



Energy Solutions for Sustainable Development



Mid West Business Week

Renewable Energy Business

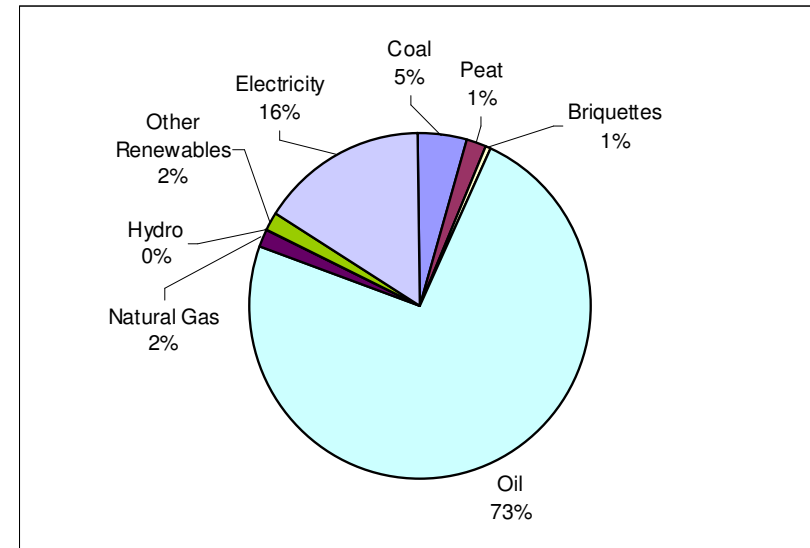
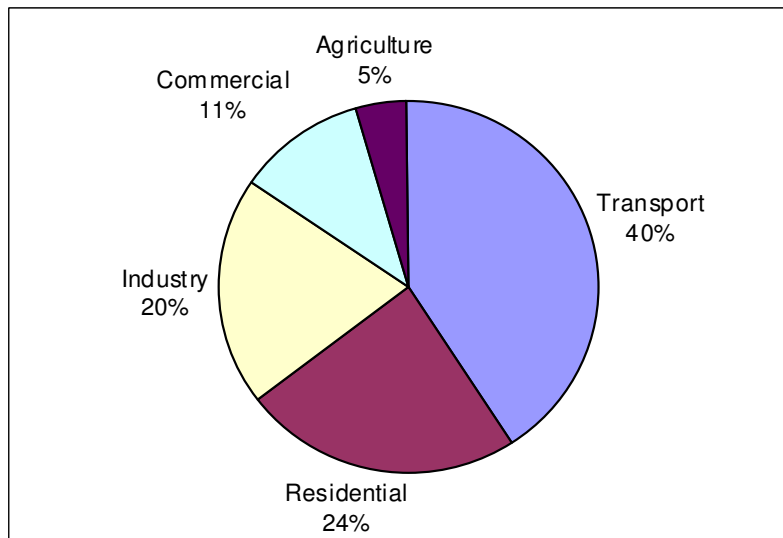
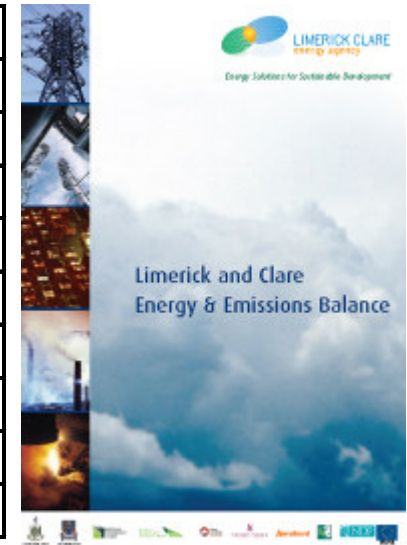
Ennis, Co. Clare

28th October 2010



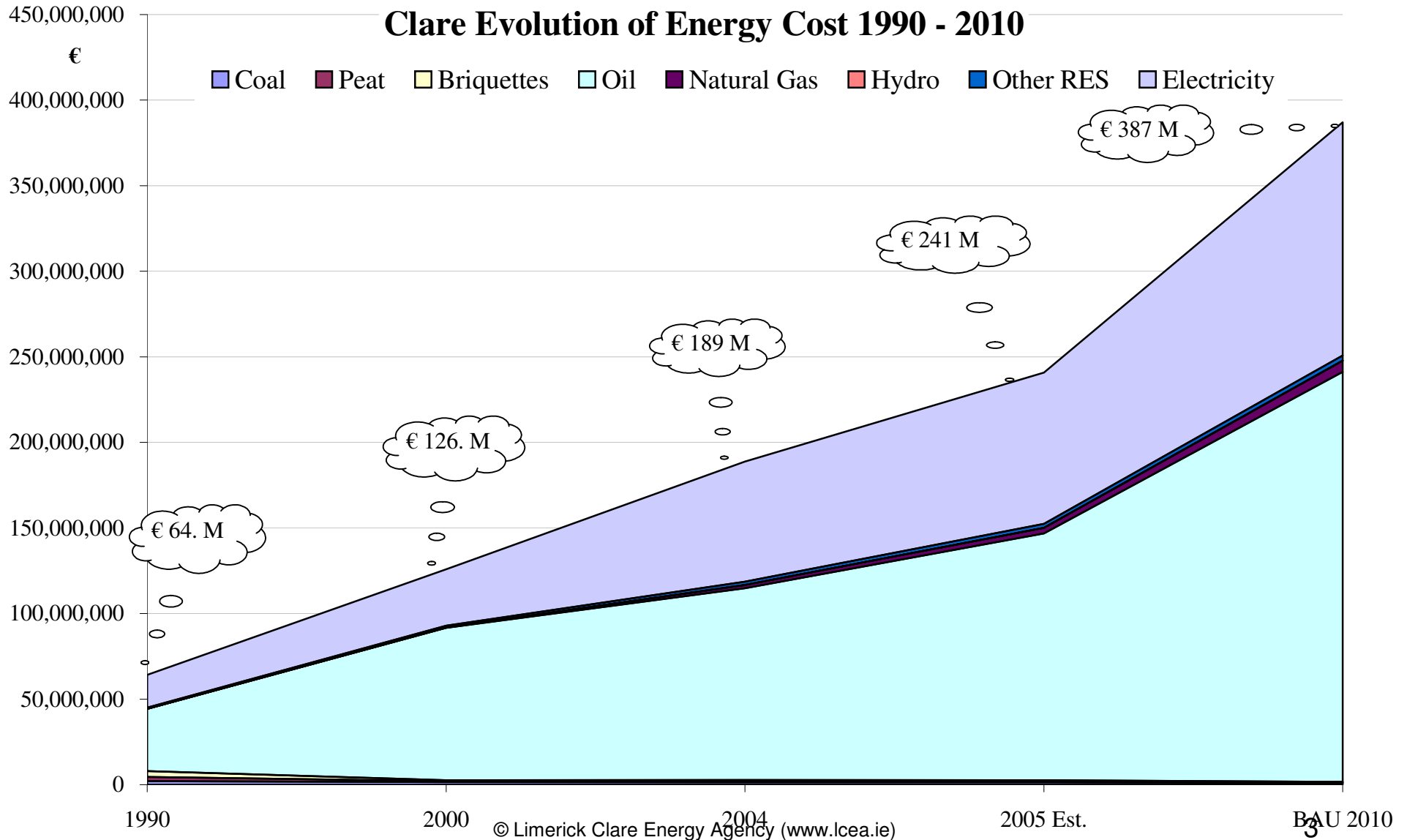
Energy & Emissions Balance

Fuel - GWh	1990	2000	2004	2005Est	BAU 2010
Coal	258.5	170.6	183.0	165.8	101.2
Peat	172.6	55.0	55.1	50.5	32.7
Briquettes	50.0	37.8	27.9	25.6	16.6
Oil	1,420.4	2,544.8	2,800.7	2,883.0	3,422.6
Natural Gas	-	3.5	65.0	83.9	109.7
Hydro					
Other RES	34.0	45.9	65.8	65.6	64.6
Electricity	320.7	549.2	608.9	631.4	757.2
TFC	2,256.2	3,406.8	3,806.3	3,905.7	4,504.6



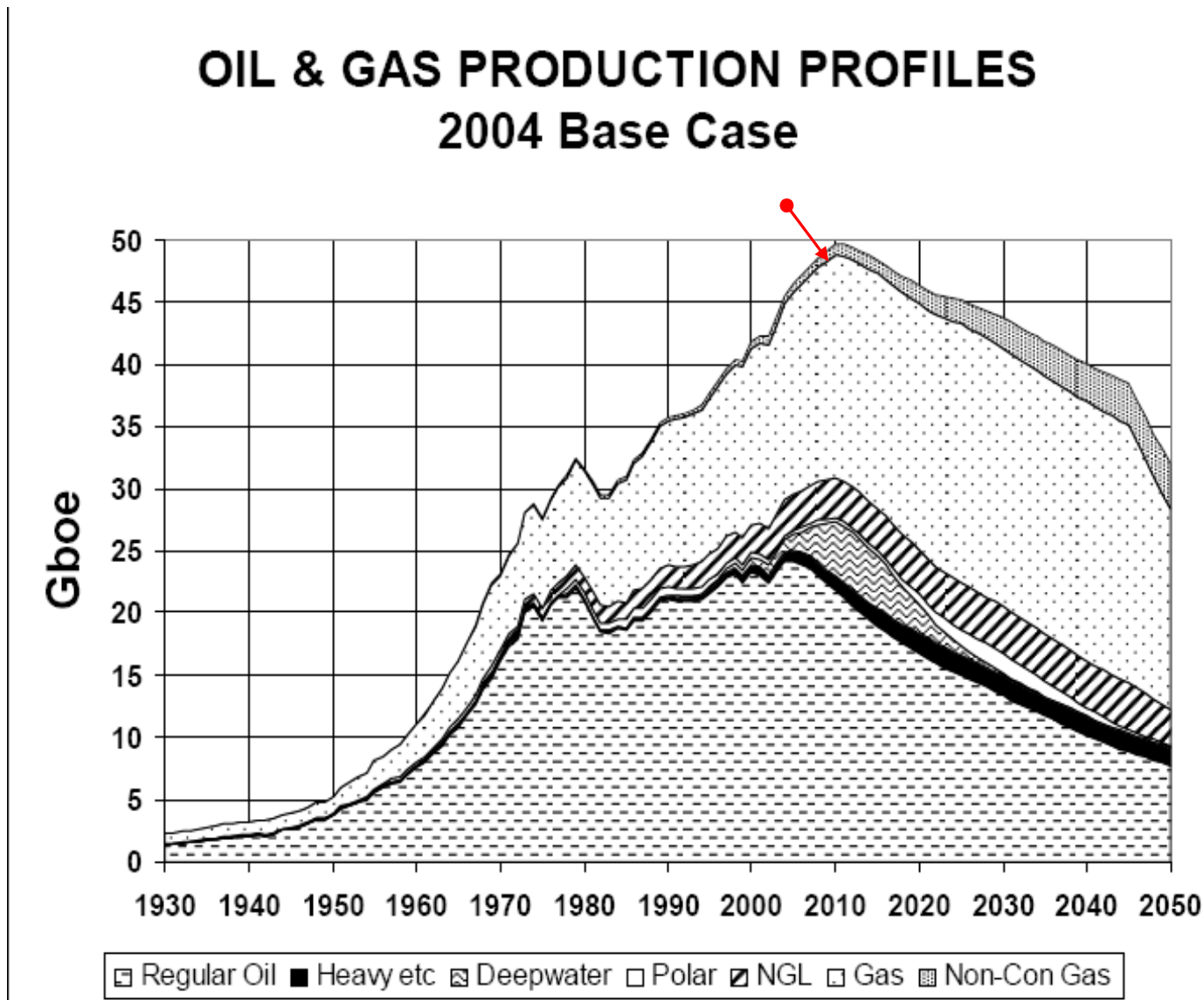


Energy Consumption - Cost





Energy Consumption – PEAK OIL



Source: ASPO Ireland, Dr. C.J. Campbell

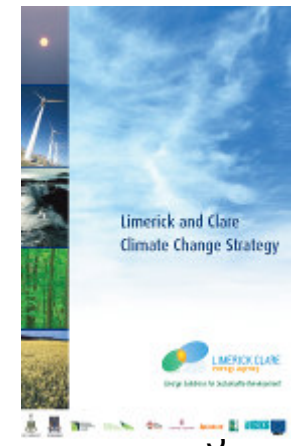
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Climate Change Strategy

'000 tonnes CO ₂	Clare	
	2010	2015
Energy Production & Supply (electricity)	208.42	306.9
Transport	54.29	70.34
Built Environment	38.37	51.86
Industry/Commercial Services	47	49.23
Agriculture	12	22.2
Waste	5.36	5.36
Total	365.45	505.88
Target Excess	489	595

To meet our Kyoto Commitments it will mean a reduction in CO₂ for every individual by 4.7 tonnes (by 2012)





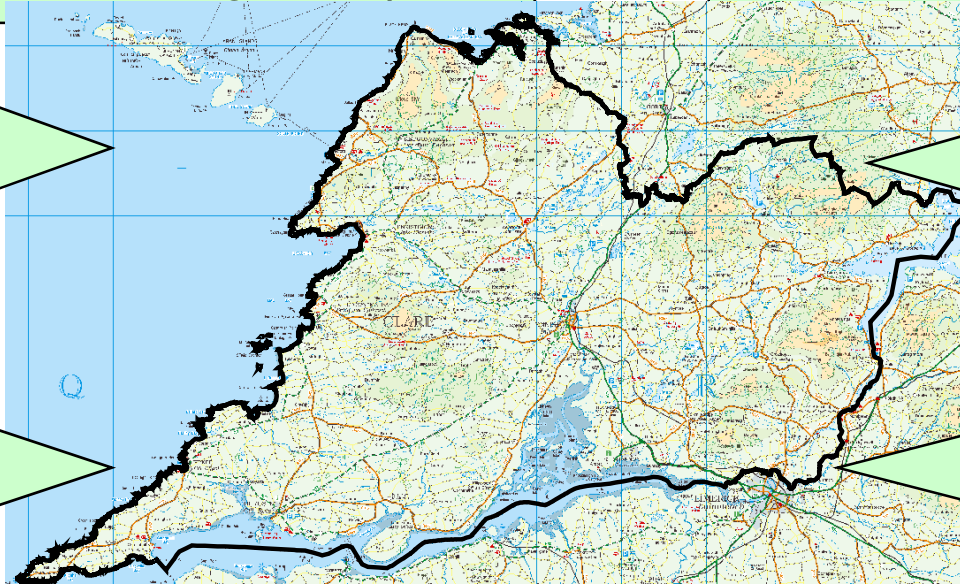
International & National Drivers

DEH&LG

- National Climate Change Strategy
- Energy Performance Buildings Directive
- Wind Energy Development Guidelines
- Micro Renewable Planning Exemptions

Dept. Transport

- Transport 21
- Smart Travel Projects
- Smart Travel Areas



DEC&NR

- White Paper on Energy
- National Energy Efficiency Action Plan
 - Renewable Energy Feed In Tariffs
 - Energy Conservation Programmes

Dept. Finance

- Vehicle Registration Tax
 - Property Tax
 - Carbon Tax



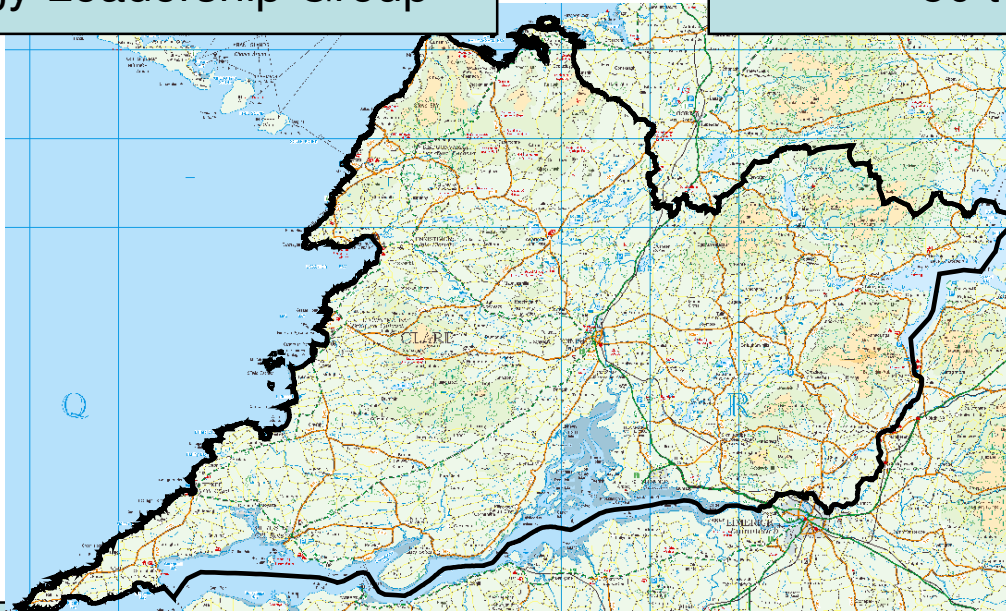
Government & N.G.O. - Policies

Shannon Energy Valley

- University of Limerick
 - NUIG, UCC
- Shannon Development
- Irish Technology Leadership Group

Spirit of Ireland

- Trinity College Dublin
- Graham O'Donnell
- Padraig Howard
- 50 team volunteers



ESB & Eirgrid

- Clean coal technology
 - Biomass co-firing
- Electric & bio fuel vehicle trials
- Grid infrastructure development

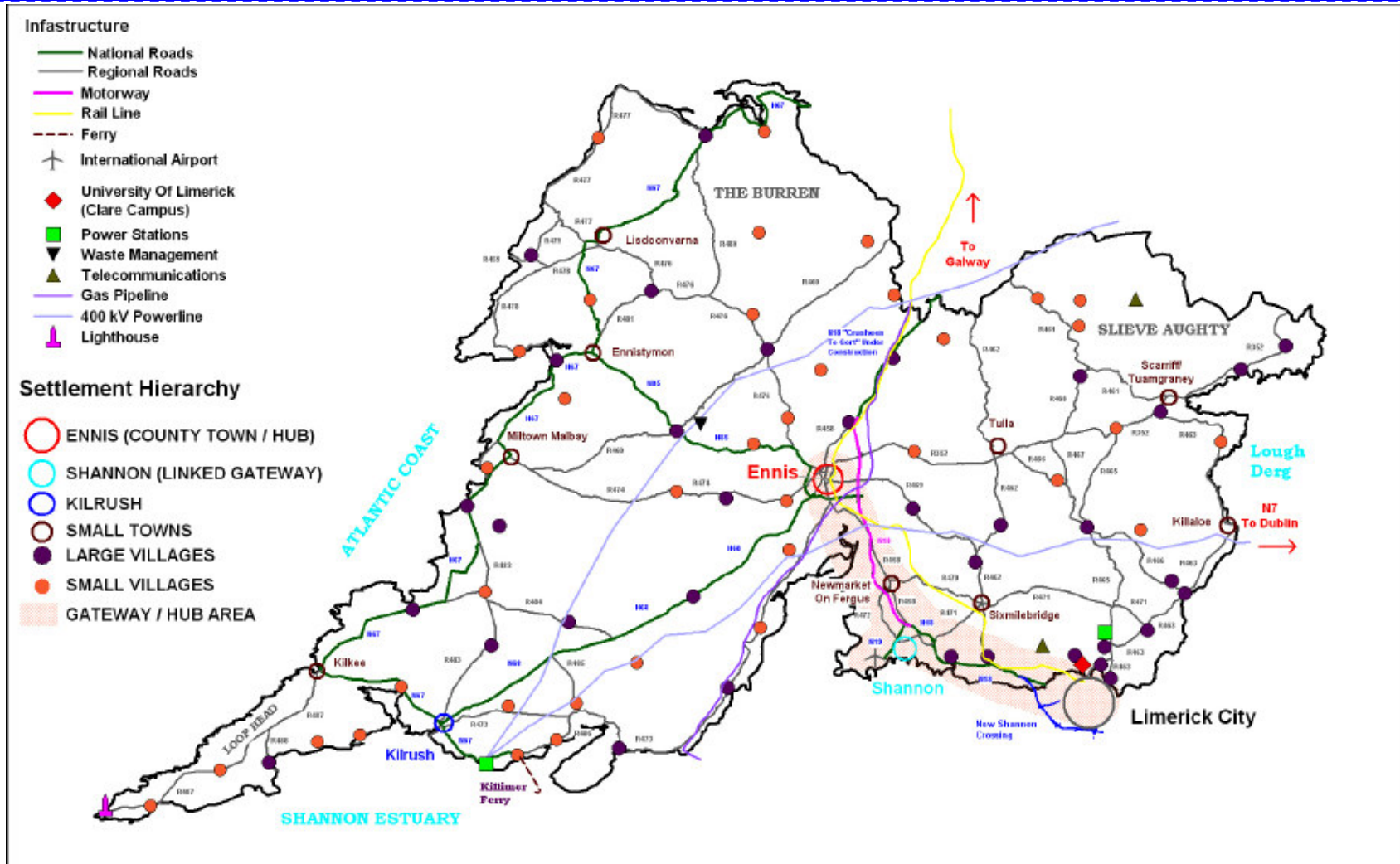
Energy Agency (www

Community & Commerce

- Clare Local Development Company
 - IDA; Enterprise Ireland
 - An Taisce
- Shannon Development



Clare Energy Infrastructure



Clare County Council

Comhairle Contae An Chláir
Tel. (045) 6821616 Fax (045) 6828237 Web: www.clareco.ie

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SENIOR PLANNER,
ÁRAS AN CHONTAE,
NEW ROAD, ENNIS,
CO. CLARE

**DRAFT CLARE COUNTY
DEVELOPMENT PLAN
2011 - 2017**

TITLE: KEY INFRASTRUCTURE

DATE: JANUARY 2010

MAP REFERENCE: 2A

DRAWN BY: P. MC MANUS

CHECKED BY: B. MC CARTHY

SCALE: NOT TO SCALE

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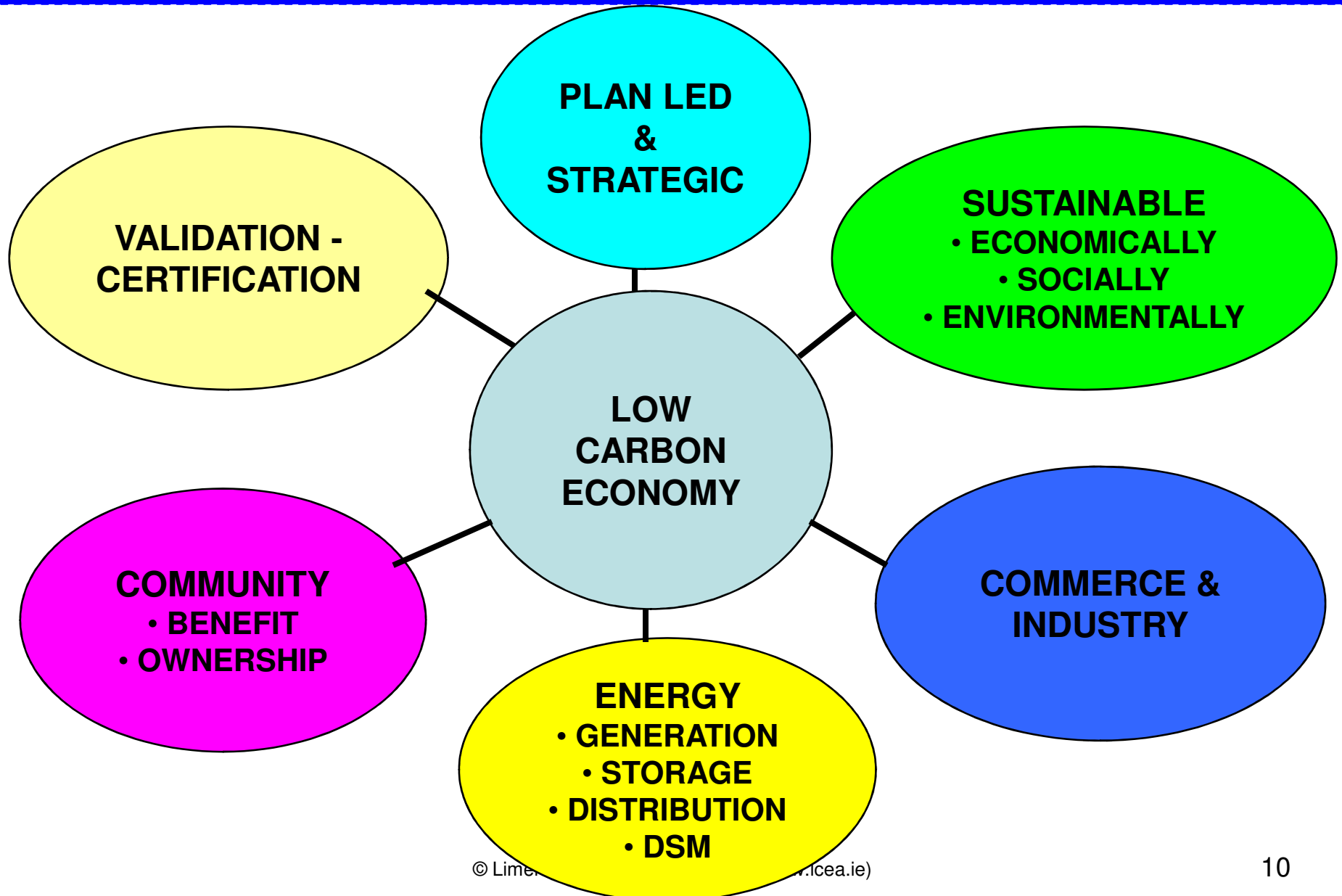


Low Carbon Economy

- Policy of European Union & United States
- Irish energy & climate change policy
- European municipalities
 - Fossil Free Vaxjo – Sweden
 - Goal of being fossil free by 2030
 - Calculated on the balance of energy import v export
- Sustainable Energy Ireland – Energy Zones
 - Dundalk 2020 project



County Development Plan on Energy





Benefits of Clare Low Carbon

- Greater energy security for business
- Increased profitability
- Lower carbon gives business market advantage
- Inward investment to low carbon centres
- Development of infrastructure
- Development of indigenous energy industry
- More energy revenue retained locally
- Job security & creation



County Development Plan on Energy

Development Plan Objective: Development of Low Carbon Economy

CDP 10.1

It is an objective of the Development Plan:

- a) To promote County Clare as a low carbon County by 2017 as a means of attracting inward investment to the County and the Mid-West region
- b) To facilitate the development of energy sources which will achieve low carbon outputs



Source: Draft Clare County Development Plan, 2011 – 2017.



County Strategy on Energy & Climate Change

Theme	Number of Objectives	Number of Actions
• Energy Security, Conservation & Efficiency	2	8
• Renewable & Indigenous Energy	3	16
• Low Carbon Economy – Reduce CO2 Emissions	3	9
• Research & Development capacity in Alternative Energy	1	2
• Transport energy efficiency, conservation & renewable energy	1	10
Totals	10	45

County Clare Integrated Strategy on Energy & Climate Change 2010 - 2012



Executive Summary

DRAFT



Clare County Council
Comhairle Contae an Chláir



Clare County Development Board



Limerick Clare Energy Agency

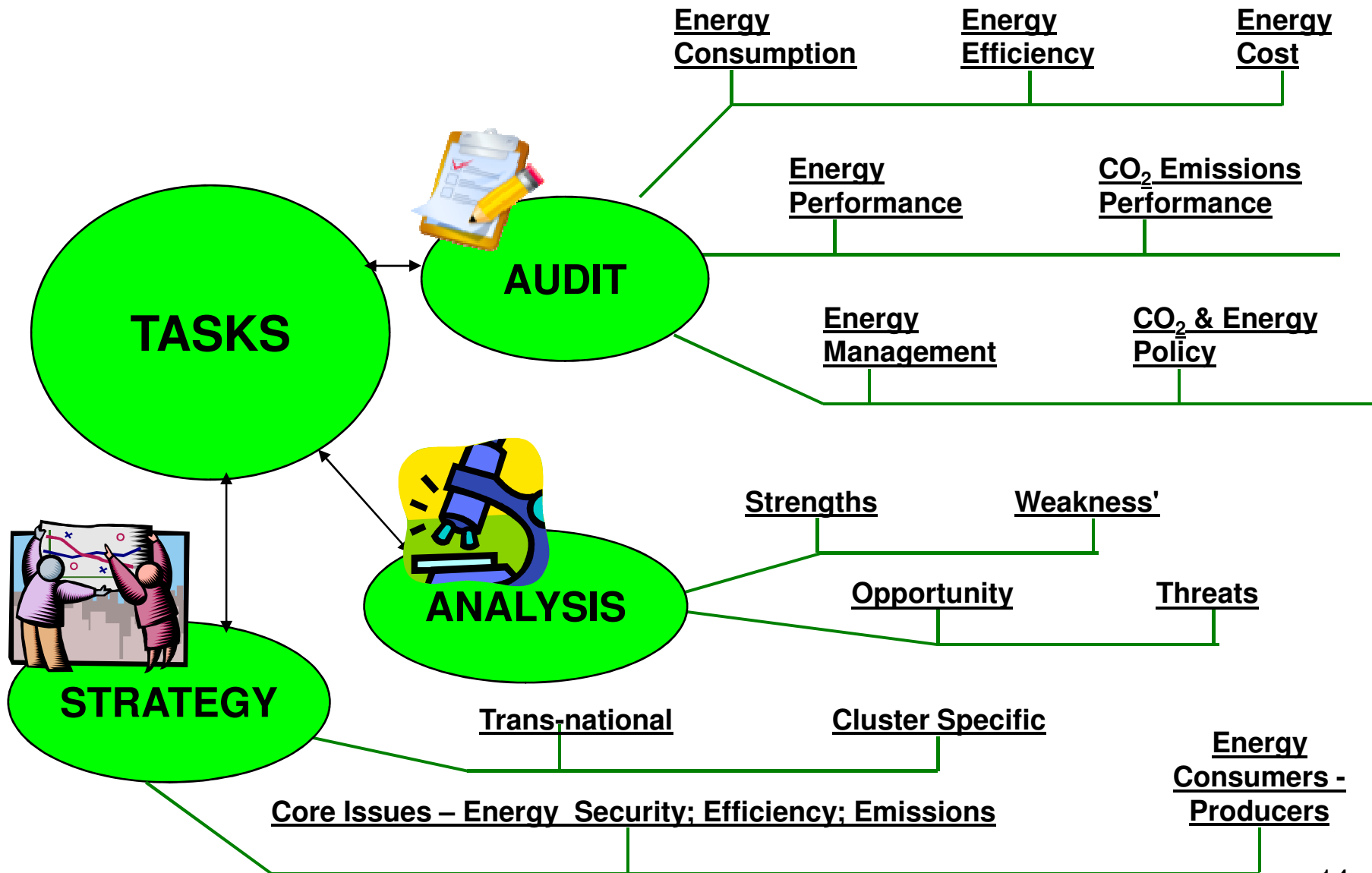
October 2010

Objective 2 – Action 2

Green Ennis & its Businesses

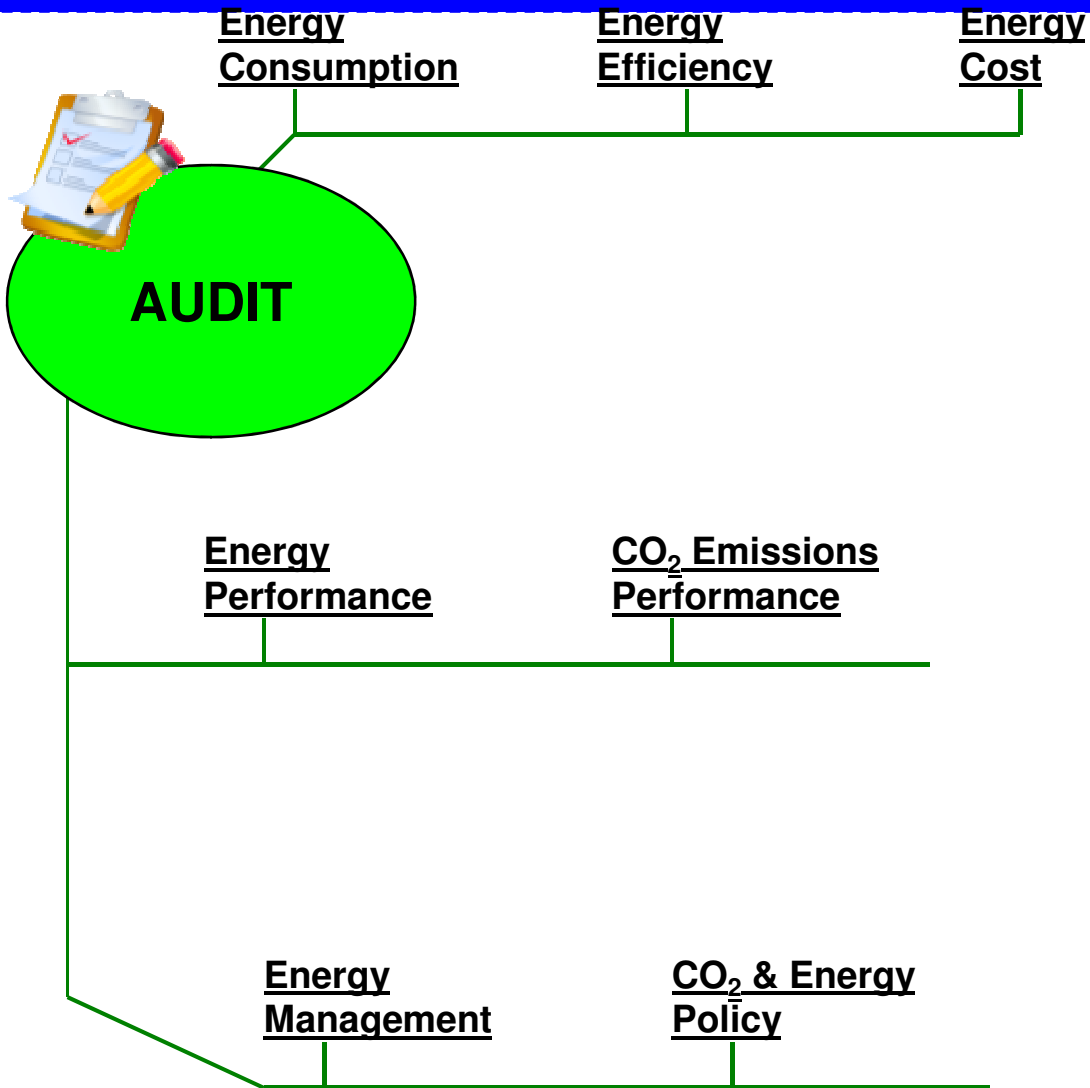


Build on the Lessons of RegCEP





AUDIT – Tool for Business



LIMERICK CLARE energy agency NPI Calculation Form

1. Convert your energy use into kWh units:
Add your quarterly or monthly use over one year for each fuel and enter below

Fuel	Unit	Conversion factor	Result	Unit
Natural gas	Therms	X 29.31	=	kWh
	Cubic feet	X 0.303	=	kWh
	Cubic metres	X 1	=	kWh
Liquid petroleum gas (LPG)	Litres	X 7	=	kWh
	Times	X 13500	=	kWh
Gas oil (35 sec)	Litres	X 10.6	=	kWh
	Times	X 11.2	=	kWh
Light fuel oil (290 sec)	Litres	X 11.2	=	kWh
	Times	X 11.3	=	kWh
Medium fuel oil (550 sec)	Litres	X 11.4	=	kWh
	Times	X 11.4	=	kWh
Heavy fuel oil (3500 sec)	Litres	X 11.4	=	kWh
	Times	X 11.4	=	kWh
Coal	Times	X 7600	=	kWh
	Times	X 9200	=	kWh
Anthracite	Times	X 3500	=	kWh
	Times	X 2800	=	kWh
Wood chip (Moisture content 35%-50%)	Times	X 4800	=	kWh
Wood chip (Moisture content >50%)	Times	X 4800	=	kWh
Wood pellets	Times	X 4800	=	kWh
Electricity	kWh	X 1	=	kWh

Total energy use for the year = kWh A

2. Find your space-heating energy use. Apply (A) OR (B):

(A) If you can identify any of the fuels above used only for space heating, enter the total energy use in kWh

Description	kWh
1.	
2.	
3.	
Total =	kWh B

(B) For fuels used for space heating and hotwater, where they not separately metered, use 60% of thermal energy used. This figure may also be used for all electrically heated buildings

Enter total thermal energy by fuel type:

a.	kWh
b.	kWh
c.	kWh
Total =	kWh x 0.60 = kWh C
Annual space heating energy (B or C) =	kWh D
Annual non-space heating energy (A-D) =	kWh E

3. Space heating energy adjusted for Shannon Region weather
Adjust the space-heating energy to standard conditions (D X G) = kWh F

4. Normalised annual energy use
Your annual energy use normalised for weather is = kWh G

5. Performance Parameter (Treated Floor Area e.c.)

Treated floor area =	m ² (F)
Your Performance Parameter =	X (G)

6. Find the Normalised Performance Indicator (NPI):

(A) Floor area	$NPI = \frac{I}{N}$	kWh / m ²
(B) 0	$NPI = \frac{I}{N}$	kWh / X

**Technical Support:-
LEA's - Universities**



Energy Solutions for Sustainable Development



Thank You

Limerick Clare Energy Agency

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Pat Stephens

Manager

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