




**Intelligent Energy**  **Europe**



# **New Ways to Competitiveness**

**Tartu Science Park,**

**Tartu City**

**Estonia**

**Regional Clusters for Energy Planning**

**Reg Cep**

**Gerard O'Connor – Shannon Development**

**Pat Stephens – Limerick Clare Energy Agency**

**10<sup>th</sup> May 2010**

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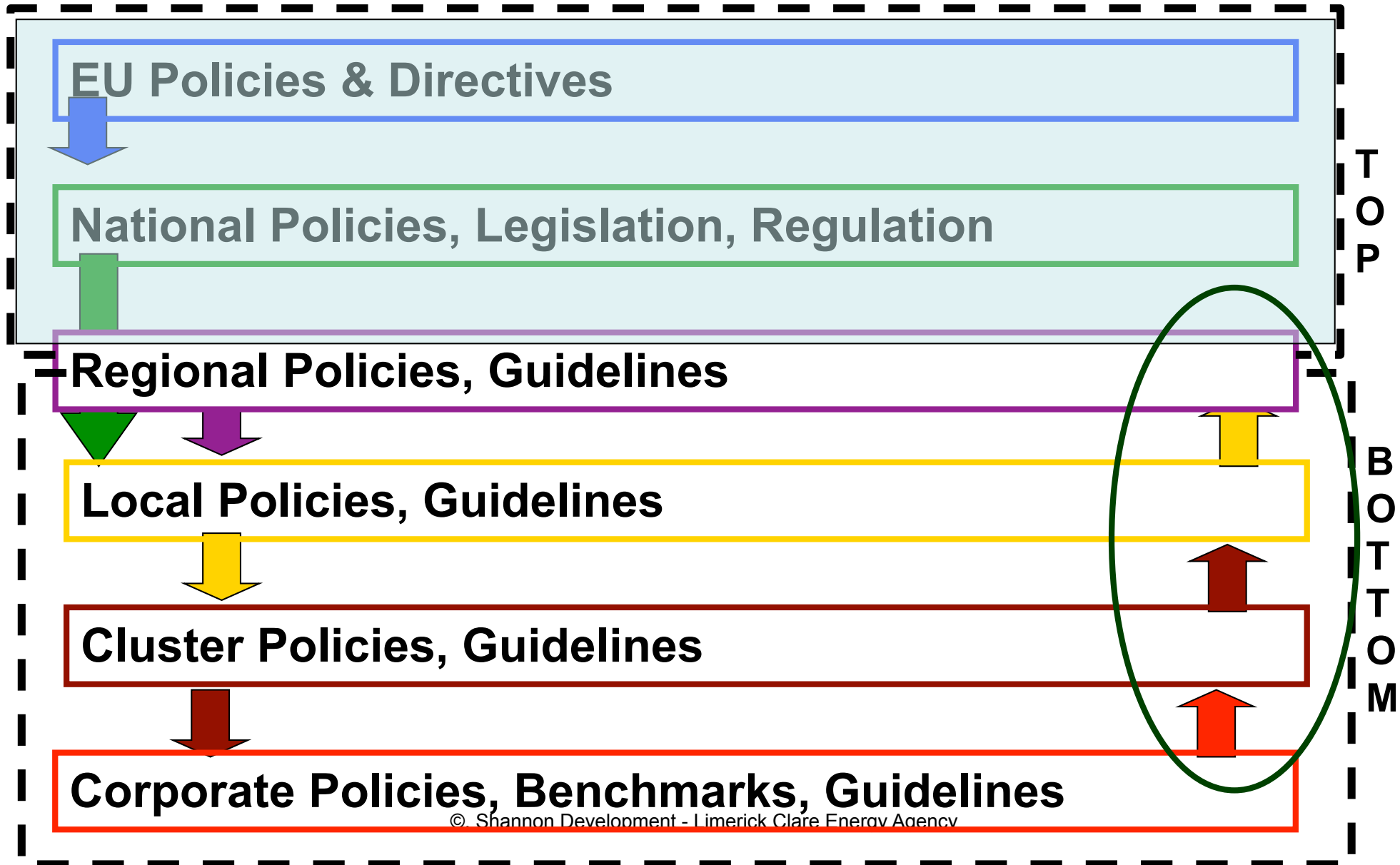


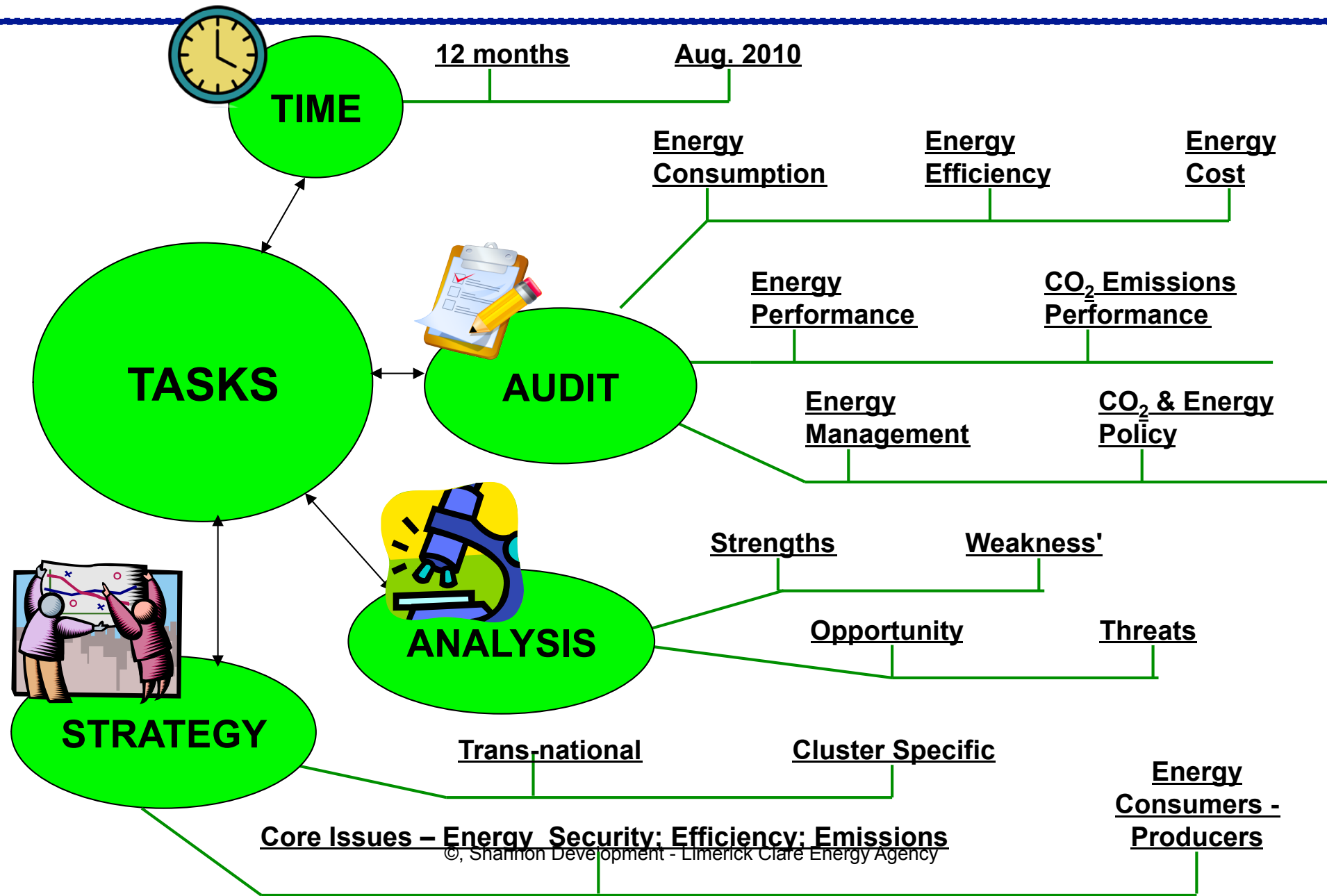
# Introduction 1

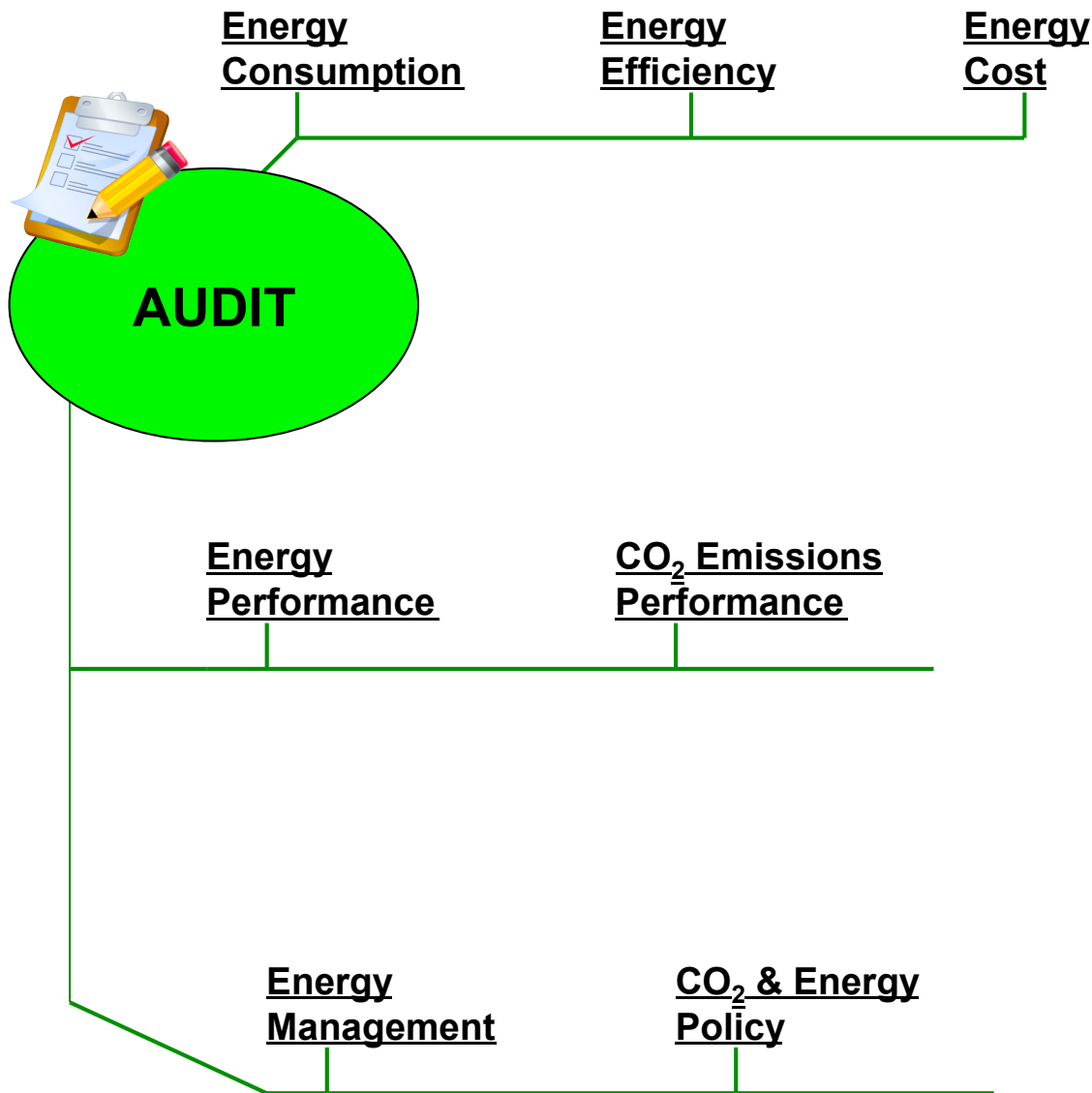
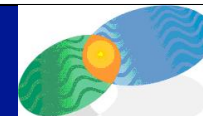
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- Energy Policy Direction
- Regional Clusters for Energy Planning
- Energy Efficiency / Benchmarking
- Analysis Process (SWOT)
- Strategy Development
- Shannon Free Zone, Ireland

# Top Down – Bottom Up Integration







**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

		Conversion factor		
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
	Tonnes	x 13900	=	kWh
Gas oil (35 sec)	litres	x 10.6	=	kWh
Light fuel oil (250 sec)	litres	x 11.2	=	kWh
Medium fuel oil (950 sec)	litres	x 11.3	=	kWh
Heavy fuel oil (3800 sec)	litres	x 11.4	=	kWh
Coal	Tonnes	x 7600	=	kWh
Anthracite	Tonnes	x 9200	=	kWh
Wood chip (Moisture content 35%-50%)	Tonnes	x 3500	=	kWh
Wood chip (Moisture content >50%)	Tonnes	x 2800	=	kWh
Wood pellets	Tonnes	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.	
<b>Total =</b>	kWh <b>B</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.	
c.	kWh

Enter total thermal energy by fuel type:

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 etc.)**

Treated Floor area =	m <sup>2</sup> $\eta$
Your Performance Parameter =	X $\eta_s$

**6. Find the Normalised Performance Indicator (NPI)**

(A) 
$$NPI = \frac{I}{M}$$

Floor area		kWh / m <sup>2</sup>
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(B) 
$$NPI = \frac{I}{N}$$

		kWh / X
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**Technical Support:-**

**LEA's - Universities**



# ANALYSIS

Threats

Common / Specific

Very Few Real Threats

## Strengths

Energy Security

Energy Efficiency

Renewable Energy Potential

Support Structures

Financial Support

## Weakness'

Policy – National / Local

Support Structures (LEA-RDA)

Renewable Resources

Supply Chain Immature

Specific to Region, Locality, Cluster, Industry

Skills

Energy Security

Lower Energy Cost

Low Carbon Economy

Renewable Energy Technology; R&D

Indigenous Energy Industry

Jobs

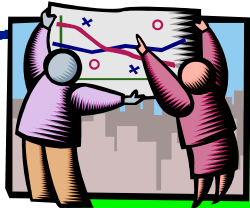
Skill Development

Connect Consumer to Producer

Utility Dominance

Corporate Dominance

Political Inertia



**Core Issues**

**Trans-national**

EU Policy / Directives

Common Industry / Sector

Indigenous Energy Industry Development

**Cluster Specific**

Local Energy Policy / Regulation

Industry Led

Reflect Energy Needs & Resources

Energy Security

Reduce Fossil Fuel Dependence

Energy Efficiency

Less Energy – Same Wealth = Jobs

Energy Emissions

Low Carbon Economy

Energy Consumers - Producers

Rural – Urban Redevelopment

# Shannon Free Zone

- Established – 1960
- World First duty free zone
- Model copied
- Distinct advantages
  - Airport
  - Major ports
  - Road system
  - Highly educated work force
  - Tourism



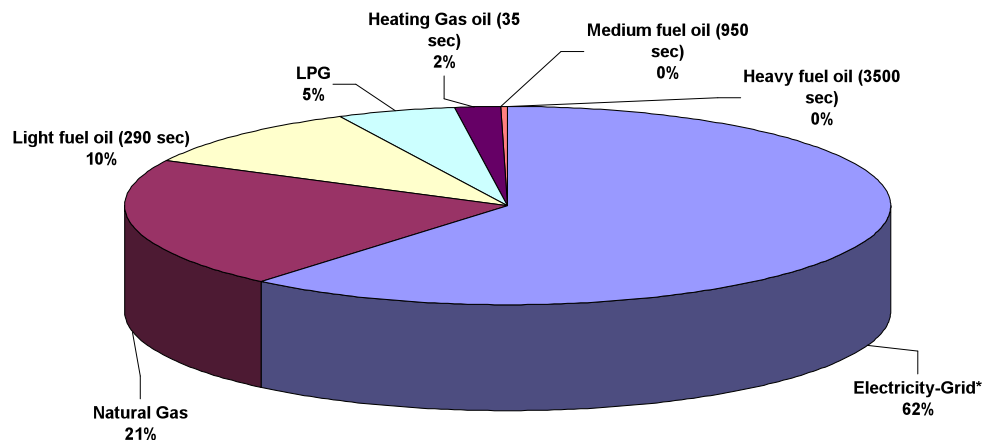
110 companies, 7,000 employees



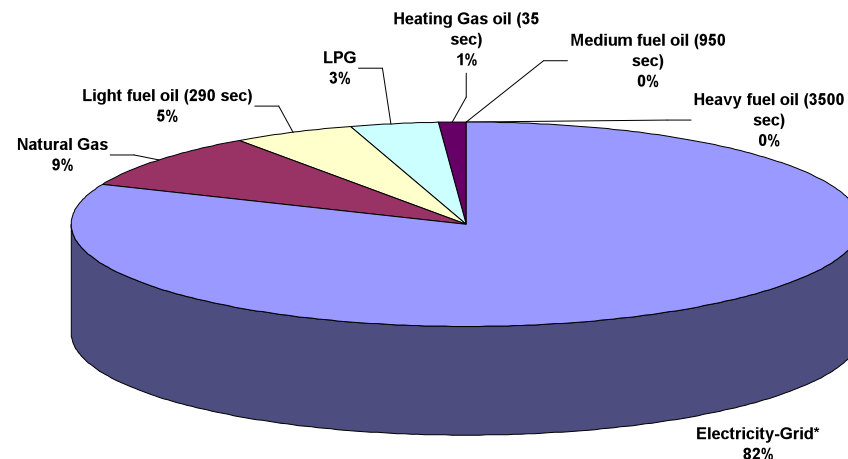
# Ireland - Shannon

Shannon	Energy - kWh	Annual T-CO2	Annual €
Electricity-Grid*	59,899,123.39	38,515.14	€8,146,280.78
Natural Gas	21,031,721.00	4,269.44	€904,364.00
Light fuel oil (290 sec)	10,088,568.00	2,844.98	€504,428.40
LPG	4,762,940.00	1,105.00	€344,360.56
Heating Gas oil (35 sec)	2,007,538.40	546.05	€108,407.07
Medium fuel oil (950 sec)	146,900.00	42.89	€6,610.50
Heavy fuel oil (3500 sec)	90,892.20	31.81	€2,726.77
<b>Cluster Fuel Summary</b>	<b>98,027,682.99</b>	<b>47,355.31</b>	<b>€10,017,178.00</b>

Shannon Energy - kWh



Shannon Energy €



# Energy Efficiency - Benchmarking

## Free Certification scheme for SME's

- Energy Policy
- Energy Benchmark Spread Sheet
- over 60 companies in the scheme



**Thank you.**

