

# **FOREVER** PROJECT

**BUILDING A SUSTAINABLE TOMORROW**

## 2030 **MASTER PLAN**

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# MESSAGE FROM OUR CEO

Dear Team Members and Friends,

Our 75-year journey as a resort company defines and demonstrates a heritage of stewardship, leadership, creativity, and innovation. Today, as Boyne Resorts endeavors to transform the North American four-season resort experience, we must also aim to help lead our industry and communities toward a sustainable tomorrow, ensuring our next 75 years and future generations are afforded the same quality of life we have and that our resorts represent. It is with this backdrop that we launched our ForeverProject.

The ForeverProject Master Plan will guide us in this mission and reflects our culture of embracing new technologies and ways of doing business. The Plan outlines efforts necessary to reach our aggressive net zero carbon emissions by 2030 goal and supports our commitment to be a leader in sustainable business practices. It is important that each of us embrace the guidance it provides. This will not only increase the likelihood of achieving these goals ourselves, it will also help inform, motivate and educate others in this critical effort. Mitigating the impacts of climate change is a responsibility each of us carries and can be accomplished together as individuals and as a company, nation, and united world.

Your contributions to our recent progress are greatly appreciated and I am hopeful you will be a proud advocate and supporter of these important efforts at work and in your communities.

Sincerely,



Stephen Kircher  
President and CEO Boyne Resorts



# ACKNOWLEDGEMENTS

Achieving Boyne Resorts' ForeverProject goals requires action and collaboration throughout our operations, commensurate with the scale of the challenge ahead. Our commitment to collaboration is reflected in the creation of this plan, which incorporates coordinated input from representatives at each resort, alongside that of corporate leadership.

Many thanks go to all who contributed to this plan and will continue to bring it to life in the coming years as we work together to build a more sustainable tomorrow.

## FOREVERPROJECT MASTER PLAN LEADERSHIP TEAM

Special thanks to the core team that tirelessly led the development of Boyne Resorts' ForeverProject Master Plan:

Amy Fonte, Big Sky Resort  
Brad Keen, Boyne Resorts  
Mari Kissinger, The Highlands

Taylor Middleton, Boyne Resorts  
Jay Scambio, Boyne Resorts

Input from each resort team and our corporate team was critical to the creation of a plan that will guide action in every area of our operations. Many thanks to those who provided support and encouragement throughout the development process:

Roland Andreasson, Boyne Resorts  
Julie Ard, Boyne Resorts  
Frederic Barbier, Boyne Resorts  
Dan Beeler, Boyne Resorts  
Mac Bevier, Loon Mountain  
Mike Chumbler, The Highlands  
Aaron Clark, Boyne Mountain  
Keith Collins, Boyne Resorts  
Jeremy Cooper, Boyne Resorts  
Michael Costello, Inn at Bay Harbor  
Jenn Dickie, Cypress Mountain  
Mike Doyle, Jr., Brighton Resort  
Bernie Fredrich, Boyne Resorts  
Ed Grice, Boyne Mountain  
Brian Heon, Sunday River  
Nick Herrin, Boyne Resorts  
Beatrice Johnson, Sugarloaf  
Stephen Kircher, Boyne Resorts

Nick Lambert, Boyne Resorts  
Tara Lauder, The Summit at Snoqualmie  
Guy Lawrence, The Summit at Snoqualmie  
Abby Layton, Brighton Resort  
Ralph Lewis, Pleasant Mountain  
Nate Maclure, Pleasant Mountain  
Kate Matthews, Sunday River  
Troy Nedved, Big Sky Resort  
Brian Norton, Loon Mountain  
Jason Perl, Boyne Mountain  
Josh Richter, Boyne Resorts  
Barb Rooney, Boyne Resorts  
Brendan Ryan, Boyne Resorts  
Karl Strand, Sugarloaf  
Bob Turner, Boyne Resorts  
Mike Unruh, Boyne Resorts  
Randy Watson, Gatlinburg SkyLift Park  
Cathy Witherspoon, Boyne Resorts

## BRENDLE GROUP CONSULTANT TEAM

Imogen Ainsworth, Master Plan Lead  
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Katie Kershman, Graphic Design

Zakri Siegel, Data Analytics  
Becca Stock, Project Scenario  
Modeling





# BOYNE RESORTS 2030 MASTER PLAN EXECUTIVE SUMMARY



**FOREVERPROJECT**  
BUILDING A SUSTAINABLE TOMORROW

Throughout our 75-year history, Boyne Resorts has created a legacy of environmental stewardship and conservation. From patenting our highly efficient snowmaking equipment nearly 50 years ago to achieving 100% clean electricity across our operations in 2021, we are mindful in prioritizing creative and innovative initiatives to protect, preserve, and sustain the land on which we depend.

While we are proud of our progress, we know that the next few years will be the most important yet if we are to mitigate impacts of the global climate crisis we currently face. Acknowledging our responsibility to do everything in our power to leave a positive legacy for future generations, Boyne Resorts is committed to achieving **net zero greenhouse gas emissions across our operations by 2030**.

The ForeverProject Master Plan was developed to provide an understanding of what it will take to get there.

Through engagement with staff and leadership, a significant amount of data and detail was gathered to help quantify the magnitude of the challenge ahead and begin to identify the actions and investments necessary to reach our shared goal. This plan charts a pathway that enables us to reduce our carbon footprint while balancing environmental and economic sustainability.

## GOALS

### NET ZERO EMISSIONS

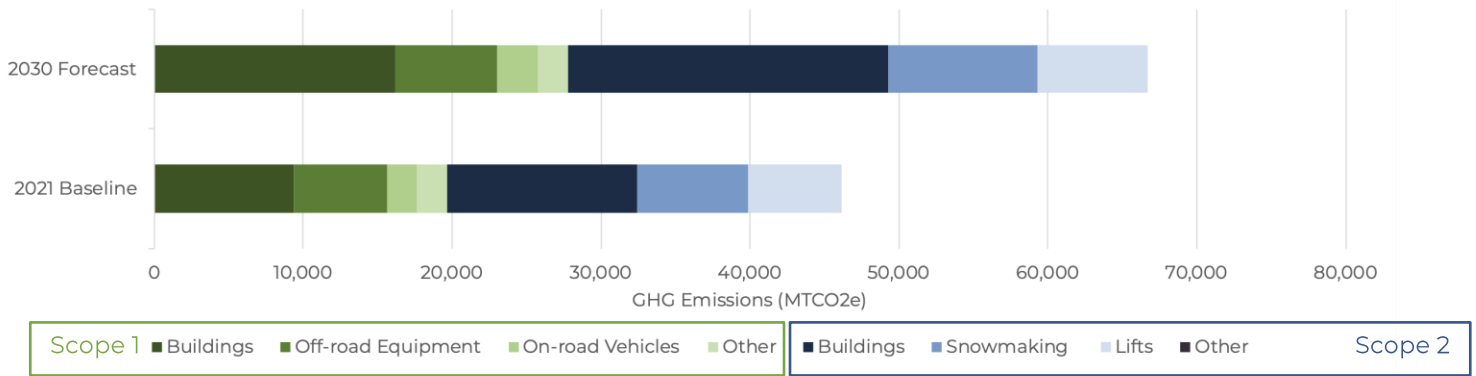
Boyne Resorts is committed to a goal of reducing carbon emissions to net zero throughout our North American operations by 2030.

### 100% CLEAN ELECTRICITY

An important step in reaching our net zero carbon emissions goal is to power all resorts and facilities with 100 percent clean electric energy.

# OUR EMISSIONS TODAY AND IN 2030

To map a pathway to net zero emissions, we first needed to understand our current emissions and future trajectory.

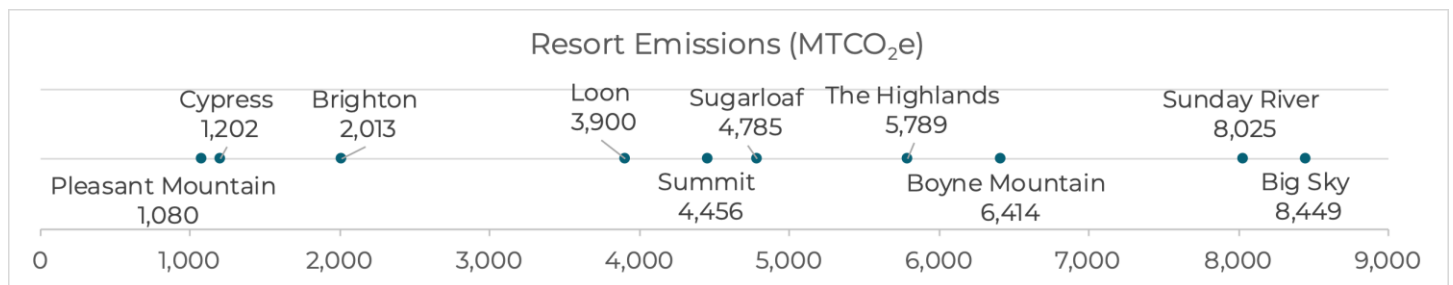


Boyne Resorts FY 2020-21 Baseline and FY 2029-30 “Business-as-Usual” Greenhouse Gas Emissions Forecast

Our company-wide fuel and electricity emissions (Scopes 1 and 2) for financial year 2020-21 was calculated. We then developed a 2030 “Business-As-Usual” emissions forecast for financial year 2029-30 that accounts for anticipated growth in terrain, buildings, lifts, snowmaking, and annual visitation at each resort. Without swift and ambitious action, Boyne Resorts’ total emissions could rise by 45% within the next seven years.

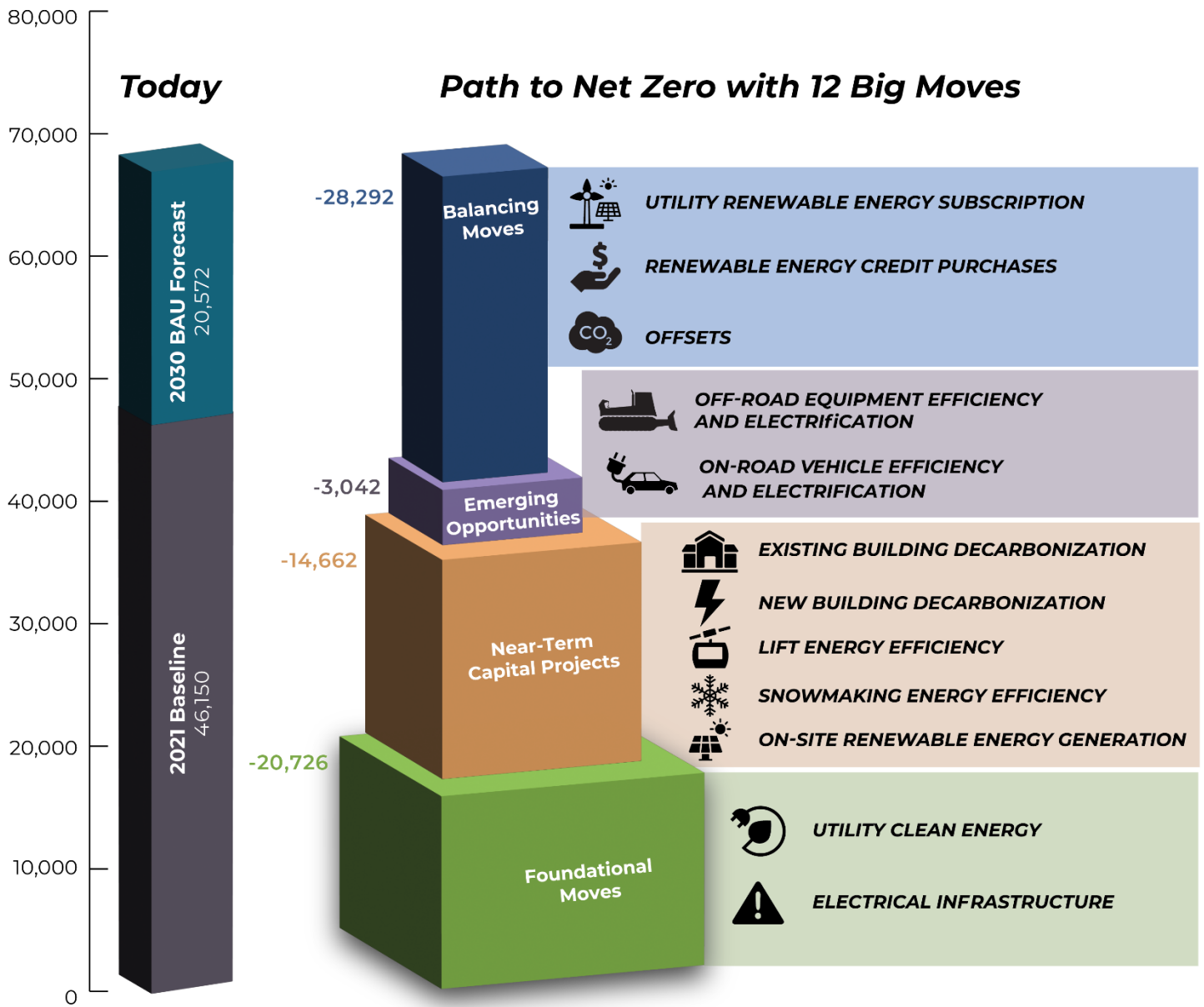
## RESORT-SPECIFIC EMISSIONS

Recognizing the unique characteristics of each of our resorts, individual emissions inventories and forecasts were created to inform the development of resort-specific pathways and action plans. The chart below summarizes total emissions by resort.



# PATHWAY TO NET ZERO EMISSIONS

Twelve high-impact actions were identified that cumulatively will propel us forward in the pursuit of our aggressive, yet attainable net zero emissions and 100% clean electricity goals. These actions are Boyne Resorts' Big Moves and they represent our commitment to unprecedented collaboration and progress on climate action across our operations.



The ForeverProject Master Plan defines a clear and strategic pathway with immediate, and short- and medium-term action steps identified for each Big Move. The plan also highlights staffing considerations along with opportunities for corporate leadership and support for resort-scale projects and initiatives.

In bringing our Big Moves to life, we are not only reducing our carbon footprint, we are realizing utility bill and maintenance cost savings, improved health and safety, and an enhanced resort experience for team members and guests.

Boyer Resorts is committed to continuing our current climate investment and ramping our level of investment to meet the scale of the challenge ahead. In addition, we recognize the importance of leveraging external funding to further accelerate our pathway to net zero.



*Photo from Big Sky Resort lift operations*



*Photo from The Highlands summer activities*

As we move forward with implementation, diligent tracking and consistent reporting on our progress can be expected. Annual reporting and bi-annual modeling updates for NSAA's Climate Challenge is also a source of progress measurement. Tracking includes evaluating how our Big Moves are playing out on the ground and is key to being prepared to adjust our course of action, if needed.

Finally, we are excited about the opportunities for partnership that this ForeverProject Master Plan creates. We

are not alone in this journey and look forward to collaborating with industry peers and local partners at each of our resorts to realize our goals over the next critical seven years.

*“Greatness is not a function of circumstance. Greatness, it turns out, is largely a matter of choice and conscious discipline.”*

*– Jim Collins*



# RESORT PROFILES

Our Boyne Resorts ForeverProject Master Plan describes twelve Big Moves to meet our net zero carbon emissions goal by 2030. While this effort requires company-wide planning and action, each resort's attraction, and division is unique, requiring a customized approach. This section of the Master Plan includes resort-specific analysis and dedicated profiles outlining each property's unique pathway to net zero (Figure 11).

These profiles were developed using data provided by each property, input received during planning workshops, and additional context provided through internal surveys.

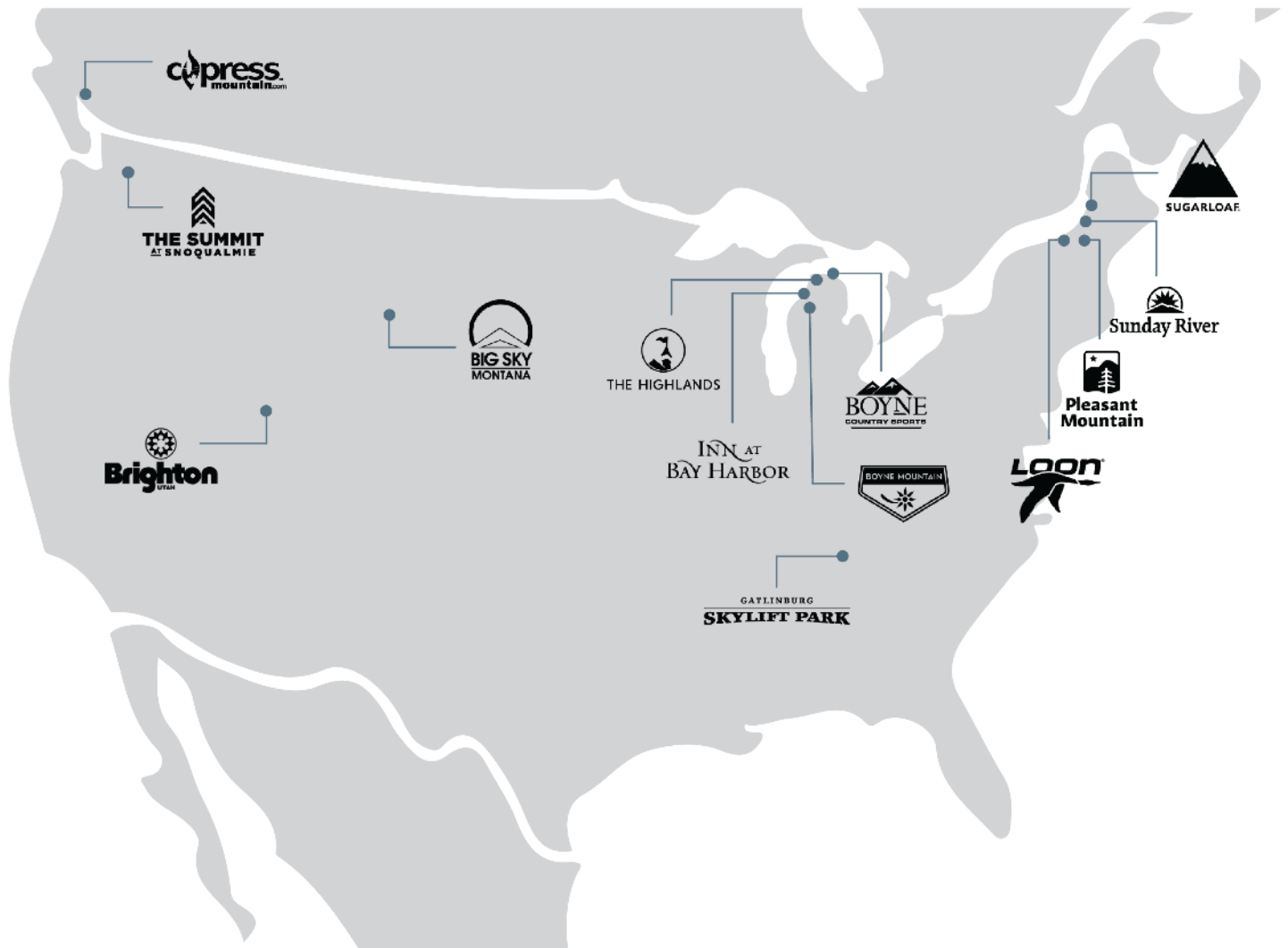
















Figure 11. Boyne Resorts Properties



## NET ZERO EMISSIONS AT EACH BOYNE RESORTS PROPERTY

Due to the unique characteristics of properties, we developed an emissions inventory, a 2030 forecast, and an individual Net Zero Pathway for each one.

Property Name	FY 2020-21 Baseline (% of company-wide total)	FY 2029-30 Forecast (% of company-wide total)	Foundational Moves	Near-Term Capital Projects	Emerging Opportunities	Balancing Moves
 <b>Big Sky Resort</b>	8,449 MTCO <sub>2</sub> e (18%)	20,450 MTCO <sub>2</sub> e (31%)	12%	18%	2%	67%
 <b>Sunday River Resort</b>	8,025 MTCO <sub>2</sub> e (17%)	9,393 MTCO <sub>2</sub> e (14%)	46%	19%	5%	31%
 <b>Boyne Mountain Resort</b>	6,414 MTCO <sub>2</sub> e (14%)	7,074 MTCO <sub>2</sub> e (11%)	40%	29%	1%	31%
 <b>The Highlands</b>	5,789 MTCO <sub>2</sub> e (13%)	7,757 MTCO <sub>2</sub> e (12%)	33%	44%	3%	20%
 <b>Sugarloaf</b>	4,785 MTCO <sub>2</sub> e (10%)	6,097 MTCO <sub>2</sub> e (9%)	42%	21%	9%	29%
 <b>The Summit at Snoqualmie</b>	4,456 MTCO <sub>2</sub> e (10%)	5,310 MTCO <sub>2</sub> e (8%)	51%	18%	5%	26%
 <b>Loon Mountain Resort</b>	3,900 MTCO <sub>2</sub> e (8%)	5,413 MTCO <sub>2</sub> e (8%)	47%	14%	3%	36%
 <b>Brighton Resort</b>	2,013 MTCO <sub>2</sub> e (4%)	2,489 MTCO <sub>2</sub> e (4%)	15%	13%	12%	59%
 <b>Cypress Mountain</b>	1,202 MTCO <sub>2</sub> e (3%)	1,588 MTCO <sub>2</sub> e (2%)	0%	15%	25%	59%
 <b>Pleasant Mountain</b>	1,080 MTCO <sub>2</sub> e (2%)	1,114 MTCO <sub>2</sub> e (2%)	39%	9%	15%	37%
 <b>Gatlinburg SkyLift Park</b>	37 MTCO <sub>2</sub> e (<1%)	37 MTCO <sub>2</sub> e (<1%)	12%	48%	0%	41%
 <b>Inn at Bay Harbor</b>	<i>Data not finalized at time of plan development</i>					
 <b>Boyne Country Sports</b>	<i>Data not finalized at time of plan development</i>					
 <b>Corporate Facilities</b>	<i>Data not finalized at time of plan development</i>					
<b>Total</b>	<b>46,150</b>	<b>66,722</b>	<b>31%</b>	<b>21%</b>	<b>4%</b>	<b>44%</b>



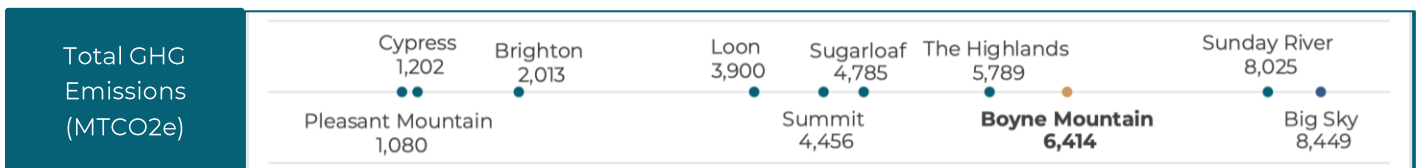
# BOYNE MOUNTAIN RESORT

## 2030 NET ZERO EMISSIONS PLAN

Boyne Mountain Resort’s 2030 Net Zero Emissions Plan supports Boyne Resorts’ commitments to 100% clean electricity and net zero greenhouse gas emissions by 2030. It is based on specific conditions and opportunities at Boyne Mountain Resort, located in Boyne Falls, Michigan.

Boyne Mountain Resort has the 3<sup>rd</sup> highest GHG emissions among Boyne Resorts portfolio and is above its average for emissions per ski and summer visitor.

### RESORT EMISSIONS COMPARISON (FY 2020-21 BASELINE)



This plan provides the specifics of Boyne Mountain Resort’s journey to net zero emissions including:

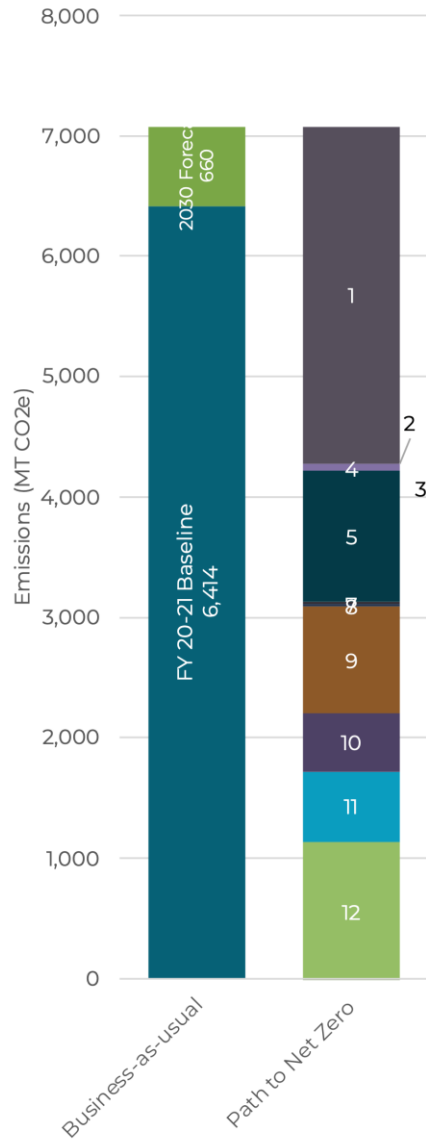
- Breakdown of energy use and GHG emissions by Scope, fuel type, and operations in baseline year FY 2020-21 and forecasted for FY 2029-30
- General factors and performance metrics influencing Boyne Mountain Resort’s journey to net zero emissions
- Big Moves and their individual contributions to GHG reductions
- Short-term implementation priorities, project highlights, and community partnership opportunities



#### Project Highlights

- Partnered with CMS Energy and Consumers Energy on construction of a 1.5 MW solar array on Boyne Mountain Resort property
- Implemented several updates to boost energy efficiency in laundry building, including replacement of three dryers with a single large dryer, installing a motion sensor lighting system, and updating washers
- Replaced a portion of slope lighting with energy-efficient LEDs

# PATHWAY TO NET ZERO



Big Move		2030 Performance Target	Annual Savings Starting in 2030
1	Utility Clean Energy	✓ Emissions factor: 0.235 MTCO2e/MWh	2,801 MTCO2e (40%)
2	Electrical Infrastructure	✓ n/a	n/a
3	Lift Energy Efficiency	✓ n/a	n/a
4	Snowmaking Energy Efficiency	✓ 252 MWh savings	59 MTCO2e (1%)
5	Existing Building Decarbonization	✓ 40% energy use reduction ✓ 30% fossil fuel energy use electrified	1,088 MTCO2e (15%)
6	New Building Decarbonization	✓ Average EUI of new buildings: 120 kBtu/sq. ft. ✓ Electrify 80% of typical fossil fuel use	Negligible emissions impact
7	Off-Road Equipment Efficiency & Electrification	✓ 10% off-road diesel use reduction	17 MTCO2e (<1%)
8	On-Road Vehicle Efficiency & Electrification	✓ 80% on-road diesel use reduction	23 MTCO2e (<1%)
9	On-Site Renewable Energy Generation	✓ 1.87 MW on-site solar PV	879 MTCO2e (12%)
10	Utility Renewable Energy Subscription	✓ 1,309 MWh subscribed through utility program	488 MTCO2e (7%)
11	REC Purchases	✓ RECs purchased to cover 1,571 MWh of electricity use	586 MTCO2e (8%)
12	Offset Purchases	✓ Purchase offsets to cover remaining Scope 1 emissions	1,135 (16%)
<b>Total Impact:</b>			<b>7,074 MTCO2e (100%)<sup>1</sup></b>

<sup>1</sup> Percentages may not add up to 100% due to rounding.

# ENERGY USE BASELINE AND BUSINESS-AS-USUAL FORECAST

For Boyne Resorts’ net zero goal, Scope 1 and 2 emissions are considered. Scope 1 emissions result from on-site combustion of fossil fuels to heat buildings and fuel vehicles and equipment, and also from direct release of greenhouse gases from refrigerants used in cooling equipment. Scope 2 emissions account for the emissions released during generation of electricity that is consumed on site. In FY 2020-21, Boyne Mountain Resort’s energy use was 60,080 MMBtu in total. The breakout of energy usage by end use is shown below along with projected energy use if Boyne Mountain Resort continues business as usual.

### KEY RESORT CHARACTERISTICS

**STATE (CLIMATE ZONE):** Michigan (6)

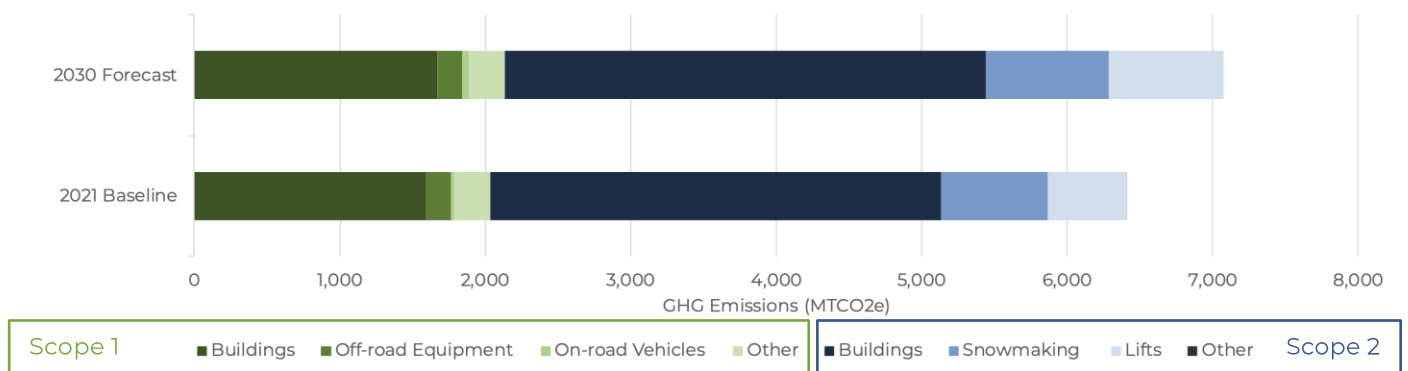
**ELECTRIC UTILITY:** Consumers Energy and Great Lakes Energy

**NEW BUILDING ENERGY CODE:** IECC 2015

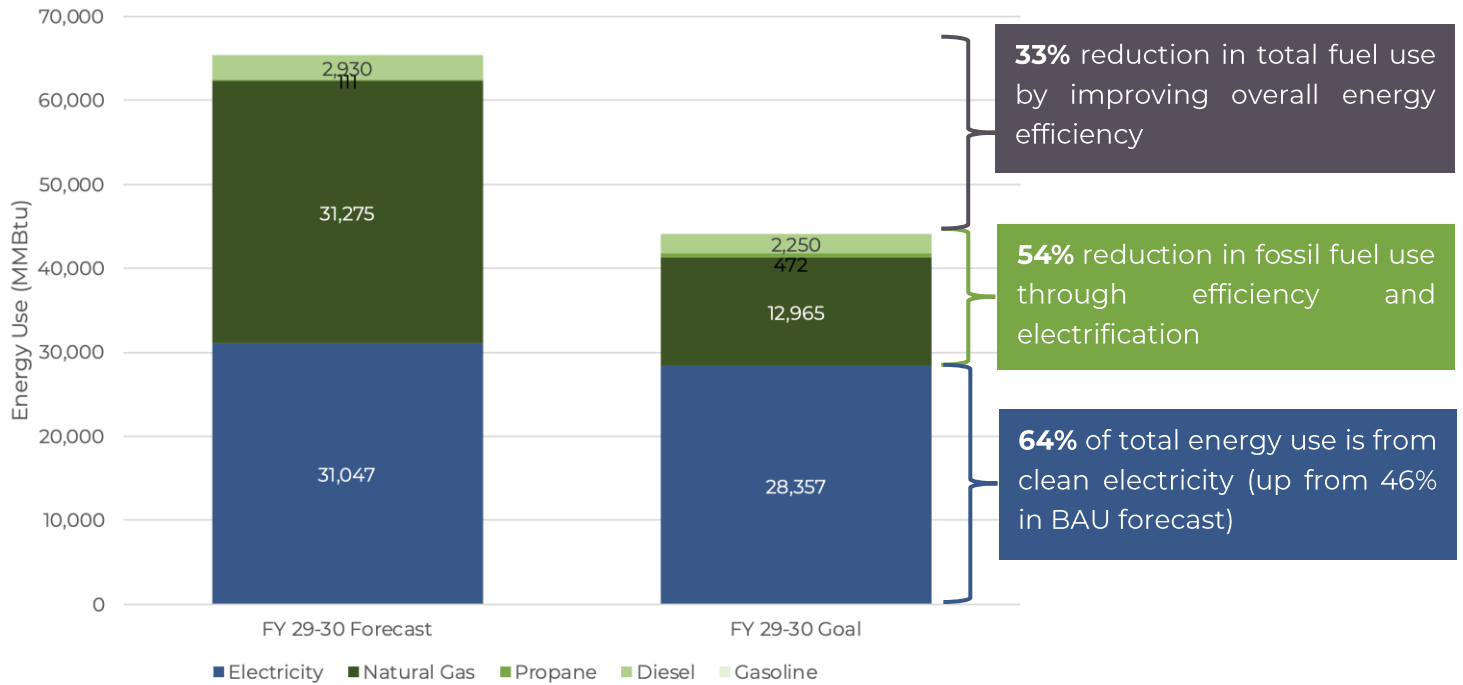
	Fuel	End Use	FY 2020-21 Baseline Use	FY 2029-30 Forecasted Use
Scope 1	Natural Gas	Buildings	298,342 therms	312,748 therms
	Propane	Buildings	1,022 gallons	1,222 gallons
	Diesel	Off-Road Equipment	17,138 gallons	17,138 gallons
	Diesel	On-Road Vehicles	1,786 gallons	3,985 gallons
	Gasoline	On-Road Vehicles	0 gallons	0 gallons
Scope 2	Electricity	Buildings	5,705 MWh	6,088 MWh
	Electricity	Lifts	1,005 MWh	1,448 MWh
	Electricity	Snowmaking	1,359 MWh	1,564 MWh

# EMISSIONS BASELINE AND BUSINESS-AS-USUAL FORECAST

The graph below shows the current GHG emissions (6,414 MTCO<sub>2</sub>e) at Boyne Mountain Resort by Scope, as well as the projected emissions in 2030 (7,074 MTCO<sub>2</sub>e) if no steps are taken to mitigate emissions.



To reach net zero by 2030, Boyne Mountain Resort will need to transform the energy used on site, transitioning from fossil fuel use to clean electricity. The total energy system transformation and some key characteristics of this transformation are shown below:



## KEY RESORT CONSIDERATIONS

- Over the next 8 years, at least 25% of Boyne Mountain’s boilers will need replacing; majority of fossil fuel use in existing buildings is for boilers and heaters so replacement provides opportunity for electrification
- Land availability provides an opportunity to expand existing solar PV infrastructure
- On-site hydroelectric dam currently generates 8% of the resort’s power; facility improvements currently underway to boost reliability and future automation may increase power generation
- Electrical outages are rare and quickly resolved when occurring, making electrification a viable alternative to fossil fuels

## KEY PARTNERS

- Partnered with CMS Energy and Consumers Energy to plant a pollinator garden under the new Solar PV installation using native species
- Hosted a fundraiser for Tip of the Mitt Watershed Council, a non-profit dedicated to protecting lakes, streams, wetlands, and groundwater throughout the Great Lakes Basin



# ADDITIONAL INFORMATION

We invite you to read the full [Boyne Resorts ForeverProject 2030 Master Plan](#), which can be found on the Boyne Resorts sustainability webpage, to learn more about the following:

## **ForeverProject: Our Commitment to Building a Sustainable Tomorrow**

Goals

Objectives

## **NSAA Climate Challenge and Sustainable Slopes**

## **Mountain Collaborative for Climate Action**

## **Company-Wide Master Plan**

A Look Back and Ahead

Greenhouse Gas Emissions Profile and Forecast

Boyne Resorts Big Moves

- Foundational Big Moves
- Near-Term Capital Projects
- Emerging Opportunities
- Balancing Moves



## **Other Property Profiles**

Big Sky Resort

Boyne Country Sports

Brighton Resort

Cypress Mountain

Gatlinburg SkyLift Park

Inn at Bay Harbor

Loon Mountain Resort

Pleasant Mountain

Sugarloaf

Sunday River Resort

The Highlands

The Summit at Snoqualmie



For more information about specific sustainability initiatives at Boyne Mountain Resort, visit our ForeverProject webpage:

[www.boynemountain.com/sustainability](http://www.boynemountain.com/sustainability)

If you have questions, please contact [sustainability@boynemountain.com](mailto:sustainability@boynemountain.com)





Building a sustainable tomorrow by  
positively affecting the lasting implications  
our resorts, team members, and guests  
have on the planet.