

# Portlaoise Low Carbon Town (Decarbonisation Zone)



# First Steps

- ▶ Starting out in this journey
- ▶ Learning on the fly



# Brief Background

- ▶ Portlaoise 2040 Vision Statement adopted 2017
  - ▶ Low carbon Town is a guiding principle
- ▶ Climate Action Plan 2019 sets out 183 actions
- ▶ Action 165 of CAP19 “develop Portlaoise as a low carbon Town”
- ▶ All Local Authorities will be asked to develop a decarbonisation project
- ▶ This pilot project will serve as a road map
- ▶ Covenant of Mayors
- ▶ Climate Action Charter
- ▶ Draft County Development Plan 2021 to 2027 strengthened
- ▶ Energy Performance Officer
- ▶ Climate Adaptation Team
- ▶ Management Team Agenda
- ▶ Good intentions



## The Creation of a Low Carbon Town Centre

### AMBITIONS

- Significant reduction in carbon emissions driven by interventions at James Fintan Lalor / Lyster Square.
- Re-balance the existing circa 3,600 car parking spaces.
- Target 10% of all journeys by bicycle by 2020.
- 300-500 trees planted in the Town Centre.



# CLIMATE ACTION PLAN 2019

To Tackle Climate Breakdown

## Infographic



### Electricity

**70%** Electricity generated from renewable sources by 2030



Phase-out Coal and Peat electricity generation



Homeowners to generate their own electricity and sell back to the grid under scheme for micro-generation



### Transport

Increase the number of EVs by 2030 to circa



**1 million**

Build EV charging network to stay ahead of demand

Expand our network of cycle paths and 'Park and Ride' facilities, helping ease congestion

No diesel-only purchases for public buses in our cities from 1 July 2019



### Agriculture

Deliver GHG emissions reduction identified by Teagasc by creating new, sustainable opportunities for family farms



**8,000 ha** on average, of newly planted forest per year

**40,000 ha** at least, of improved grasslands on drained organic soils per year



### Buildings



**500,000** existing homes to upgrade to 'B2' equivalent BER by 2030

**600,000** heat pumps installed by 2030

(of which 400,000 will be in existing buildings)



New retrofitting delivery model, which will group retrofits together, leverage smart finance, and ensure easy pay-back methods



### Waste and the Circular Economy



Reduce the percentage of municipal waste sent to landfill to **10%** by 2035

Reduce food waste by **50%** by 2030



By 2030

Recycle **70%** of packaging waste



Recycle **55%** of plastic packaging waste

Eliminate non-recyclable plastic and impose higher fees on the production of materials that are difficult to recycle

Ban specific single-use plastic convenience items

including polystyrene food, cup, and drink containers



### Citizens and Communities

Engage Communities across the country through:

- Establishing a **Community Outreach Programme**
- Driving action through the **National Dialogue on Climate Action**
- Increase the number of Sustainable Energy Communities to **1,500**
- Develop **flagship low-carbon projects** in all Local Authorities



### Establish a Just Transition Review Group.

which will identify specific transition needs among cohorts of workers, enterprises, communities and specific groups of people



### Enterprise and Services

Embed **decarbonisation** and waste management measures across **all enterprises** and public service bodies



Mobilise low carbon **centers of excellence** in our regions and across sectors

Plan for the delivery of quality employment and enterprise in the **new areas of opportunity**



### International Action

Double the percentage of **Overseas Development Aid** spending on climate finance by 2030



### Public Sector

Reduce emissions from the public sector by **30%** by 2030



Every public body will adopt a **Mandate for Climate Action in 2019**

Improve energy efficiency of public sector buildings

**50%** by 2030



### To be Enshrined in Law

Carbon proofing all government decisions and major investments



Climate Action Delivery Board overseen by the **Taoiseach** to monitor delivery

Strong accountability to an **Oireachtas Climate Action Committee**

**5 Year Carbon Budget**

Independent Climate Action Council to recommend the **Carbon Budget** and evaluate policy



### Carbon Pricing

Trajectory of Carbon Pricing to create **behaviour changing incentives** and avoid locking in carbon intensive technologies

# Decarbonisation Zone

- ▶ What is a Decarbonising Zone (DZ)?
- ▶ Portlaoise - decarbonisation zone
- ▶ Demonstration Town
- ▶ Lesson sharing
- ▶ Establishing a Baseline



## Elements

The creation of a Low Carbon Town Centre;

The Delivery of a Walkable Town Centre;

The “Greening” of Portlaoise Town Centre;

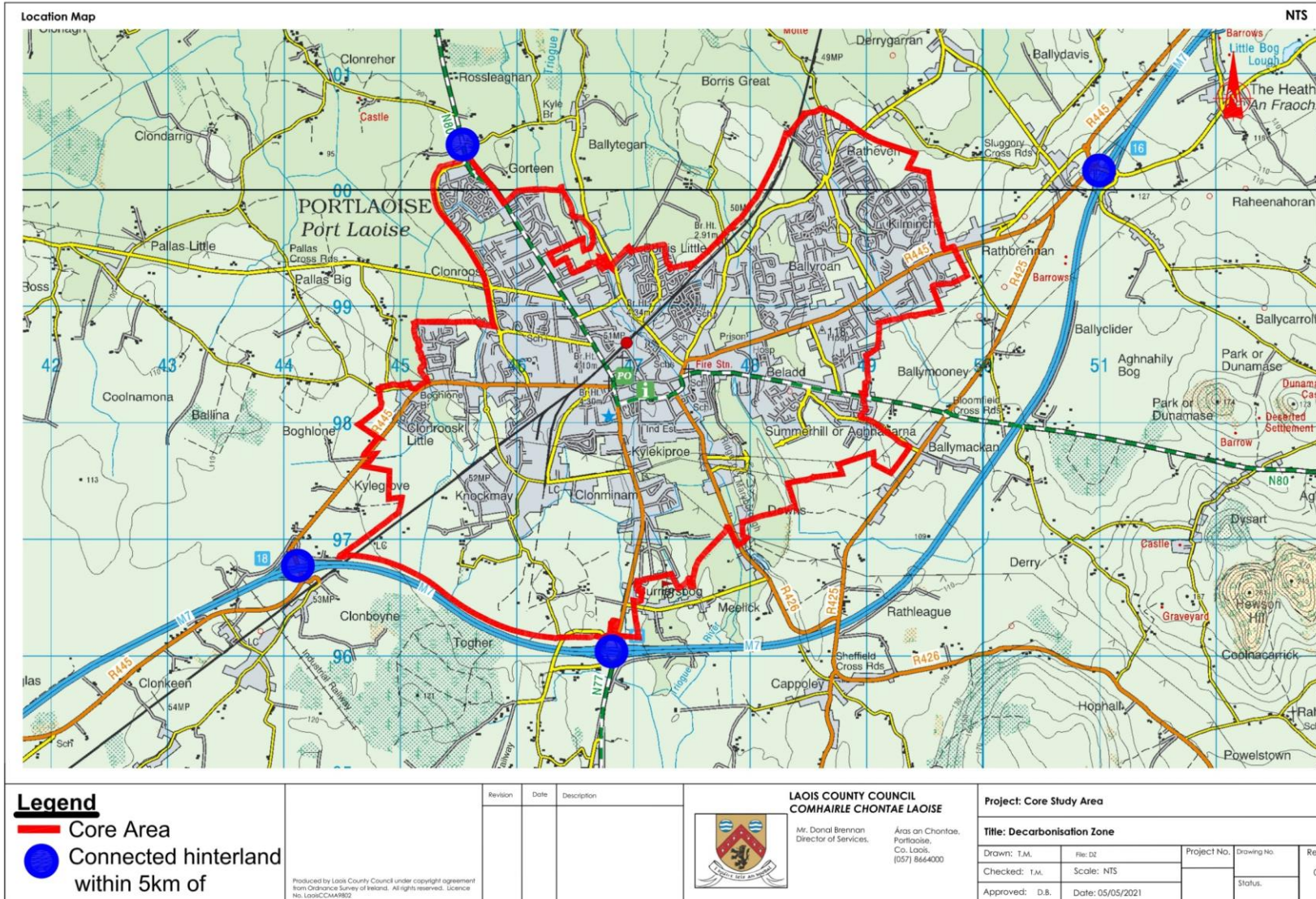
Exposure of Cultural Heritage within Portlaoise Town Centre;

Accommodating Living in Portlaoise Town Centre;

Provision for Working in Portlaoise Town Centre



# DZ - Map of town incl 5km hinterland





An architectural rendering of a town development, showing a mix of residential buildings, a large open green space with trees, and a paved walkway. The scene is viewed from an elevated perspective, showing the layout of the town and its integration with nature.

# Portlaoise Low Carbon Town - DZ

Low Carbon Implementation Group set up in 2018, comprising of:

- ▶ *Gas Networks Ireland*
- ▶ *Bord Na Mona*
- ▶ *ESB Networks*
- ▶ *HSE*
- ▶ *NTA*
- ▶ *Irish Rail*
- ▶ *Laois Partnership Co*
- ▶ *IT Carlow*
- ▶ *SEAI*
- ▶ *Portlaoise Town Team*
- ▶ *CARO*
- ▶ *Laois Co Council*

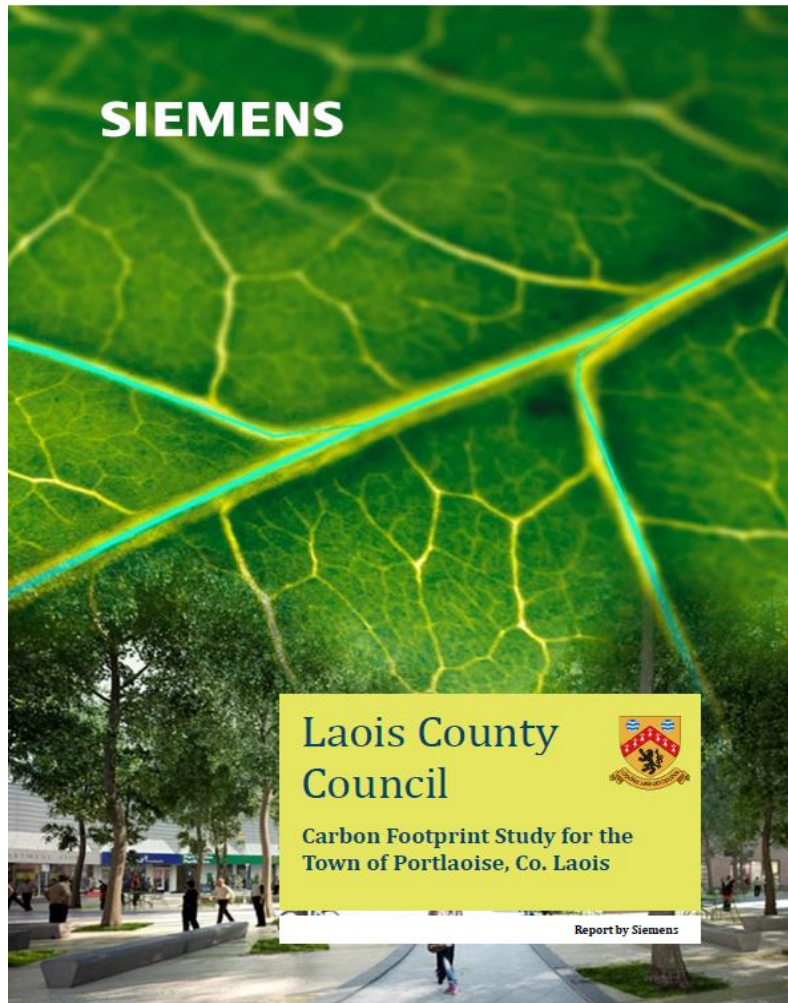
**We need strong partners to achieve results**

# How do we measure outcomes to create a baseline

- ▶ Engaged expertise to assist LCC in measuring the carbon footprint baseline for our DZ.
- ▶ Siemens Avanta were awarded the brief
- ▶ Decarbonizing Zone in Portlaoise selected using very simple criteria
  - ▶ Where > quarter of pop of county lives
  - ▶ Where most of the carbon is produced (net agri)
  - ▶ Alignment with statutory boundary of Portlaoise LAP
  - ▶ Natural follow on from Low Carbon Town
- ▶ The clock has now been set for 2020



# So, what has Siemens Avanta found?



- ▶ Survey area Portlaoise taken from Local area plan 13km<sup>2</sup>
- ▶ This carbon footprint had to be capable of being recalibrated in future years
- ▶ Measure Scope 1, 2 and 3 GHG emissions
- ▶ 6 GHGs as per the Kyoto Protocol
- ▶ Provided an estimate of the renewable energy potential
- ▶ Established a register of opportunities

# PORTLAOISE TOWN

## Carbon Footprint Study

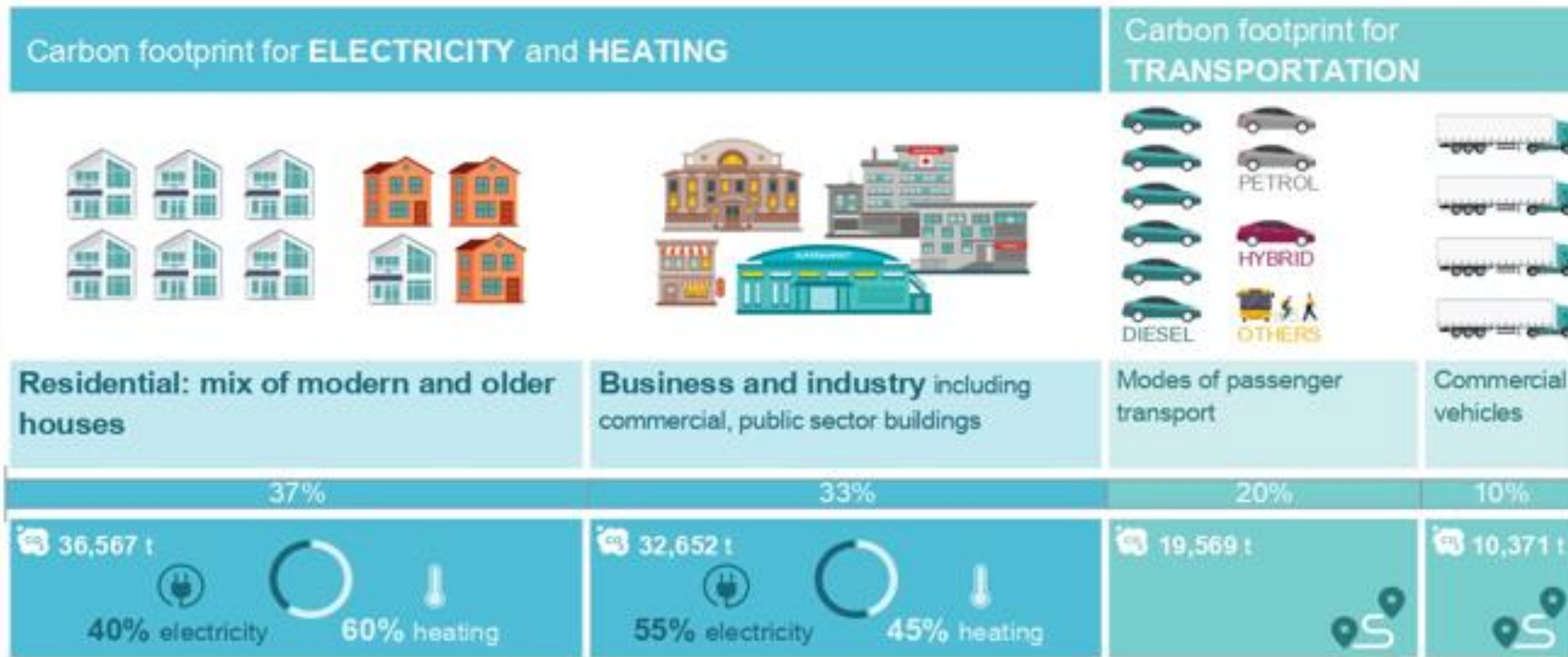


SIEMENS

Portlaoise Town emits around ~100,000 tons CO<sub>2</sub> per annum (pop 23,000 in 2019)  
 That is around 4 tons per person per year net of agricultural emissions and travel outside the zone



TODAY







# The study identified local solutions to reduce the town's carbon footprint

OPPORTUNITIES

5 turbines  
3 MW each  
140 m hub height



supply directly to town



50 MW solar rooftop  
500,000 PV modules



Pre 1980 houses upgraded to B2 to improve heating efficiency

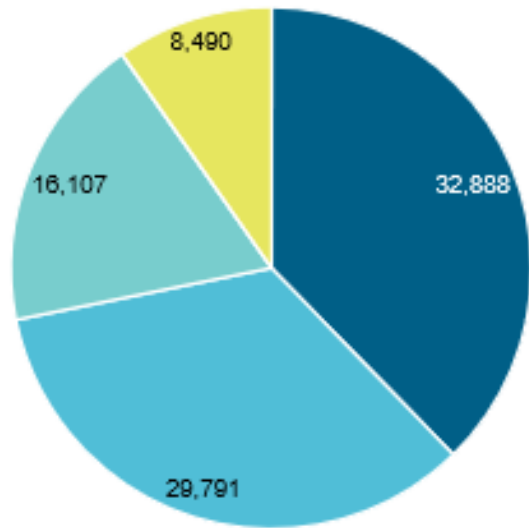


~20% diesel cars to be substituted by Battery Operated Electric Vehicles (BEV) till 2030.

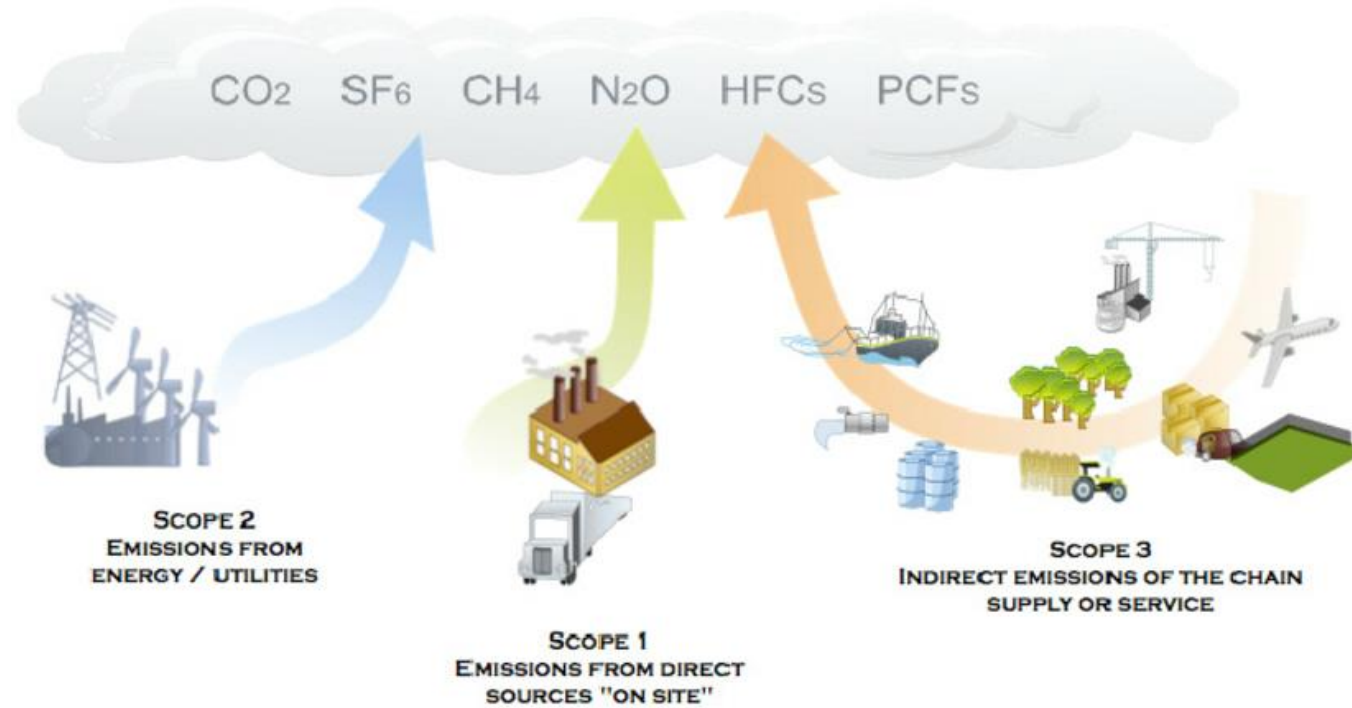
IMPACT



## Scope 1 & 2 carbon emissions (tons of CO<sub>2</sub>)



■ Residential    ■ Passenger transport  
■ Non-residential    ■ Freight transport



Sector	Scope 1,2	Scope 1,2	Scope 1,2 & 3	Scope 1,2 & 3
	Carbon Dioxide Emissions (tons of CO <sub>2</sub> )	Greenhouse Gas Emissions (tons of CO <sub>2</sub> e)	Carbon Dioxide Emissions (tons of CO <sub>2</sub> )	Greenhouse Gas Emissions (tons of CO <sub>2</sub> e)
Residential	32,888	32,962	35,084	36,567
Non-Residential	29,791	29,861	31,438	32,652
Passenger Transport	16,107	16,221	19,200	19,569
Freight Transport	8,490	8,536	10,158	10,371
<b>Total</b>	<b>87,276</b>	<b>87,580</b>	<b>95,879</b>	<b>99,159</b>

# Carbon Footprint cont'd



# Costs - very approx

5 Turbines = €25m

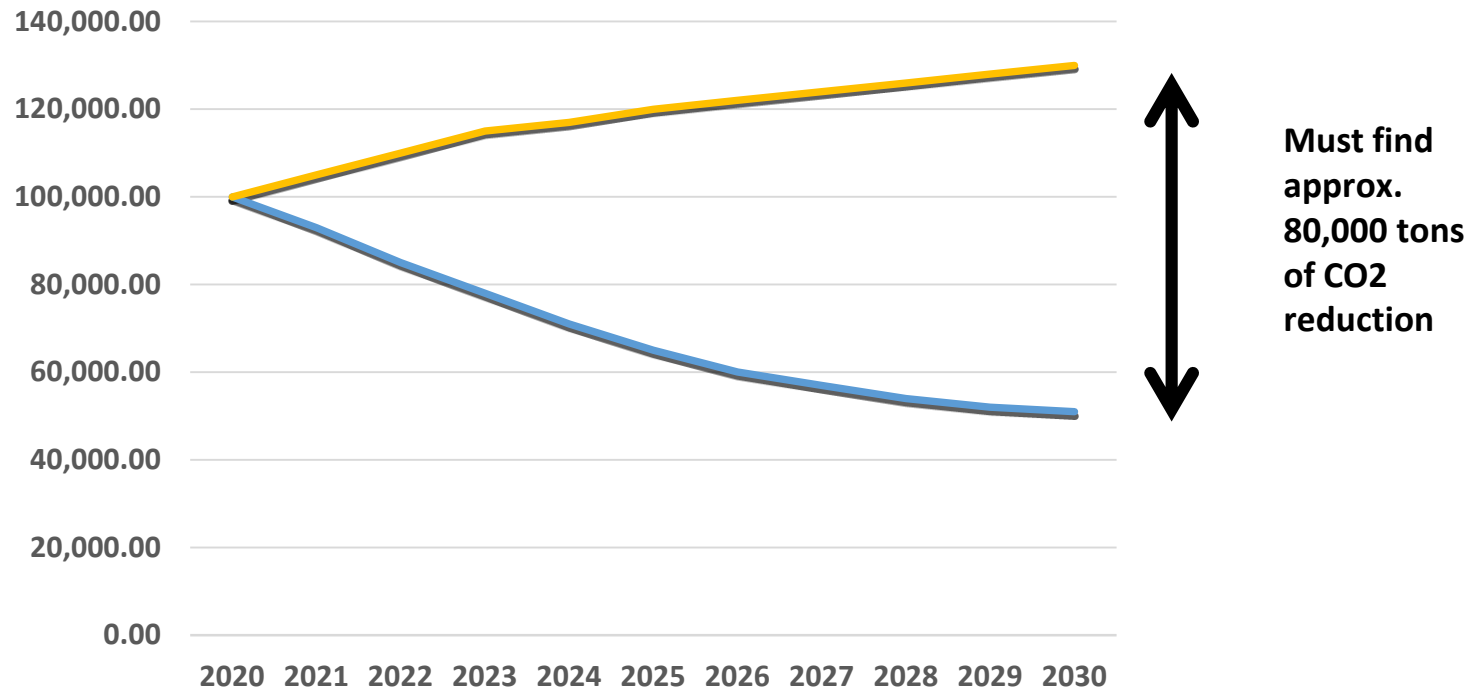
PVs = €55m

2,000 houses retrofit = €40m

Approx €150m for (34+18+19)  
=71% GHG savings



# The scale of the Investment/New economy

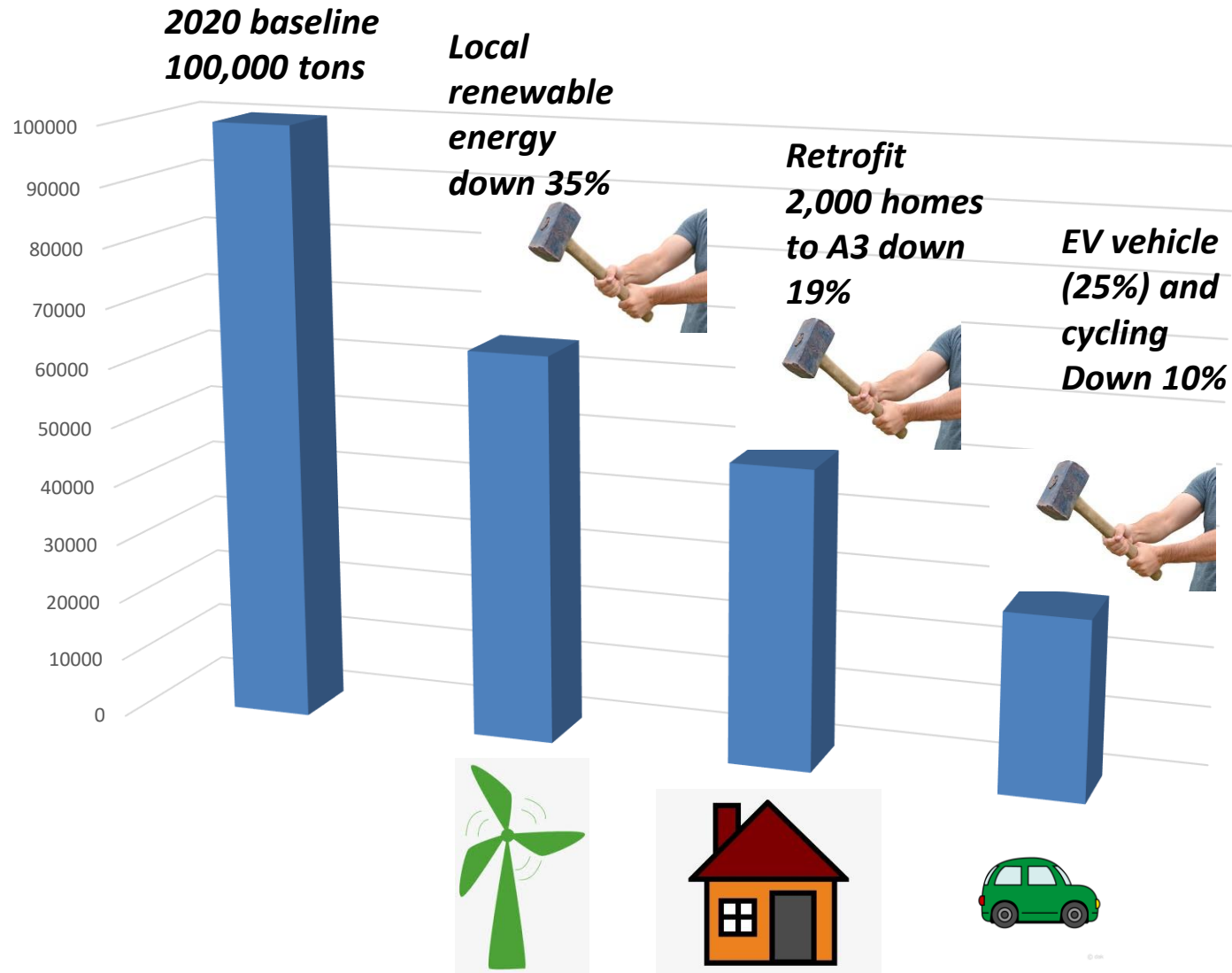


*The yellow line 2020 to 2030*

*The blue line represents the required course of action*



# Downward Drivers of Carbon in Portlaoise



# Portlaoise - Our Carbon(GHG) Footprint



2021 - 100,000 tons per annum

We need to reduce  
by 7% per annum



2030 - 50,000 tons per annum

# How do we manage the energy future?

- ▶ Population Growth, but Carbon Decline
- ▶ Population increase Laos 2016-2030
- ▶ Houses increase Laos 2020-2030
- ▶ Do Nothing = at what cost?
- ▶ Solutions required





# *Interesting Facts in Portlaoise DZ*

Retrofitting of 2,500 lights in the town has yielded a saving of 750,000 kwhr per annum, or €121,000 per annum or **319 tons** of carbon

Working from home on one day per week, as a climate policy, will result in emissions avoidance of **125 tons**, p.a. of CO2 for LCC

The draft County Dev Plan 2021 to 2027 has put an enhanced emphasis on Climate Action

A recent survey by AHBs and LCC reveals 100% of tenants are very happy with new heating technology in their homes.

Laois Co Council, while acting in a local leadership role, cannot control the delivery of essential new green energy in these areas. We need energy providers in the room.

Indication of strong corporate willingness in the community.

Many communities dislike green energy infrastructure and their supporting networks.

Planning policy and over-riding public and environmental interest needs to be reset. Amongst hierarchy of environmental priorities where lies sustainable energy generation ? Consideration of Strategic Energy Zones?

# Conclusion

- ▶ The climate challenge is complex
- ▶ Carbon Footprint - Lessons learned
- ▶ Few simple solutions
- ▶ It is important that we consider all ways of addressing the climate challenge and all ways of reducing our energy use and emissions.
- ▶ Low carbon choices for the way we heat our homes.
- ▶ The challenges in transport are also significant
- ▶ More renewable electricity generation required
- ▶ retrofitting of homes
- ▶ LA's will play a strong role



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