

# Leaner & Greener Refresh



29<sup>th</sup> November 2023

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**TED**

Tourism  
Enterprise Development  
Programme



**TOURISM  
NORTHERN  
IRELAND**



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# Today

1. Quick Overview
2. The Leaner & Greener Roadmap
3. Step-by-Step Leaner & Greener Business Management
4. Carbon Footprint
5. Case Studies

1. Quick

# Overview

Northern  
Ireland  
Embrace  
a Giant  
Spirit



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# Mindset



# 4 Areas



Energy



Waste



Water



Food  
Waste

# Leaner & Greener Wisdom

Systematically managing these resources will reduce the running costs of your business (making you **leaner**) and will also reduce carbon emissions from your business (making you **greener**).

It is a win-win situation – it is good for business and it is good for the environment.

# 4 Areas



Energy



Waste



Water



Food  
Waste



# 4 Areas



Energy



Waste



Water



Food  
Waste

# Guides & Templates

ENERGY SAVINGS ACTION	
Action	Responsible Person
Check temperature in all fridges in kitchen and set to 4 degrees Celsius	Green M Head C

**LEANER & GREEN**  
Guide to Energy Management  
How to conserve energy, lower emissions and reduce costs in your tourism business

TED | Tourism Enterprise Development Programme

**LEANER & GREEN**  
Guide to Water Conservation  
How to save water, lower emissions and reduce costs in your tourism business

TED | Tourism Enterprise Development Programme

**LEANER & GREEN**  
Guide to Waste Management  
How to minimise waste, lower emissions and reduce costs in your tourism business

TED | Tourism Enterprise Development Programme

**GETTING STARTED**  
A quick step by step guide to protect your profits and our planet by reducing wasted food

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GUARDIANS



Find all resources on:

[www.tourismni.com/leanergreener](http://www.tourismni.com/leanergreener)

Recordings of Webinars

PowerPoint Slidedecks

PDF Guides

Spreadsheets and Templates

Case Studies

# 2. Leaner & Greener Roadmap

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# Leaner & Greener Roadmap

1. Where are you now?
2. Where do you want to get to?
3. How will you get there?
4. How will you track progress?
5. How will you keep everyone informed?



# In all cases...

Methodical Step-by-Step Approach to establish:

- 1** How much **water/energy** is used in your business and how much **waste** is generated
- 2** Where **water/energy** is used in your business and where **waste** is generated
- 3** What actions you can take to save **resources and money** in your business
- 4** How you can **develop an action plan** to reduce consumption

# Leaner & Greener Wisdom

Only when you measure and monitor  
can you truly manage consumption and  
save money

# Avoid going straight to action

Data allow you to clearly see areas for priority action and calculate return on investment

You need to be able to show data (starting point and improvements) for funding, awards, certifications, carbon footprint calculations!!

**Measuring is essential!**



# 3. Leaner & Greener Step-by-Step

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# 8 Leaner & Greener Steps

- 1** Appoint a Green Team or Green Champion
- 2** Calculate Annual Units & Cost
- 3** Establish your benchmark
- 4** Start monitoring monthly
- 5** Conduct an Audit (*e.g. Equipment, Lighting, Fixtures, Bins*)
- 6** Observe Staff and Visitor Behaviour
- 7** Analyse Data and Prioritise Actions
- 8** Create your Leaner & Greener Action Plan

Step 1

# APPOINT Green Team/Manager

Step 2

# Annual Units & Costs

# How to Calculate Energy Use

Electricity and Mains Gas  
Bills (kWh)

Gas and Oil: Meters or  
Delivery Bills (litres)

Wood: Delivery Bills (kg)

1. Log all your sources of energy
2. Convert usage of all to the common currency kWh
3. Calculate how many kWh each energy source provides
4. Calculate the Average Unit Cost for each energy type

# Worksheet 1: Energy Annual Use & Costs

ENERGY ANNUAL USE AND COSTS							
Type of Energy	Unit of Measurement	Annual Units	Annual kWh	Annual Cost ex VAT	Average Unit Price £/kWh	kWh Benchmark	Cost Benchmark
Electricity	kWh		0		#DIV/0!	#DIV/0!	#DIV/0!
Mains Gas	kWh		0		#DIV/0!	#DIV/0!	#DIV/0!
LPG	Litres		0		#DIV/0!	#DIV/0!	#DIV/0!
Oil	Litres		0		#DIV/0!	#DIV/0!	#DIV/0!
Wood Pellets	KG		0		#DIV/0!	#DIV/0!	#DIV/0!
Benchmark							

1. ENERGY ANNUAL USE AND COSTS

2. ENERGY EQUIPMENT AUDIT

3. ENERGY SAVINGS ACTIO ...

# Worksheet 1: Energy Annual Use & Costs

ENERGY ANNUAL USE AND COSTS							
Type of Energy	Unit of Measurement	Annual Units	Annual kWh	Annual Cost ex VAT	Average Unit Price €/kWh	kWh Benchmark	Cost Benchmark
Electricity	kWh	30000	30,000	11750	€0.39	#DIV/0!	#DIV/0!
Mains Gas	kWh	13000	13,000	1850	€0.14	#DIV/0!	#DIV/0!
LPG	Litres	1200	8,520	850	€0.10	#DIV/0!	#DIV/0!
Oil	Litres	8000	83,760	10250	€0.12	#DIV/0!	#DIV/0!
Wood Pellets	KG	800	4,000	380	€0.10	#DIV/0!	#DIV/0!
Benchmark							

1. ENERGY ANNUAL USE AND COSTS

2. ENERGY EQUIPMENT AUDIT

3. ENERGY SAVINGS ACTIO ...

Step 3

# Benchmark



# Why benchmark?

Benchmarking allows you to track your own performance over time

Benchmarking allows you to compare your performance against others in the industry

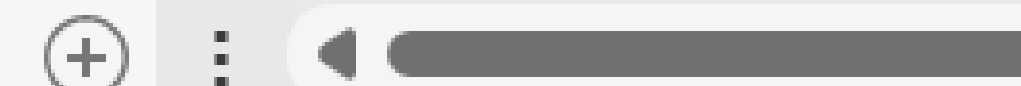
# Worksheet 1: Energy Annual Use & Costs

ENERGY ANNUAL USE AND COSTS							
Type of Energy	Unit of Measurement	Annual Units	Annual kWh	Annual Cost ex VAT	Average Unit Price £/kWh	kWh Benchmark	Cost Benchmark
Electricity	kWh	30000	30,000	11750	€0.39	1.50	0.59
Mains Gas	kWh	13000	13,000	1850	€0.14	0.65	0.09
LPG	Litres	1200	8,520	850	€0.10	0.43	0.04
Oil	Litres	8000	83,760	10250	€0.12	4.19	0.51
Wood Pellets	KG	800	4,000	380	€0.10	0.20	0.02
Benchmark (Restaurant with 20000 covers per year)	20000						

1. ENERGY ANNUAL USE AND COSTS

2. ENERGY EQUIPMENT AUDIT

3. ENERGY SAVINGS ACTIO ...



Step 4

Commit

To monitoring monthly



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# Use the templates: Example

## Waste Use & Costs Sheet – Worksheet 1

				Benchmark Measure:		
LANDFILL BY WEIGHT						
LAST YEAR						
2022 Total Landfill kg						
2022 Total Landfill Cost						
2022 cost/kg	#DIV/0!					
	Total KG	Total Cost	Cost/kg	Benchmark KG	Benchmark Cost	Comments
January			#DIV/0!	#DIV/0!	#DIV/0!	
February			#DIV/0!	#DIV/0!	#DIV/0!	
March			#DIV/0!	#DIV/0!	#DIV/0!	
April			#DIV/0!	#DIV/0!	#DIV/0!	
May			#DIV/0!	#DIV/0!	#DIV/0!	
June			#DIV/0!	#DIV/0!	#DIV/0!	
July			#DIV/0!	#DIV/0!	#DIV/0!	
August			#DIV/0!	#DIV/0!	#DIV/0!	
September			#DIV/0!	#DIV/0!	#DIV/0!	
October			#DIV/0!	#DIV/0!	#DIV/0!	
November			#DIV/0!	#DIV/0!	#DIV/0!	
December			#DIV/0!	#DIV/0!	#DIV/0!	
<b>TOTAL</b>	0	0.00				

Step 5

# Internal Audit



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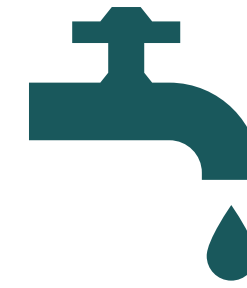
## Energy

Equipment  
Lighting  
Heating  
Refrigeration



## Waste

Inspect Bins  
Monitor Waste  
Collection Area



## Water

All water-using  
appliances  
  
All fittings



## Food Waste

Preparation  
Area  
Spoilage  
Plates

# Use the Templates: Example Worksheet 2: Energy Equipment Audit

ENERGY EQUIPMENT AUDIT						
Equipment	Rating (kW)	Hours On/Week	Hours On/Year	Annual Use (kWh)	Average Unit Price	Annual Cost
Fridge			0	0		0
Freezer			0	0		0
Air-Conditioning Unit			0	0		0
Extractor Fan			0	0		0
Dishwasher			0	0		0
			0	0		0
			0	0		0
<b>TOTALS</b>				0		0

# Use the Templates:

## Example Worksheet 2: Energy Equipment Audit

### ENERGY EQUIPMENT AUDIT

Equipment	Rating (kW)	Hours On/Week	Hours On/Year	Annual Use (kWh)	Average Unit Price	Annual Cost
Fridge	1	168	8736	8736	0.39	3407
PC	0.1	42	2184	218.4	0.39	85
Air-Conditioning Unit	3	12	624	1872	0.39	730
Extractor Fan	2	60	3120	6240	0.39	2434
Grill	1.5	50	2600	3900	0.39	1521
			0	0		0
			0	0		0
<b>TOTALS</b>				<b>20966.4</b>		<b>8177</b>



# Leaner & Greener Wisdom

Once you know which equipment and operations use the most energy/water or generate the most waste, you can determine the best ways to cut that use without impacting the business or visitor experience

Step 6

# Obscene Behaviour



If a kitchen porter leaves the Pot Wash Sink Tap (20 lt/mn) on with no stopper in the sink for 5 minutes every hour, 1,700 litres per day are wasted, 11,932 per week, 51,708 per month or 620,500 per year – Costing c. €1,800 pa or if its hot water up to €10,000 per annum

Source: Green Hospitality Ireland

# Leaner & Greener Wisdom

Day-to-day changes in staff behaviour  
can save 10-15% on your energy costs

Step 7

# Analyse and Prioritise



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Analyse the outcomes of your audits

What jumps out as a priority area for attention?

Share outcomes with your team or mentor

Brainstorm solutions

Broadly estimate costs and resources required

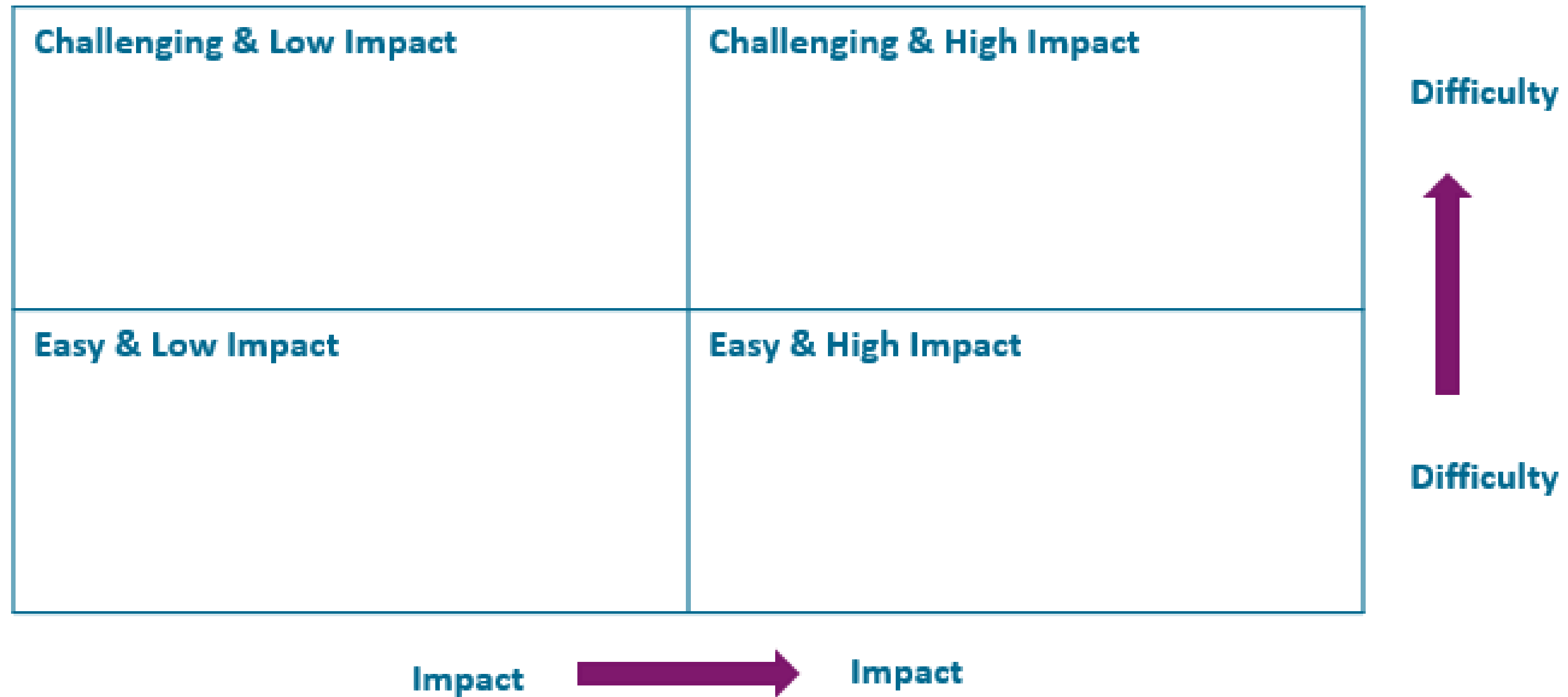
# Prioritise!



# Leaner & Greener Wisdom

Take the actions with the lowest cost and  
highest impact FIRST

# Priority Matrix







# Energy: Equipment

1. Introduce a strict Switch Off Policy and train your team
2. Display Switch On and Switch Off Times on each piece of equipment
3. Display preferred temperature setting on relevant equipment and train your team
4. Prioritise replacing older equipment with new, more efficient models – think ‘whole of life’ costs

# Investigate Renewable Options

Renewables	What for?	Payback Time
Solar PV	Transforms energy from the sun into electricity	4-6 years
Solar Thermal Technology	Transforms energy from the sun into hot water	2-5 years
Heatpump	Extracts naturally occurring heat and upgrades it to a temperature at which it can be used for heating spaces and water	5-8 years
Biomass Boiler	Burns wood or plant matter to generate heat	5-8 years

Step 8

# Action Plan



# Worksheet 3: Energy Savings Action Plan

## ENERGY SAVINGS ACTION PLAN

No.	Action	Responsibility	Deadline	Notes
1	Check temperature in all fridges in kitchen and set to 4 degrees Celsius	Green Manager & Head Chef	30.11.2022	Create a record sheet that lists every fridge and the date it was checked.

# check out the Ideas Lists for Action...

## FIND AND FIX MAINS LEAKS

- Select a time when your business has minimal or no activity
- Take a meter reading. Wait 3-5 hours (or overnight) and take a meter reading again
- If there is a substantial difference, you have a leak
- Contact a plumber to rectify and notify Northern Ireland Water

## EQUIPMENT: LEAKS

- Act on equipment leaks e.g., dripping taps as quickly as possible
- Designate responsibility in your team for reporting leaks
- Engage staff to be alert to leaks and to report leaky equipment promptly

## EQUIPMENT: OPTIONS FOR TAPS & SHOWERS

- Install low-flow aerators on taps
- Install low-flow shower heads
- Install self-closing or sensor operated taps to avoid taps running unnecessarily
- Use mixer taps
- Install trigger-operated hoses in kitchens

## EQUIPMENT: OPTIONS FOR TOILETS & URINALS

- Retrofit or install dual flush systems
- Reduce cistern capacity by installing a water displacement device (e.g., brick, bag) to reduce flush volume
- For automatic flush urinals, install motion sensors or shut-off valves
- Invest in waterless urinals

## ENGAGE STAFF

## NEW SYSTEMS

# Water Conservation Example

# Waste: Recycle

- ✓ Provide segregated bins that are easy to access
- ✓ Train staff on waste segregation guidelines
- ✓ Display easy-to-understand labels on each bin
- ✓ Compost food where possible



Check out [Northern Ireland | Recycle Now](#)

# Food Waste

## SPOILAGE

1. Smart ordering
2. Savvy storage

## PREPARATION

3. Smart menu
4. Essential skills

## PLATE

5. Right portion sizes
6. Engage customers

## OTHER

7. Surplus and food waste collection

# Leaner & Greener Wisdom

It's only an action plan if it is clear who has to take the action and when that action has to be taken by



4. Carbon

# Footprint

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# To calculate carbon footprint, you need...

- Amount of **Energy** used in your business in kWh
- Amount of **Water** used in your business in cubic metres
- Amount of **Waste** generated in your business in weight (kg or tons)
- Flights and road miles for business-related **travel**

Measuring is essential!

# 5. Case Studies



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# Sustainability Case Study Dalata Hotels

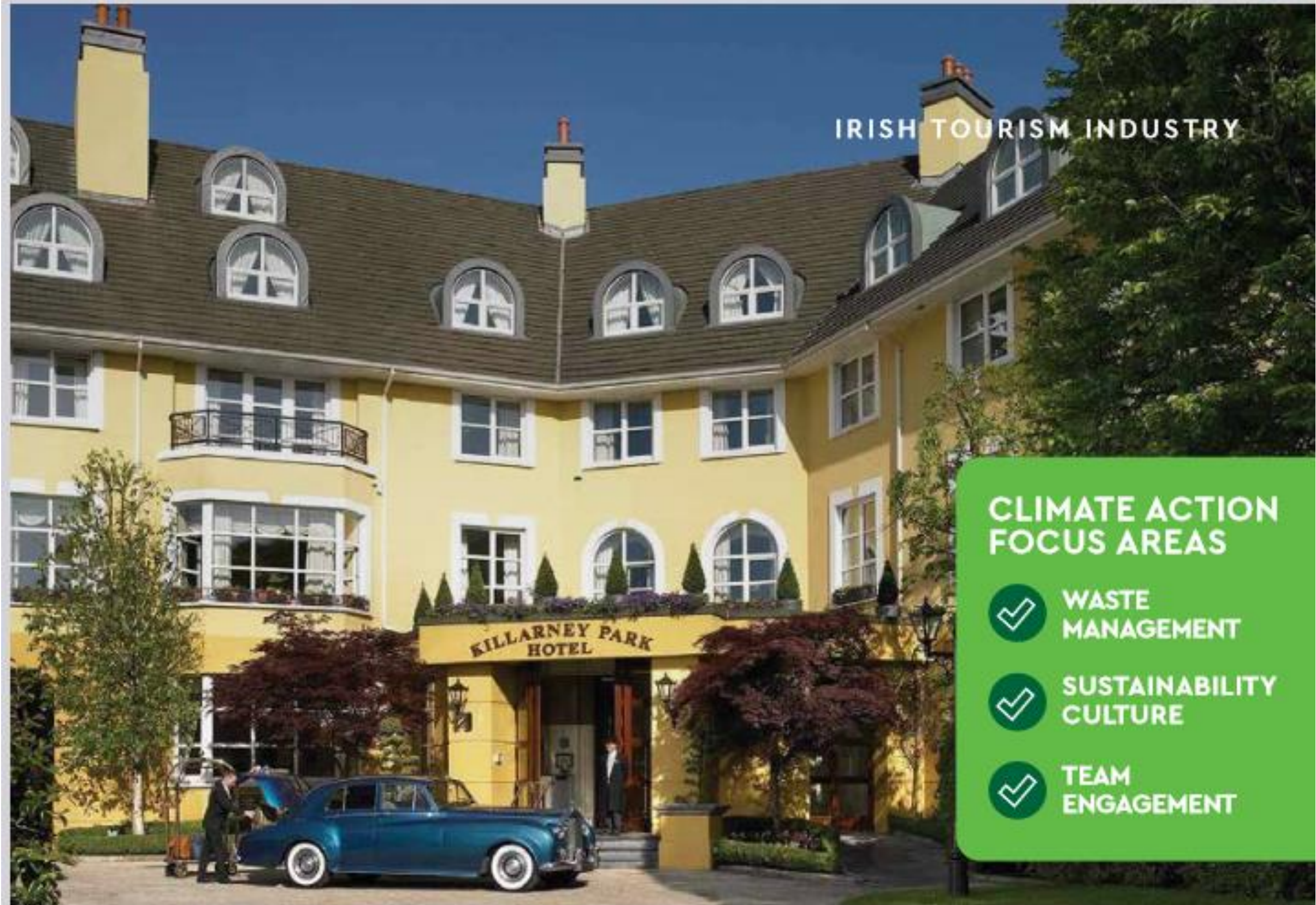
June 2023



## Retrospective Adaptions – Clayton Hotel Belfast

Originally built in 1998, the Clayton Hotel Belfast had a complete refurbishment in 2018. At that time, a Green Team was set up, supported with training and empowered to identify key areas for improvement. Notable actions include:

- £450,000 investment in Combined Heat and Power Boiler. This eliminated the use of 4 original boilers in the hotel and the investment was returned within 18 months.
- £150,000 investment in LED light replacement in 2022 with a high-speed return on investment of 9 months.
- £35,000 investment in a pool cover in 2023 with an expected return on investment of 18 months.



IRISH TOURISM INDUSTRY

CLIMATE ACTION  
FOCUS AREAS

- ✓ WASTE MANAGEMENT
- ✓ SUSTAINABILITY CULTURE
- ✓ TEAM ENGAGEMENT

CASE STUDY

# THE KILLARNEY PARK HOTEL



## CLIMATE ACTION – RETURN ON INVESTMENT

ACTIVITY	INITIAL INVESTMENT	PAY BACK TIME	ANNUAL COST-SAVING AFTER PAY-BACK PERIOD	ENVIRONMENTAL SAVING
✓ Installed on-site water filtration system to offer own still and sparkling water.	€4,000	6 months	€10,000 per annum	✓ Eliminated 52 pallets of glass waste per year (approx. 30 tonnes)
✓ Switched from chemical-based products to GreenClean, a non-chemical cleaning and sanitising product	€5,000	Less than one year	€7,500 per annum	✓ Prevented harmful chemicals entering local waterways ✓ Eliminated over 250 large plastic containers related to previous product
✓ Installed a water fountain	€6,500	1 year and 3 months	€5,000	✓ Removed 7,000 plastic bottles from the hotel each year
✓ Changed to digital newspapers and magazines for guests	€4,000	6 months	€8,000 reduction in waste collection costs.	✓ Removed 5 tonnes worth of paper from the hotel each year
✓ Removed single-use toiletries from bedrooms	€10,000	Less than 1 year	€12,000 per annum	✓ Removed 250,000 small bottles of toiletries from our waste each year. ✓ Demonstrates to guests



IRISH TOURISM INDUSTRY

CLIMATE ACTION  
FOCUS AREAS



ENERGY  
SUPPLY



HEATING



CARBON  
OFFSETTING



REVIEW OF PROCESS  
AND BEHAVIOUR

CASE STUDY

# HOTEL DOOLIN





# 5 STEPS TOWARDS CARBON NEUTRALITY

## 1. Switch to a green electricity supplier 2017

**Costs:** No additional cost

**Carbon reduction:** 100% on electricity

**Payback time:** Immediate

## 2. Switch heating from oil to air-to-water system 2018

**Costs:** No capital costs. System is leased from the supplier for a contracted length of time with the option to buy it if/when the hotel would like to. The system runs off green electricity and the electricity cost is covered by the supplier.

**Reduced oil consumption:** 68% year 1

**Reduced energy costs:** 20% annually

**Carbon reduction:** Oil had accounted for 18% of the hotel's overall energy requirement. Now just 3% of the hotel's energy came from oil, saving the equivalent of 32 tonnes of CO2 per year.

## 3. Switch to BioLPG 2021

**Costs:** Marginal increase in price

**Carbon reduction:** 104 tonnes forecast for 2022.

## 4. Process and behavioural change projects 2014 +

To support the carbon neutral journey, a host of projects design to modify behaviour or create process efficiencies were undertaken. Examples include:

✓ Staff training on portion sizes, waste segregation and switching off equipment

✓ Installing aerators in showers and hippo bags in cisterns



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# Sustainability Case Study Larchfield Estate

June 2023



# Sustainability Case Study Boatyard Distillery

June 2023



# Sustainability Case Study The Salthouse Hotel

June 2023



# Sustainability Case Study Erne Water Taxi

June 2023



# Guides & Templates



ENERGY SAVINGS ACTION		Responsible
Action	Green	Head of
Check temperature in all fridges in kitchen and set to 4 degrees Celsius		

**LEADER**  
Guide To  
Manage

How to conserve  
emissions and  
your tourism business

**LEADER & GREEN**  
Guide to Water  
Conservation

How to save water, lower  
emissions and reduce costs  
in your tourism business

**LEADER & GREEN**  
Guide to Waste  
Management

How to minimise waste,  
lower emissions and reduce  
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**TED** | Tourism Enterprise Development Programme

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# GETTING STARTED

A quick step by step guide to protect your profits and our planet by reducing wasted food

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