For the workshop cards, print each page individually, and one-sided. Carefully cut around the border of each of the individual cards.

For the backboard, once printed this will be ready to use.



**Questions to consider:**

1. Are solutions available where emissions are located?
2. How do these actions support your company's business strategy?
3. What functions need to support implementation?
4. What are the capital requirements to act?
5. Do you have data collection processes in place to measure success?
6. For hard-to-abate emissions, what innovation, collaboration or policy engagement would enable reductions?
7. What actions can be safely put aside until closer to the target year?

**Additional Resources**

Questions? Reach out to:  
TONZ@bsr.org

[netzeroaction@edf.org](mailto:netzeroaction@edf.org)



The Inflation  
Reduction Act



Net Zero  
Investment Strategy

## Lighting Upgrades

Lighting accounts for an estimated 10% of energy consumption in commercial buildings.

### Common Implementation:

- › Efficiency upgrades (CFLs, LEDs, HIDs)
- › Daylight harvesting systems
- › Occupancy sensors
- › Behavioral changes

### Marginal Abatement Cost:

- › ~-\$90/tonne

### Average Emissions Reduction:

- › ~75% of lighting footprint

### Relevant Functions:

- › Operations, Finance

Incorporating green spaces around commercial buildings has positive benefits. Companies should consider the needs of employees and local communities and involve them in sustainability initiatives to advance inclusive value creation.

## HVAC Upgrades

Optimizing / upgrading HVAC systems can substantially slash energy consumption; HVAC can represent over 40% of a commercial building's energy consumption.

### Common Implementation:

- › Perform proper maintenance
- › Reduce heating/cooling load (e.g. occupancy, temperature settings)
- › Calibrate and tune system controls
- › Consider upgrading HVAC equipment

### Marginal Abatement Cost:

- › ~-\$50/tonne

### Average Emissions Reduction:

- › ~35-50% of HVAC footprint

### Relevant Functions:

- › Operations, Finance

Incorporating green spaces around commercial buildings has positive benefits. Companies should consider the needs of employees and local communities and involve them in sustainability initiatives to advance inclusive value creation.

## Building energy management systems

Energy management systems can track real-time data on energy consumption to identify areas for improvement and reduce energy costs.

### Common Implementation:

- › Consider whole-building or systems level EMS
- › If existing EMS is >12 years old, consider full system replacement
- › If EMS is <12 years old, consider retrofit upgrade to a more sophisticated system

### Marginal Abatement Cost:

- › Varies

### Average Emissions Reduction:

- › ~20-25% of building footprint

### Relevant Functions:

- › Operations, Finance

Incorporating green spaces around commercial buildings has positive benefits. Companies should consider the needs of employees and local communities and involve them in sustainability initiatives to advance inclusive value creation.

## Renewable energy credits (RECs)

RECs offer an accessible way to purchase renewable energy, support its development and offset energy use. However, RECs drive less renewable energy production than other tools.

**Common Implementation:**

- › Identify key green power purchase decision-makers
- › Screen suppliers for reputation, certification, finance and credit
- › Ensure all costs are included beyond incremental costs
- › Evaluate risks and costs over time

<b>Marginal Abatement Cost:</b>	<b>Average Emissions Reduction:</b>
---------------------------------	-------------------------------------

- |                      |          |
|----------------------|----------|
| › ~\$0.003/kWh in US | › Varies |
|----------------------|----------|

**Relevant Functions:**

- › Operations, Finance, Procurement

Respecting human rights and minimizing environmental impact in the value chain is key. Companies can advance access and affordability of clean energy for underserved communities.

## Green Tariffs

Utilities provide green tariffs to energy buyers in regulated markets for purchase of bundled green energy. But options that create additional clean energy (e.g., PPAs, on-site renewables) have more impact.

**Common Implementation:**

- › Identify key green power purchase decision-makers
- › Screen suppliers for reputation, certification, finance and credit
- › Ensure all costs are included beyond incremental costs
- › Evaluate risks and costs over time

<b>Marginal Abatement Cost:</b>	<b>Average Emissions Reduction:</b>
---------------------------------	-------------------------------------

- |          |          |
|----------|----------|
| › Varies | › Varies |
|----------|----------|

**Relevant Functions:**

- › Operations, Finance, Procurement

Respecting human rights and minimizing environmental impact in the value chain is key. Companies can advance access and affordability of clean energy for underserved communities.

FRONT OF CARDS

## Power Purchase Agreements (PPAs)

Customers buy renewable energy from providers at a fixed price over time. PPAs eliminate the upfront investment of on-site systems and support additional project development.

**Common Implementation:**

- › Identify key green power purchase decision-makers
- › Seek suppliers with strong track record and financial standing
- › Consider supplier locations/alignment with your needs
- › Note risk and cost changes over time

<b>Marginal Abatement Cost:</b>	<b>Average Emissions Reduction:</b>
---------------------------------	-------------------------------------

- |                     |          |
|---------------------|----------|
| › ~\$0.05/kWh in US | › Varies |
|---------------------|----------|

**Relevant Functions:**

- › Operations, Finance, Procurement

Respecting human rights and minimizing environmental impact in the value chain is key. Companies can advance access and affordability of clean energy for underserved communities.

## Onsite renewables

Given ample space and capital, onsite renewables are a great way to create environmental benefits and directly power facilities with renewable energy.

**Common Implementation:**

- › Properly size on-site systems by bundling with energy efficiency improvements
- › Evaluate energy generation capacity and space constraints
- › Coordinate with local governments to achieve greater regional benefits

<b>Marginal Abatement Cost:</b>	<b>Average Emissions Reduction:</b>
---------------------------------	-------------------------------------

- |   |          |
|---|----------|
| › ~\$0.05 - 0.2/kWh for US commercial sites | › Varies |
|---|----------|

**Relevant Functions:**

- › Operations, Finance, Procurement

Respecting human rights and minimizing environmental impact in the value chain is key. Companies can advance access and affordability of clean energy for underserved communities.

## Decarbonize owned and leased vehicles

Transitioning to zero-emissions vehicles reduces long term costs, mitigates exposure to fuel price fluctuations, and decreases air and noise pollution.

### Common Implementation:

- › Plan for charging infrastructure
- › Evaluate current fleet to prioritize vehicles to electrify
- › Calculate total cost of ownership
- › Consider a pilot program
- › Establish goals

### Marginal Abatement Cost:

- › < \$0/tonne (varies by vehicle type/size)

### Average Emissions Reduction (global impact):

- › Hybrid, short-haul: >20%
- › Long-haul: 10-20%

### Relevant Functions:

- › Operations, Finance, Procurement

Electrifying fleets reduces harmful air pollution in local communities. Respecting human rights and minimizing the environmental impact of extraction and production processes across the EV value chain is key.

## Load optimization

Increasing the load factor of your trips will lead to more efficient trips, fewer miles driven, and reduced emissions.

### Common Implementation:

- › Establish defined, performance-based metrics focused on achieving cost-effective emissions reductions
- › Partner with logistics partners with similar environmental goals
- › Use software to analyze and improve load efficiency without damaging products

### Marginal Abatement Cost:

- › < \$0/tonne

### Average Emissions Reduction (global impact):

- › 10-20%

### Relevant Functions:

- › Operations

Fewer miles driven will reduce air and noise pollution in communities.

FRONT OF CARDS

## Route optimization

Iterative route optimization in response to changes in demand can reduce overall freight miles and emissions.

### Common Implementation:

- › Establish well-defined, performance-based metrics focused on achieving cost-effective GHG emissions reduction
- › Partner with logistics partners that have the same environmental mindset and goals
- › Utilize software that can help optimize routes and streamline operations

### Marginal Abatement Cost:

- › < \$0/tonne

### Average Emissions Reduction:

- › 10-20% (reflects potential global impact on transport)

### Relevant Functions:

- › Operations

Identification of new transportation routes should take into account possible impacts on local communities and ecosystems, and improve local transportation infrastructure where the opportunity arises.

## SAF purchase for air travel

Sustainable aviation fuel is the primary existing approach to reduce air travel emissions.

### Common Implementation:

- › Work with established buyers' alliances/ coalitions to support investments in/offtake of SAF
- › Develop internal policies to reduce business travel

### Marginal

#### Abatement Cost:

- › ~\$50-400/tonne

### Average Emissions

#### Reduction:

- › 60-80% of lifecycle CO2 emissions

### Relevant Functions:

- › Operations, Finance, Procurement

Controversy over land use implications of SAF continues. Crop-based biofuels used for SAF production can trigger land-use impacts and is associated with the conversion of natural ecosystems.

## Net zero product innovation (use of sold products)

Innovating net zero products and services can help reduce your carbon footprint and deliver GHG reductions for customers.

### Common Implementation:

- › Collaborate internally and externally to identify solutions across product lifecycle
- › Consider how to incorporate low-carbon materials, produce less waste, use renewable energy in production, or re-purpose removed GHG emissions in raw materials
- › Consider if services may assist others in measuring/controlling emissions

### Marginal Abatement Cost:

- › Varies

### Relevant Functions:

- › R&D, Procurement, Finance, Marketing

Companies can advance an equitable transition through access and affordability to low-carbon products and services.

FRONT OF CARDS

## Buyer-supplier engagement (purchased goods and services)

Communicating goals and incentivizing suppliers to support emissions reductions in their operations reduces emissions in your supply chain.

### Common Implementation:

- › Communicate your GHG goals to suppliers
- › Incentivize suppliers with preferential financial treatment, contractual requirements, and recognition
- › Provide suppliers with tools, trainings and guidance to set, achieve and report progress on climate goals

### Marginal Abatement Cost:

- › Varies

### Relevant Functions:

- › Procurement

Suppliers need adequate support through financing, resources, and capacity building to meet emissions reductions expectations. A sustainable supply chain also respects human rights and promotes equality.

## Other (company-specific hard-to-abate emissions)

Each company is unique!

What is your biggest emissions challenge?

Use this card to identify a company-specific source of emissions that is hard to abate.

## Lighting Upgrades

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Resources from EDF:

*This card synthesizes publicly available information and reflects industry averages.*

## HVAC Upgrades

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Resources from EDF:

*This card synthesizes publicly available information and reflects industry averages.*

REVERSE OF CARDS

## Building energy management systems

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Resources from EDF:

*This card synthesizes publicly available information and reflects industry averages.*



## Renewable energy credits (RECs)



Resources from EDF:

*This card synthesizes publicly available information and reflects industry averages.*

## Green Tariffs



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REVERSE OF CARDS

## Power Purchase Agreements (PPAs)



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## Onsite renewables



Resources from EDF:

*This card synthesizes publicly available information and reflects industry averages.*

## Decarbonize owned and leased vehicles

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Resources from EDF:

*This card synthesizes publicly available information and reflects industry averages.*

## Load optimization

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Resources from EDF:

*This card synthesizes publicly available information and reflects industry averages.*

REVERSE OF CARDS

## Route optimization

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Resources from EDF:

*This card synthesizes publicly available information and reflects industry averages.*

SAF purchase for air travel



Resources from EDF:

*This card synthesizes publicly available information and reflects industry averages.*

Net zero product innovation (use of sold products )



Resources from TONZ:



Resources from EDF:

*This card synthesizes publicly available information and reflects industry averages.*

REVERSE OF CARDS

Buyer-supplier engagement (purchased goods and services)



Resources from TONZ:



Resources from EDF:

*This card synthesizes publicly available information and reflects industry averages.*

Other (company-specific hard-to-abate emissions)



Resources from EDF: