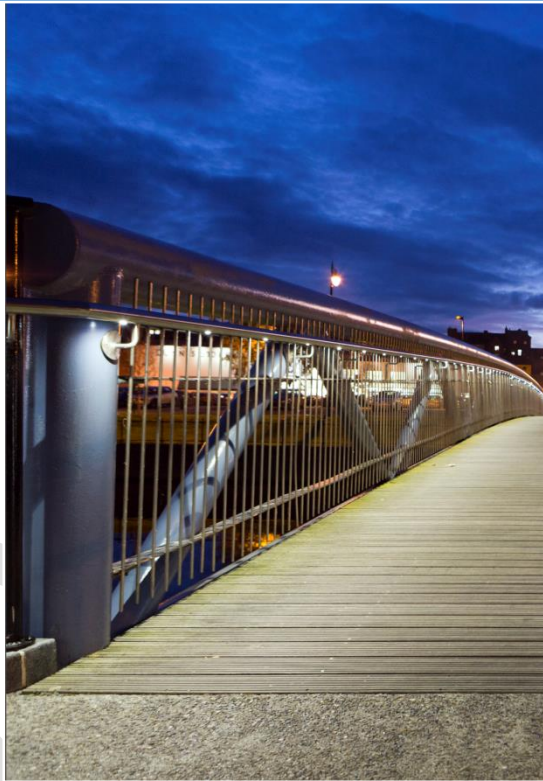


KILKENNY SUSTAINABLE ENERGY ACTION PLAN 2016 – 2020



Kilkenny County Council

Comhairle Chontae Chill Chainnigh

COVENANT OF MAYORS
DRAFT: JANUARY 2017

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DRAFT

FOREWORD BY CATHAOIRLEACH

Kilkenny County Council became a signatory to the Covenant of Mayors in April of 2015, committing itself to achieving excellence in sustainability across the county. The Covenant requires members to develop and implement a Sustainable Energy Action Plan (SEAP) for the county, which is monitored, evaluated & revised on an annual basis. As a signatory, Kilkenny County Council is also committed to submitting an implementation report every two years, outlining this evaluation, monitoring and verification process. We will also share and disseminate knowledge and best practice on energy with other signatories from across the EU.

The County Kilkenny Sustainable Energy Action Plan describes how we aim to reduce CO₂ emissions in excess of the mandatory target of 20% by 2020.

I wish to express my appreciation for those who have given their time to sit on the various committees and working groups that fed into the preparation of this Plan. I look forward to working with all the stakeholders in County Kilkenny as we strive towards achieving the ambitious targets set out in this Plan for the betterment of the lives of all our citizens.



Matt Doran

Cathaoirleach of Chontae Chill Chainnigh

January 2017

1.0 Covenant of Mayors - Introduction

WHAT IS THE COVENANT OF MAYORS

Heralded as the “world’s biggest urban climate and energy initiative” by Commissioner Miguel Arias Cañete, the Covenant of Mayors is the mainstream European movement involving local and regional authorities in the fight against climate change. It is based on a voluntary commitment by signatories to meet and exceed the EU 20% CO₂ reduction targets, through increased energy efficiency and development of renewable energy sources.



“world’s biggest urban climate and energy initiative”

1.1 Objectives and Targets

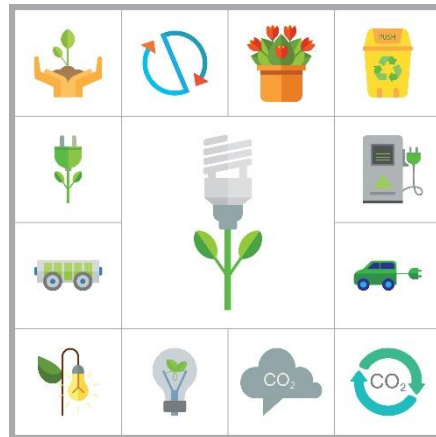
A number of key objectives have been identified that will frame the compilation of SEAP actions:

- To reduce the per capita CO₂ emissions of County Kilkenny;
- To demonstrate improvements in energy efficiency and help identify value for money in energy spending across all sectors in the County;
- To support the increase of renewable energy produced in the county;
- To support the reduction of energy imported by the County;
- To support the demonstration of reducing energy costs for businesses and to improve energy efficiency within the Commercial sector;
- To progress Kilkenny County Council's own energy efficiency and renewable energy projects / programmes and continue to communicate these experiences to inform best practice across all sectors;
- To improve quality of life and thermal comfort for residents in the County and help reduce the risk of fuel poverty;
- To increase the awareness and understanding amongst stakeholders and the general public of the objectives of Kilkenny County Council's SEAP.



1.2 Kilkenny County Council's Vision for the Future

The vision for the Kilkenny Sustainable Energy Action Plan is to reduce imported energy dependency across County Kilkenny by increasing energy efficiency and to promote a more sustainable development pattern. The Council is committed to acting as a focal point for the reduction of energy usage and the growth of renewable energy technologies and strategies throughout Kilkenny.



The aim of Kilkenny County Council is to influence the reversal of current energy trends across a multitude of sectors, specifically transport, public sector, residential sector, agricultural, commercial and industrial. To successfully achieve this challenging task requires wide stakeholder and citizen participation, in conjunction with infrastructural and building improvements. Kilkenny County Council will strive to improve energy efficiency throughout the local region, hence contributing to a sustainable and on-going improvement in the quality of life of every individual within the county.

1.3 SEAP Steering Committee

The main function of the Steering Committee is to guide and develop the SEAP in its implementation. Kilkenny County Council's Steering Committee created dedicated stakeholder working groups (in the areas of Public Sector, Agriculture, Transport, Residential, Commercial and Community) with which to engage, thus allowing more time and focus for each sector to examine and identify specific energy actions for inclusion in the SEAP. The Committee has developed this action plan that represents all of the County of Kilkenny and delivers the objectives and targets set out in Section 1.1. The Steering Committee members have been drawn from various sections within the County Council and

the Working Groups consist of representatives from the relevant sectors. Together they are guiding the SEAP in its development and implementation.

The Steering Committee is currently chaired by Councillor Matt Doran, Cathaoirleach and is supported by the Environment Section of Kilkenny County Council and the Carlow Kilkenny Energy Agency (CKEA).

During the lifetime of the SEAP Development there have been three Cathaoirligh involved; Pat Millea signed the Covenant of Mayors in April 2015, Councillor Mary Hilda Cavanagh instigated and chaired the Steering Committee and Matt Doran will be finalising the SEAP and submitting to the COM for approval.

The initial meeting of the steering committee, whose members are listed overleaf, took place in 20th April 2015.



STEERING COMMITTEE MEMBERS

MATT DORAN

COUNCILLOR

CATHAOIRLEACH, KILKENNY COUNTY COUNCIL

MARY MULLHOLLAND

DIRECTOR OF SERVICES

KILKENNY COUNTY COUNCIL

MARY HILDA CAVANAGH

COUNCILLOR

KILKENNY COUNTY COUNCIL

MAURICE SHORTALL

COUNCILLOR

CATHAOIRLEACH SPC5, KILKENNY COUNTY COUNCIL

TONY LAUHOFF

BREWERY SITE PROJECT

KILKENNY COUNTY COUNCIL

EIMEAR CODY

HOUSING

KILKENNY COUNTY COUNCIL

CAITRIONA O'SULLIVAN

PLANNING

KILKENNY COUNTY COUNCIL

FIONA DEEGAN

LOCAL ENTERPRISE OFFICE

KILKENNY COUNTY COUNCIL

ALEXANDRA HAMILTON

- CARLOW KILKENNY ENERGY AGENCY

DECLAN KEOGH

- CARLOW KILKENNY ENERGY AGENCY

1.4 Involvement with Key Stakeholders and Citizens

Kilkenny County Council has a long history of involvement with local communities and stakeholders.

WE STRIVE ON A CONTINUOUS BASIS TO:

- Engage with our local communities and stakeholders
- Provide information and education relating to local, national and EU energy initiatives
- Identify potential funding sources
- Promote positive participation
- Ensure a forum for ongoing dialogue, collaboration and action

Below are some of the mechanisms through which the Council develops and implements the various energy and environmental related initiatives in the County.



- **Strategic Policy Committee (SPC)** - Strategic policy committees are a mechanism for reaching consensus and informed decision making on council policy, prior to adoption by the full Council. SPC 5 for Environmental Protection, Water Services and Energy, which includes elected representatives and nominated sectoral interests, will ensure that the policy/action plan takes into consideration the views, issues and recommendations by those directly impacted by the actions proposed.
- **The Environmental Awareness Officer of Kilkenny County Council** – the role of the Environmental Awareness Officer is to inform and promote environmental awareness within the community

- **The individual Service Delivery Sections of Kilkenny County Council** – whose role and responsibilities influence the energy consumption associated with the delivery of these services
- **Stakeholder Working Group Members** - who represent stakeholders and individuals within County Kilkenny
- **Carlow Kilkenny Energy Agency** – the CKEA is an independent local energy agency specialising in Sustainable Energy practices, whose role is to facilitate the development and monitoring of the Kilkenny County Council SEAP
- **Public Participation Network (PPN)** – this is a new network of local groups that ensures inclusion, diversity of views and collaboration between the local community and the Council

2.0 Legislation and Policy

Background

This section sets out the legislation, policy and local strategies that underpin the County Kilkenny Sustainable Energy Action Plan (SEAP). Against this legislation and policy context, a series of energy targets for 2020 have been established to inform the SEAP actions that are required across all sectors.

2.1 EU / National Legislation and Policy Background

The targets identified for the SEAP are underpinned by legislation and policy at a European level; these EU targets have been adopted nationally and inform the development of energy policy at regional / county level. The CO₂ emission targets set out a range of measures to ensure Ireland reaches its overall target (no more than a 13% increase in national greenhouse gas emissions from 1990 baseline levels by 2012) under the Kyoto Protocol. Key influencing policy / legislation documents are detailed as follows:



EU Energy Efficiency Directive 2012/27/EU

On 25th October 2012, the EU adopted the Directive 2012/27/EU on energy efficiency. This Directive establishes a common framework of measures for the promotion of energy efficiency within the European Union. This is to ensure the achievement of a 20% headline target on energy efficiency by 2020 and to pave the way for further energy efficiency improvements beyond that date. It lays down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy, and provides for the establishment of indicative national energy efficiency targets for 2020.

EU Renewables Directive (ESD2009/28/EC)

The Renewables Directive mandates levels of renewable energy use within the European Union. The directive requires member states to attain a pre-agreed

proportion of energy consumption from renewable sources, such that the EU as a whole shall obtain at least 20% of its total energy from renewables by 2020.

The EU Climate and Energy Package (2007)

In March 2007, the EU's leaders endorsed an integrated approach to climate and energy policy which aims to combat climate change and increase the EU's energy security while strengthening its competitiveness. They committed Europe to transforming itself into a highly energy-efficient, low-carbon economy. A series of climate and energy targets to be met by 2020 were set; these are known as the "20-20-20" targets and are key to determining subsequent national policy.

These EU wide targets are as follows:

- A 20% reduction in EU greenhouse gas emissions from 1990 levels;
- Raising the share of EU energy consumption produced from renewable resources to 20%;
- A 20% improvement in the EU's energy efficiency.

EU End User Efficiency and Energy Services Directive (ESD2006/32/EC)

This is a framework to ensure that when energy is finally consumed it is done so in a more efficient and economical way. This directive led to the development of the National Energy Efficiency Action Plan (NEEAP) 2009-2020.

Climate Action and Low Carbon Development Act (2015)

This is Ireland's first ever dedicated climate change law and it provides for the development of the following:

- Five year National Mitigation Plans that detail the policy measures necessary to reduce greenhouse gas emissions
- National Adaptation Framework, which details the national strategy for local authorities and various sectors in adapting and implementing the different mitigation measures designed to protect the State from the negative impacts of Climate Change
- Climate Change Advisory Council, which will advise the government on climate change matters.

COP 21 Summit Paris 2015

Ireland is a Signatory to the 'Paris Agreement' on Climate Change agreed at the COP 21 Summit in Paris in December 2015.

The Paris Agreement recognises a role for cities, regions local authorities and non-Party stakeholders in addressing climate change.

They are invited to

- scale up their efforts and support actions to reduce emissions;
- build resilience and decrease vulnerability to the adverse effects of climate change;
- uphold and promote regional and international cooperation.

http://ec.europa.eu/clima/policies/international/negotiations/paris_en

Given the scale of ambition of the Paris Agreement to limit Global Warming to well below 2°C above pre-industrial levels, Kilkenny County Council and the wider community in Kilkenny will play its role to go beyond mandatory targets in key energy sectors identified within the SEAP.

Ireland's Transition to a Low Carbon Energy Future 2015-2030

The White Paper sets out a vision for transforming Ireland's fossil fuel-based energy sector into a clean, low carbon system by 2050. It is a complete energy policy update and describes the actions and targets for the energy policy framework out to 2050 to support economic growth and meet the needs of all consumers. It sets a clear path for meeting the Government's goals of ensuring safe and secure energy supplies, promoting a sustainable energy future and supporting competitiveness.

Its objective is to guide Ireland's transition to a low carbon energy system which provides secure supplies of competitive and affordable energy to all citizens and businesses.

National Energy Efficiency Action Plan (NEEAP) 2014-2020

Ireland's 2014-2020 National Energy Efficiency Action Plan builds on the previous plans submitted to the European Commission in 2007 and 2009. Published in 2014, the updated plan outlines 57 measures towards achieving a 20% reduction in energy demand (baseline 1990) across the

whole of the economy through energy efficiency measures by 2020. Recognising that Government must lead by example, the public sector is committed to achieving a 33% reduction in energy use.

National Renewable Energy Action Plan (NREAP) 2010

Ireland’s renewable energy target under the Renewables Directive is that 16% of national fuel energy shall be produced from renewable sources, as set out in the National Renewable Energy Action Plan. This plan sets out Ireland’s national trajectories for the share of energy from renewable sources to be consumed in transport, electricity, heating and cooling to 2020.

Table 2.1 below illustrates Ireland’s renewable 2020 targets, progress made (as of 2014) and the gap that remains.

Target	2020 (Target)	2014 (Actual)	Distance to Target
Renewable Energy (Overall)	16%	8.6%	7.4%
Renewable Electricity (RES-E)	40%	22.7%	17.3%
Renewable Heat (RES-H)	12%	6.6%	5.4%
Renewable Transport (RES-T)	10%	5.2%	4.8%
Energy Efficiency	20% saving	8-9% saving	11-12% savin

Table 2.1.1 Ireland’s Renewable Energy Targets and Progression (2014)

2.2 Regional/County Policy & Strategies

There are a number of regional and county policies / strategies which include a range of energy issues and objectives, and also set out the EU targets to be met. These include the following;

Kilkenny County Development Plan 2014 – 2020

The Development Plan sets out Kilkenny County Council’s policies and objectives for the proper planning and sustainable development of the County from 2014 to 2020 and has regard to relevant national plans, policies and strategies which relate to the proper planning and sustainable development of the County..

It is the policy of Kilkenny County Council to encourage and facilitate sustainability through the development of ‘green’ industries, including industries relating to renewable energy and energy-efficient technologies, waste recycling and conservation. Kilkenny County Council will promote and support businesses, industry and home owners interested in converting to renewable sources of energy.

The National Climate Change Adaptation Framework has informed the Council’s approach to the County Development Plan as they develop and implement local adaptation strategies. Each of these strategies will contribute to the national response to the impacts of climate change.



Figure 2.2.1 Aerial view of Kilkenny City

SPECIFICALLY THE LOCAL AUTHORITY WILL PROMOTE AND FACILITATE THE FOLLOWING;

- County Kilkenny to become a low carbon county by 2020 as a means of attracting inward investment and to facilitate the development of energy sources which will achieve low carbon outputs;
- The South East Bioenergy Implementation Plan
- The Wind Energy Development Strategy
- Other Renewable energy measures such as solar thermal / heat pumps or stoves in public, commercial and domestic buildings;
- The installation of solar collectors which can be particularly economical for space or water heating in large buildings.
 - Even in Ireland's variable climate, solar panels can provide around 60% of the hot water requirements for homes and buildings;
- New buildings (public, commercial and domestic) designed with both comfort and minimum energy use in mind.
 - Using passive design techniques
 - Ensuring minimum artificial heating, cooling and lighting
 - Including renewable technologies such as solar energy
- Retro-fitting existing buildings such as hospitals, leisure centres and council offices with:
 - Passive design techniques
 - Minimum artificial heating, cooling and lighting
 - Solar panels for space and water heating;
- Provision of education and awareness within all sectors of the need to reverse fossil fuel dependency, to mitigate the effects of peak oil and reduce carbon emissions to mitigate the effects of climate change.
- Work towards building a skills base within Local Authority staff; planning, environment and housing technical in particular, and in the broader community and private sector on the technical implementation of passive house standards, renewable energy systems, and the retrofitting of older heritage buildings to low energy consumption standards.

Kilkenny Local Economic & Community Plan 2015 – 2021

The plan aims to improve the well-being of the people and economy of County Kilkenny through enhanced strategic planning, targeting of resources and more meaningful impacts for local communities. It will provide the strategic framework for all publicly funded economic, local and community development programmes in the County with the objective of maximising the social, community, cultural, sporting and economic development of County Kilkenny on a regional level.

The Kilkenny Local Economic & Community Plan (LECP) recognises sustainable development and the need to mitigate the negative impact of climate change as one of its primary drivers. The LECP's commitment and targets within its own framework and authority are a clear answer to the energy challenge.

The principles underpinning the Kilkenny LECP are as follows:

- The promotion and mainstreaming of equality
- Sustainability – Promoting a more resource efficient, green and more inclusive economy
- Maximising Returns - by cooperation, collaboration and avoiding duplication
- Participative Planning – ensuring meaningful community participation and consultation in the planning process
- Community Consultation and Engagement
- Community Development Principles – addressing social exclusion and providing supports for the most marginalized
- Accessibility and Ownership – written in a straight forward style

Climate Change and Energy: the LECP acknowledges both the National Climate Change Adaptation Framework and the Climate Action and Low Carbon Development Act and recognises the role it plays in contributing to the national target of 16% of gross final consumption coming from renewable energy by 2020.

Kilkenny County Council as a Covenant of Mayors Signatory: By becoming a Covenant of Mayors signatory, and developing and implementing the Sustainable Energy Action Plan for County Kilkenny, the Council will have taken a major step in the county towards reaching National and EU emission targets by 2020 and beyond. The Council is taking an evidence

based approach, using baseline data and ongoing monitoring and measuring, as the best way of reaching and exceeding their targets. Kilkenny County Council, Carlow Kilkenny Energy Agency and key community and commercial stakeholders, have together compiled a wide range of key actions, covering all sectors, to enable a more sustainable and energy efficient approach for Kilkenny, with the Local Authority being an exemplar throughout this action plan. Kilkenny County Council understands the philosophy of Think Globally, Act Locally and recognises the important part that it plays. Figure 2.2.2 below illustrates the Global Goals for Sustainable Development as developed by the United Nations.



Figure 2.2.2 The Global Goals for Sustainable Development

3.0 Collection of Data and Methodology

To calculate County Kilkenny’s total final consumption and CO₂ emissions for this Sustainable Energy Action Plan (SEAP), 2006 was chosen as the baseline year. This year was selected due to the availability of reliable CSO Census of Population data. Data was collated under various headings as follows; residential, public sector, transport, commercial and industry.

This SEAP has been developed using the data from the 2006 CSO Census of Population, together with energy data produced by the Sustainable Energy Authority of Ireland 2006 and Environmental Protection Agency (EPA).

3.1 Public Sector Data

The methodology used for the calculation of section 4.2 Public Sector - Total Primary Energy Consumption and CO₂ Emissions, was measured from 2009-2013 SEAI Energy MAP reporting of Kilkenny's public sector and was compared to the national public sector obtained from SEAI.

3.2 Residential Data

The methodology used for residential dwellings was to measure the Building Energy Ratings (BERs) published on the SEAI portal. County Kilkenny had a total of 10,451 BERs publishable for use in this SEAP. The energy performance is expressed as: (a) Primary energy use per unit floor area per year (kWh/m² /yr) represented on an A to G scale; and (b) Associated Carbon Dioxide (CO₂) emissions in kgCO₂/m² /yr. The BER data was then presented in the rating per dwelling under the category of Detached, Semi-Detached, Terraced and Apartment dwellings.

3.3 Transport Data

The national primary energy and CO₂ emissions in the transport sector was obtained from SEAI. From the data, revised results are calculated by omitting the aviation industry and fuel tourism, as well as rail and public passenger services (which are included in the public sector). Calculation for Kilkenny's primary energy consumption and CO₂ emission was based on the average percentage of vehicles of different categories in Kilkenny and the State, obtained from the CSO Census 2006.

3.4 Commercial and Industrial Data

The methodology used in calculating the baseline energy and corresponding CO₂ data for the Commercial and Industrial Sector was consistent with that used for the previous sectors, i.e. the national figures (obtained from SEAI) were apportioned based on the population of the County.

3.5 Agriculture Data

The methodology used for the agriculture sector, was based on the estimation of total primary energy consumption and the corresponding CO₂ emissions. The area of farmland in Kilkenny was measured against the national farmland area and was expressed as a percentage, based on the data provided by CSO Census 2011. This same percentage figure was used to calculate Kilkenny's primary energy consumption in the agriculture sector, by multiplying it by the national primary energy consumption figure for agriculture, obtained from the SEAI.

4.0 County Kilkenny Baseline Emissions Inventory

The data used to compile the energy consumption of County Kilkenny was derived from national energy statistics and apportioned to the county according to demographics and economic indicators. The methodology applied is highlighted in Section 3 of this document.

4.1 County Kilkenny Energy Consumption, CO₂ Emissions and Targets

2,276 GWh of primary energy was consumed across County Kilkenny in 2006. As shown in Figure 4.1.1, oil was the largest energy fuel type consumed at 64.41% of total fuel, followed by Electricity at 17.09%, Natural Gas at 9.99% and Coal & Peat at 7.02%.

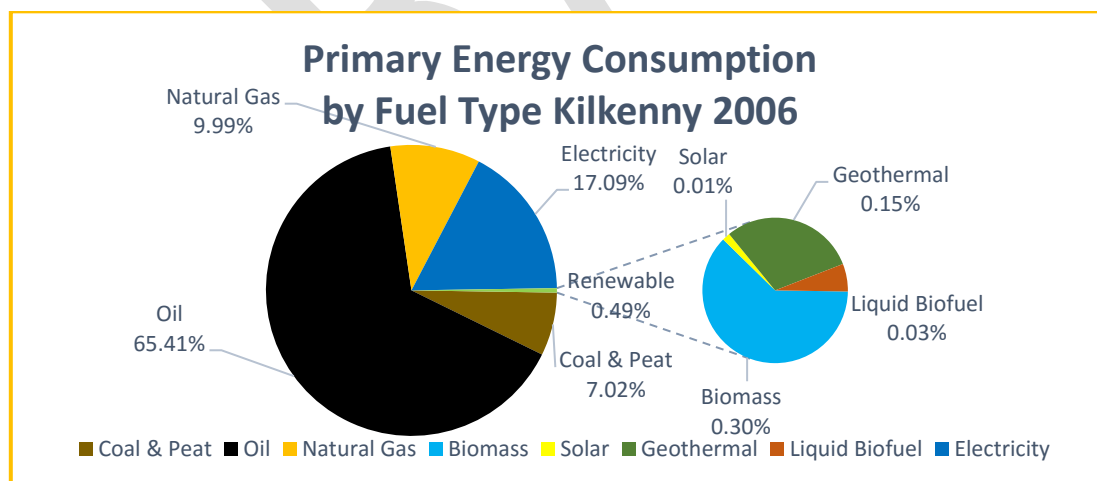


Figure 4.1.1: County Kilkenny Primary Total Energy Consumption by Fuel Type 2006

County Kilkenny emitted 1,394 Kilowatt Tonnes of Carbon Dioxide (CO₂) in 2006. Figure 4.1.2 illustrates that oil is also the largest emitter of CO₂ with 53.52% of the total Kilkenny CO₂ emissions. However, due to the primary energy factor and losses in transmission of

electricity, there is a significant increase in the percentage of emissions attributable to electricity, which emitted 32.14% of the total CO₂. Next is Coal and Peat with 7.89% of the total CO₂ and finally Natural Gas with 6.45%.

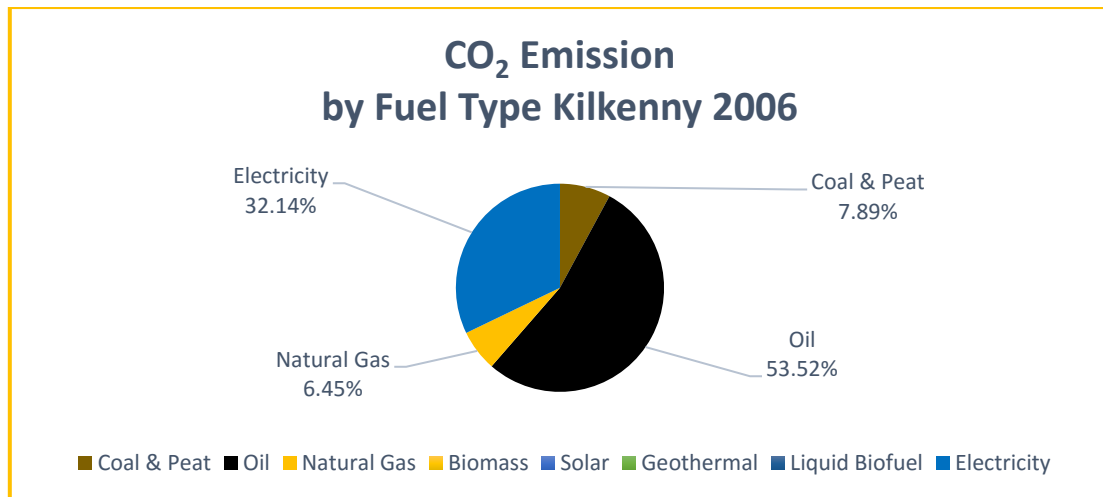


Figure 4.1.2: Kilkenny Total CO₂ Emissions by Fuel Type 2006

In comparing energy use across the sectors, Figure 4.1.3 shows that the transport sector is the largest user of energy with 43% of the total energy consumed. Residential is also a significant energy consumer at 40%, followed by Commercial at 10% and the Public sector at 2%.

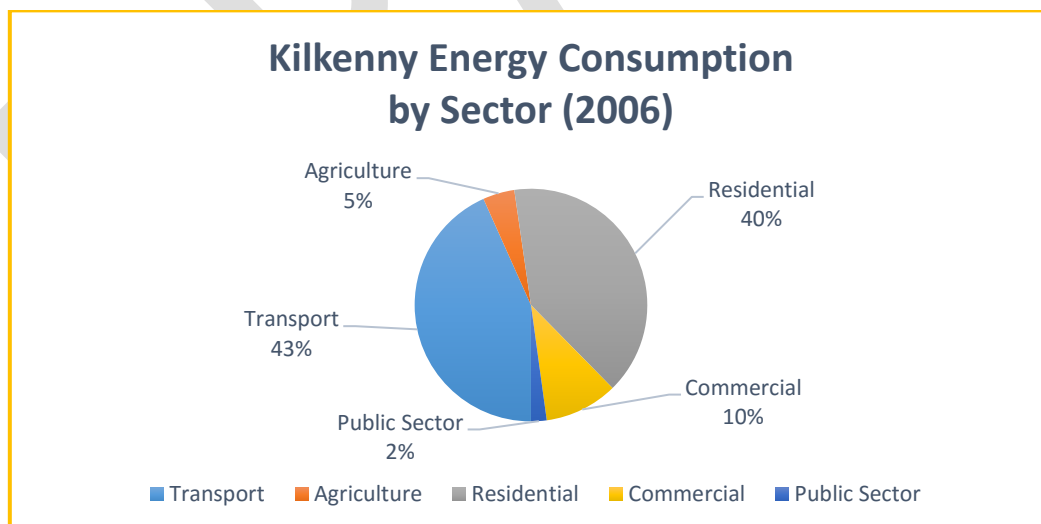


Figure 4.1.3: Kilkenny Total Energy Consumption by Sector 2006

However, in terms of CO₂ emissions and the sectors included in this SEAP, Residential has the highest proportion of emissions, amounting to 40% of the total CO₂ emitted per annum, as

illustrated in Figure 4.1.4. This is followed by the Transport Sector at 35%, the Commercial Sector at 17%, the Agriculture Sector at 6% and finally the Public Sector at 2%.

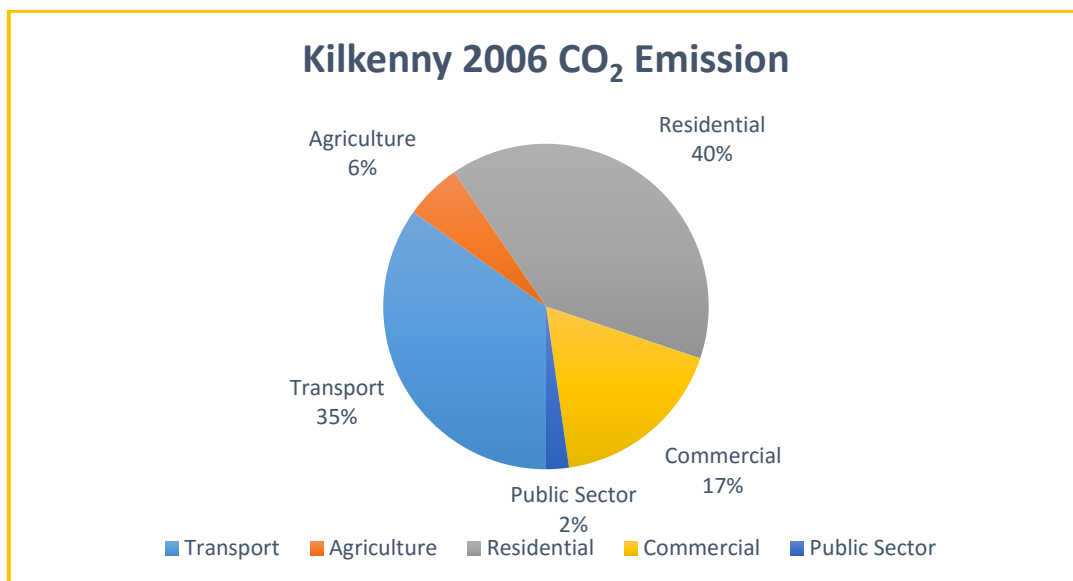


Figure 4.1.4: Kilkenny Total Energy CO₂ Emissions by Sector 2006

Table 4.1.1 below details the specific figures used to calculate the charts in Figures 4.1.3 and 4.1.4. These charts and tables represent the baseline figures for 2006, upon which the reduction targets for each sector are based.

KILKENNY ENERGY CONSUMPTION AND EMISSION BY SECTOR				
SECTOR	ENERGY (GWH)	ENERGY (%)	CO₂ (KTONNE)	CO₂ (%)
<i>Transport</i>	985.78	43%	197.08	35%
<i>Agriculture</i>	100.05	4%	31.85	6%
<i>Residential</i>	909.04	40%	224.59	40%
<i>Commercial</i>	232.11	10%	99.40	18%
<i>Public Sector</i>	49.37	2%	12.81	2%

Table 4.1.1: Kilkenny Total Energy Consumption and CO₂ Emissions by Sector (2006)

The target for the Covenant of Mayors initiative is a minimum of 20% reduction in CO₂ emissions by 2020. Looking at each of the above sectors and their baseline energy consumption and subsequent CO₂ emissions, the specific targets for each sector can be easily calculated. These are detailed below in Table 4.1.2.

KILKENNY ENERGY AND CO ₂ REDUCTION TARGETS BY SECTOR				
SECTOR	2006 CO ₂ EMISSIONS (KTONNES)	2020 CO ₂ EMISSIONS (KTONNES)	SAVINGS (KTONNES)	CO ₂ (%)
<i>Transport</i>	197.08	157.66	39.42	35%
<i>Agriculture</i>	31.85*	25.48	6.37	6%
<i>Residential</i>	224.59	179.67	44.92	40%
<i>Commercial</i>	99.40	79.52	19.88	18%
<i>Public Sector</i>	12.81	10.25	2.56	2%

*Energy consumption data only was used to calculate CO₂ emission for the Agriculture Sector

Table 4.1.2 Kilkenny Energy and CO₂ Reduction Targets by Sector

Using energy consumption figures for Kilkenny in 2014, the CO₂ emissions were calculated and a glidepath illustrating the progress being made by County Kilkenny since 2006, towards its' 2020 targets, has been developed. See Figure 4.1.5 below.

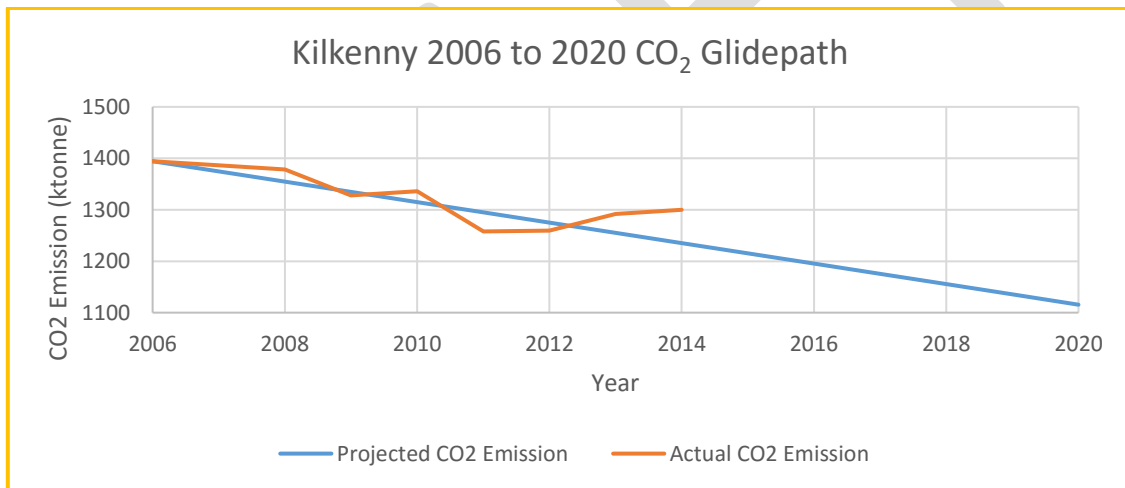


Figure 4.1.5 Kilkenny CO₂ Glidepath (2006 – 2020)

In order to meet the 2020 target (20% energy reduction on 2006 figures), Kilkenny must reduce its annual CO₂ emissions by 279 kTonnes. Breaking this down by Sector; Transport must reduce its annual CO₂ emissions by 39.42 kTonnes, Agriculture by 6.37 kTonnes, Residential by 44.92 kTonnes, Commercial by 19.88 kTonnes and finally the Public Sector by 2.56 kTonnes.

4.2 Public Sector - Total Primary Consumption and CO₂ Emissions

Since 1st January 2011 public sector bodies are required to report annually on their energy usage and actions taken to reduce consumption – in accordance with S.I. 426 of 2014 (and previously with S.I. 542 of 2009). The 2014 regulations transpose the Energy Efficiency Directive (Directive 2012/27/EU) into Irish Law. All monitoring & reporting on the Public Sector’s energy consumption and CO₂ emissions will now be reported through the SEAI’s online monitoring and reporting tool (M&R).

4.3 Residential Sector - Total Energy Consumption and CO₂ Emissions

The Building Energy Rating, or BER, is an energy label with an accompanying advisory report for homes. The rating is a simple A to G scale. A-rated homes are the most energy efficient and will tend to have the lowest energy demand. The energy performance is expressed as: (a) primary energy use per unit floor area per year (kWh/m² /yr) represented on an A to G scale; and (b) Associated Carbon Dioxide (CO₂) emissions in kgCO₂/m² /yr.

Figure 4.3.1 highlights the BER ratings taken for dwellings in County Kilkenny, as provided by the SEAI. The number of BERs completed is 10,451, which is a good sample representation as there was a total of 33,831 households recorded in Co. Kilkenny in the 2011 census.

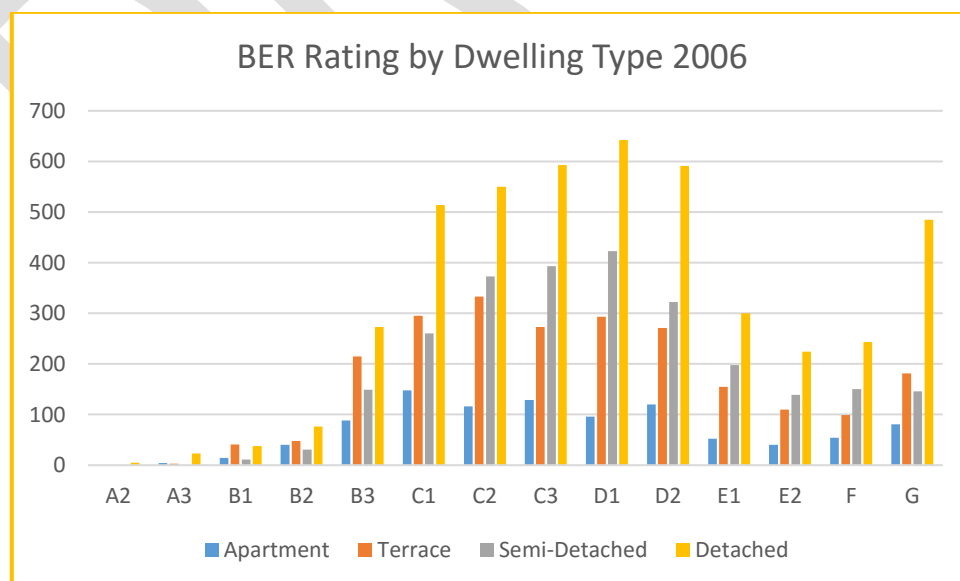


Figure 4.3.1: BER rating by dwelling-type for all dwellings in the County with a BER rating, 2006

4.4 Transport

The government launched the Electric Transport Programme in 2008 to help Ireland meet its EU targets on carbon emissions. The purpose of the Programme is to promote and facilitate a shift to electric powered vehicles with the target set as 10% of the National Road Fleet to be electrically powered by 2020. Kilkenny County Council will promote and support the appropriate infrastructure (for the Public, Private and Domestic Sectors) around the County and implement a fleet management system internally to ensure fuel efficiency is being achieved.

In addition to this, Kilkenny County Council has developed a Mobility Management Plan, which is designed to improve accessibility to the city and environs and improve safety. The Plan will facilitate greater use of bicycles and walking as a means of transport for the public, which will in turn reduce congestion and vehicle related emissions.

Calculation of Kilkenny's primary energy consumption and CO₂ emissions is based on the average percentage of vehicles of different categories in Kilkenny and the State, obtained from the CSO Census 2006.

5.0 Sector Goals 2016 - 2020

5.1 Procurement

- Green Tenders – An Action Plan on Green Public Procurement identified eight priority sectors for GPP implementation in Ireland, and adopts a target for 50% of procurement in these sectors (both by number of contracts and by value) to include at least core GPP criteria. Kilkenny County Council aims to meet its needs for goods, services, works and utilities by choosing solutions that have a reduced environmental impact through the life cycle.
- Kilkenny County Council will implement National Green Procurement policies, including S.I. 151 of 2011
- Kilkenny County Council will consider Green Procurement Best Practice in the upcoming revision of the Council's own procurement policy
- Kilkenny County Council will promote best practice in Green Procurement throughout County Kilkenny.

- The County Kilkenny Corporate Procurement Plan 2016-2018 also contains specific aims and goals in relation to Green Procurement.
- The Plan encourages green procurement through the use of ‘lifetime costs’ in MEAT tender award

5.2 IT Facilities

IT facilities account for a significant proportion of the Local Authority’s energy consumption and CO₂ emissions.

- Kilkenny County will remove inefficient server equipment and UPS systems from County Hall and install new energy efficient systems with self-contained cooling units. A heat recovery system will be implemented, utilising the heat from servers and supplying adjoining corridors.
- Similar projects can be utilised throughout all public buildings, depending on resources, following a detailed analysis on the buildings energy consumption.

5.3 Public Lighting

Kilkenny County Council plans to improve the efficiency of public lighting through the following means:

- Combing all public lighting GMPRN’s and MPRN’s into a master list
- Detailed analysis on the energy consumption of all public lighting
- Convert all public lighting to LED by 2020
- Compile documentation to enable completion of lighting efficiency improvement projects through ESCO / EPC projects



5.4 Residential Housing and Buildings Actions

- Kilkenny County Council will carry out a detailed analysis on the energy consumption of all Local Authority buildings, to identify significant energy users. The Carlow Kilkenny Energy Agency will carry out energy efficiency measures and identify potential renewable opportunities.
- All of County Kilkenny's Libraries will install meters to implement energy monitoring (electrical / non electrical) at all branches. The Council will set energy consumption targets for libraries when > 6 months energy consumption data collected.
- Kilkenny County Council will continue to support and promote the SEAI's Better Energy Homes scheme.
- Kilkenny County Council will continue to promote the SEAI's Better Energy Communities programme, which supports sustainable energy upgrades to existing buildings and facilities in the community sector. In December 2015, Minister for Energy Alex White, TD, announced €20 million in grant offers for local communities under the 2016 Better Energy Communities scheme. The scheme, which is administered by the Sustainable Energy Authority of Ireland (SEAI), has supported 260 community energy efficiency projects over the last four years. As a result over 12,000 homes and community buildings have received energy efficiency upgrades, supporting several hundred jobs each year.
- Minister White stated: "This funding will enable the Better Energy Communities programme to continue to reduce Ireland's carbon emissions, while improving living standards and quality of life for the people and communities it supports (*SEAI, December 2015*).

5.5 Transport

In July of 2013, the Department of Transport / National Transport Authority's plan for restructuring the rural transport programme was launched with the publication of the document "Strengthening the Connections in Rural Ireland". The plan provides a role for Local Authorities in transport needs assessment for their functional areas.

Kilkenny County Council will strive to implement the Mobility Management Plan and will continue to co-operate with the various public and private agencies who are transport

providers within the County, in the provision of and co-ordination of new services and supporting infrastructure. The Council will also continue to support the provision of improved public transport including community based initiatives.

All priority transport infrastructure projects are required to comply with the principles of sustainable development and assessed in accordance with the requirements of Article 6 of the EU Habitats Directive.

6.0 Actions 2016 – 2020

6.1 Introduction

The actions included in this Sustainable Energy Action Plan are designed to address the energy challenge for the entire County of Kilkenny. Having selected the baseline emissions inventory year of 2006, and identifying key energy targets to address the current gaps that the County faces in regards to meeting the 2020 targets, Kilkenny County Council, along with key stakeholders from across the community, have selected the actions within this document, to reduce CO₂ emissions, increase energy consumption savings and in general promote and implement a more energy efficient County.

Please see summary table of all actions submitted by the Kilkenny SEAP Stakeholders on the next pages. Projects completed since the baseline year of 2006 are highlighted in green, those still underway are highlighted in blue and those yet to commence are highlighted in pink.

Table 6.1 Summary of Stakeholder Actions in the Kilkenny SEAP

PUBLIC SECTOR – PROJECTS (2006 – 2020)			
<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Kilkenny County Council County Hall</i>	Upgrade Heating System	Replace pumps with VSD's, zonal control, temperature sensors and BMS in County Hall	Complete
	Upgrade Lighting	Replace T8 with LED and CFL with LED	Complete
	Upgrade Building Fabric	Upgrade insulation with 200mm additional insulation in County Hall	Complete
	Implement a Monitoring and Targeting System	Use existing loggers installed in County Hall and other Public Buildings to monitor energy consumption and energy savings made through the various energy actions and initiatives	Complete
	IT Upgrade	Removal of inefficient server equipment and UPS system Installation of new energy efficient system with self-contained cooling unit – removal of heat from servers and supplying adjoining corridor	In Progress
	IT Energy Saving	Installation of night watchman for all PC's	Complete
	IT Energy Saving	Installation of Virtual Server System	Complete

PUBLIC SECTOR – PROJECTS (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Kilkenny Fire and Rescue HQ</i>	Heating Upgrade	Install direct fired gas instantaneous boiler, digital controls and weather compensator	Complete
	Lighting Upgrade	Replace T8 with LED	Complete
	Heating Upgrade	Replace Roof Domes Install energy efficient drying system with hourly cycles.	Complete
	Upgrade Building Fabric	Replacement of 10 roller shutter doors, with well insulated doors, in the appliance bay. Retrofit of single glazed windows to A rated double glazed windows	Complete
	Increase Renewable Energy	Install 6kW solar Photovoltaic panels	Complete
<i>Dunmore Landfill</i>	Upgrade Heating	Replace inefficient storage heating with Smart Storage Heaters	Complete
	Upgrade Lighting	Replace T8 lighting with LED and occupancy sensors	Complete
<i>Kilkenny County Council</i>	Upgrade Public Lighting	Replace in-efficient street lighting with energy efficient LED lighting scheme	Complete
<i>Kilkenny Ring Rd</i>	Upgrade Public Lighting	Replace existing 250W SON lighting with LED	In Progress
<i>Troyswood Water Treatment Facility</i>	Upgrade Equipment	Replace current pumps new high lift pump that will run duty/standby	Complete
<i>Market Yard - Pumping Station</i>	Upgrade Equipment	Replace current sump and foul pumps with new energy efficient pumps	Complete

PUBLIC SECTOR – PROJECTS (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Kilkenny Machinery Yard</i>	Upgrade Lighting	Install occupancy sensors in the corridors, canteens, toilets and stairways in the machinery yard offices	Complete
	Increase Renewable Energy	Install 6kW solar Photovoltaic panels	Complete
<i>Johnstown Machinery Yard</i>	Upgrade Lighting	Replace T8/T12/Halogen with LED lighting with occupancy sensors.	Complete
	Upgrade Heating	Replace existing electric storage heater with smart electric storage heater with thermostat	Complete
<i>Kilkenny City Library</i>	Upgrade Lighting	Replace current T8 lighting To T5	Complete
<i>Graiguenamanagh Library</i>	Upgrade Lighting	Replace current T8 lighting with LED	Complete
	Upgrade Heating	Replace existing boiler with condensing energy efficient oil boiler Install fuel meter and record weekly fuel consumption	Complete
<i>Loughboy Library</i>	Energy Monitoring	Install fuel meter and record weekly fuel consumption	Complete
<i>Callan Library</i>	Upgrade Lighting	Replace T8 with energy efficient T5	Complete
	Upgrade Lighting	Replace Dimplex storage heating with smart electric heating	Complete
<i>Westcourt Industrial Estate</i>	Upgrade Lighting	Replace current 55W SON with 37W & 67W LED with vehicle activation and remote dimming	Complete
<i>Castlecomer Area Office & Library</i>	Upgrade Lighting	Replacement of existing lighting, 58w T8 with LED suspended lighting system	Complete
	Upgrade Building Fabric	Install 200mm insulation	Complete

PUBLIC SECTOR – PROJECTS (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Thomastown Area Office</i>	Upgrade Building Fabric	Upgrade current 100mm rolled insulation with 200mm rock wool insulation Pump the cavity with insulation	Complete
<i>Callan Fire Station</i>	Upgrade Building Fabric	Install minimum 300mm rock wool insulation and upgrade building draft proofing	Complete
<i>Thomastown Fire Station</i>	Upgrade Building Fabric	Install minimum 300mm rock wool insulation and upgrade building draft proofing	Complete
<i>Freshford Fire Station</i>	Upgrade Building Fabric	Install minimum 300mm rock wool insulation and upgrade building draft proofing	Complete
<i>Urlingford Library</i>	Upgrade Heating System	Replace 20 year old boiler with oil condensing boiler and controls Install fuel meter and record weekly consumption	Complete
	Upgrade Building Fabric	Top up current 100mm insulation in the ceiling with 200mm rolled insulation	Complete
	Upgrade Lighting	Replace T8 lighting 36W and 58W suspended with LED	Complete
<i>Freshford Fire Station</i>	Upgrade Building Fabric	Upgrade attic insulation with minimum 300mm rock wool Upgrade building draught proofing to make it air tight and allow heat recovery ventilation to operate more efficiently	Complete
<i>Kilkenny Fire Station, 2. KK Machinery Yard,</i>	Increase Renewable Energy	11kW Solar photovoltaic system in the machinery yard and 6kW system in Kilkenny Fire Station	Complete
<i>Thomastown Fire Station and Area Office</i>	Upgrade Heating	Installation of energy efficient electric storage heaters	Complete

PUBLIC SECTOR – PROJECTS (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Thomastown Fire Station</i>	Fabric Upgrade	Insulation of the attic and cavities in the Fire Station	Complete
	Improve Energy Efficiency	Installation of energy efficient drying system	Complete
<i>Transport</i>	Implementation of Mobility Management Plan & Improvement to Transport options and services in Kilkenny City and County	Completion of Ring Road Orbital Cycle and Pedestrian Network	Complete
		Provision of Quaylink City Centre Pedestrian Bridge	Complete
		Provision of boardwalk at Ossory Bridge to facilitate cyclists	Complete
		Completion of 80km of cycle lane network throughout the city	Complete
		Participation in Cycle to Work tax incentive scheme for employees	In Progress
		Development of 22km of Greenway along the disused railway track through South Kilkenny, linking Waterford and New Ross	In Progress
		Installation of network of Electrical Vehicle charging points including three in public car parks in Kilkenny City, one in each Callan, Thomastown, Knocktopher and Urlingford	Complete
		Development of walking route along the River Nore in the city	In Progress
<i>Office of Public Works</i>	Energy Monitoring	Introduction of 30km/hr speed limits in inner City Centre area	Complete
		Through the OPW's Optimising Power @ Work campaign a memorandum of understanding will be developed for the participants in scheme in Kilkenny to use this for knowledge, data and skill sharing	In progress

PUBLIC SECTOR – POLICY (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Irish Water</i>	Upgrade Water Plant Energy Efficiency	Kilkenny County Council and Irish Water plant energy efficiency programme 2006 – Present	In Progress
<i>Irish Water</i>	Upgrade Waste-Water treatment plants	Energy upgrades to 12+ water and waste water treatment plants (VSD's, aeration, energy efficient pumps, smart controls)	In Progress
<i>Kilkenny County Council</i>	Implementation of Energy Management System	ISO 50001 will be implemented in County Hall	Planned
	Commitment to Sustainability	Adopt Aalborg Charter - Charter of European Cities and Towns towards Sustainability	Complete
	Improve Building Energy Performance	Include objective in County Development Plan to require provisional BER Certificate as part of any planning application	Complete
	Improve Building Energy Performance	Include objective in County Development Plan to planning applications for large buildings to consider alternative energy systems	Complete
	Increase use of Renewable Energy	Include Renewable Energy Strategy in CDP to encourage renewable energy	Complete
	Increase use of Renewable Energy	Include objectives for passive solar design in CDP	Complete
	Promote Green Travel	Include objectives in County Development Plan for cycling and workplace travel plans to reduce reliance on cars	Complete

PUBLIC SECTOR – POLICY (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Kilkenny County Council</i>	Promote Green Travel	Review of cycle-ways, bus stops and bike spaces to identify where improvements are needed to encourage the use of public transport and cycle-ways instead of cars	In Progress
	Promote and Support Green Travel	Review current Smarter Travel Action Plans for Kilkenny City and Ferrybank with a view to developing an ambitious five year targeted plan that will increase modal share of cycling and walking	Planned
		Work with Kilkenny Leader Partnership (KLP), Transport Infrastructure Ireland(TII) and other stakeholders to assess the feasibility of the provision of an integrated and inter-connected rural and urban public transport service	Planned
	Establish energy performance of town libraries	Complete a Display Energy Certificate for each Library indicating the level of efficiency and the potential room for improvement	In Progress
	Installation of Energy Monitoring System	Establish metering requirements to implement energy monitoring at all branch libraries and implement where necessary Set energy consumption targets for libraries with > 6 months energy consumption data collected.	In Progress
	Adopt Green Procurement Principles	Kilkenny County Council will aim to choose goods, services, works and utilities that have a reduced environmental impact through the life cycle.	In Progress
	Increase training and awareness amongst staff	Carry out facilities staff training and awareness for all public buildings	In Progress

PUBLIC SECTOR – POLICY (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Kilkenny County Council</i>	Increase training and awareness amongst staff	Train staff on Utility websites	In Progress
	Promote grant schemes and funding for community projects	Create awareness amongst Community Groups on sources of funding and grants for energy related projects	In Progress
	Statement of commitment	County Development Plan to include reference to the Covenant of Mayors SEAP	In Progress
	Statement of commitment	LECP to include reference to the Covenant of Mayors SEAP	In Progress
	Support large scale renewable projects in the County	Support large scale renewable energy generation projects to support industries, which will provide cost effective energy	In Progress
	Implementation of Fleet Management System	Establish feasibility of a GPS Fleet Management system to enable generation of Energy Performance Indicators for Kilkenny County Council Vehicles	In Progress
	Identification of Register of Energy Saving Opportunities	Conduct energy audits on all Depots and Yards to identify energy savings	In Progress
	Fuel Efficiency Monitoring	Record odometer readings on vehicles / plant weekly	In Progress
	Implementation of Mobility Management Plan	Roll out of behavioural change interventions programme in schools, which has been designed to address the main barriers to walking and cycling	In Progress

PUBLIC SECTOR – POLICY (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Kilkenny County Council</i>	Reduce Carbon Footprint of Festivals and Large Scale Events	Kilkenny County Council will work with CKEA to develop guidelines for organisers of festivals and other public events to encourage and advise on the reduction of the carbon footprint and energy usage at such events. These guidelines will then be circulated to all applicants to KCC for festival grant assistance	Planned
	Support Donate As You Save Energy (DaysE) Initiative	Support Donate As You Save Energy (DaysE) initiative which is an award winning Kilkenny based social enterprise that uses an innovative approach to fund raising through energy savings. Commercial entities undertake an energy efficiency measure and the verified energy savings are reported by DaysE as energy credits to utility partners who in turn purchase the credits to assist them in meeting their obligated targets. Th funds raised are then used to finance energy upgrades for non-profit and community based organisations.	Planned
<i>Abbey Creative Quarter</i>	Energy Strategy	Development of an energy strategy for the Abbey Creative Quarter as a low carbon site	In Progress

PUBLIC SECTOR – POLICY (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Kilkenny County Council in conjunction with Carlow Kilkenny Energy Agency</i>	Energy Information Dissemination	Dissemination of energy efficiency and renewable energy options in Kilkenny through workshops and presentations	In Progress
<i>Kilkenny Sustainable Energy Forum</i>	Promote and support energy efficiency and renewable energy practises throughout Kilkenny	Investigate the feasibility of re-establishing the Kilkenny Sustainable Energy Forum as a means to promote best practice in energy efficiency and renewable energy in Kilkenny. And showcase exemplar projects in the county Dissemination could be done through case studies, workshops, site visits and live demonstration of technologies	In Progress

COMMUNITY (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>St. Patricks School (Community)</i>	Upgrade Lighting	Replace existing emergency lighting (T-5, 8W x 25 number) and external lighting (70W HPS x 22 number) with 3W and 25W LED	Complete
<i>Graiguenamanagh National School</i>	Upgrade Building	Upgrade Wall, Attic and Floor insulation	In Progress
	Fabric	Replace 2 x single glaze emergency doors	In Progress
<i>Ballyhale School</i>	Upgrade Building Fabric	Upgrade Wall and Attic insulation	In Progress
<i>Kingsriver Community</i>	Upgrade Building Fabric	Install dry-lining in Coach House and 200mm over-layer insulation in Kingsriver House. Replace Single Glazed windows in both houses with Double Glazed.	Complete
	Upgrade Heating	Replace electric showers with hot water buffer tank connected to biomass boiler	Complete
<i>Callan Community Network</i>	Upgrade Heating	Install submetering of zones within each building, wireless transmission signal to remote pumps, time clocks & thermostats	Complete
	Upgrade Heating & Increase Renewable Energy	Install solar thermal to meet hot water demand in summer.	Complete
	Upgrade Building Fabric	Install dry lining on stone walls in gym area	Complete

COMMUNITY (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Camphill Callan</i>	Increase use of Renewable Energy	In conjunction with CRESCo (Callan Renewable Energy Co.), Camphill Callan is proposing to install a small scale Multi Source Converter to combine a range of renewable energy sources, with storage and metering capacity, to provide power to a new housing development	Planned
<i>St. Canices Community Hall</i>	Upgrade Heating	Replace the existing boiler with a high efficiency gas boiler & upgrade zonal controls	Complete
	Upgrade Building Fabric	Dryline the walls and install 300 mm of insulation and replace the back door	Complete
<i>Father McGrath Centre</i>	Upgrade Building Fabric	Dryline the walls and install 300 mm of insulation	Complete
<i>Windgap Parish House</i>	Upgrade Building Fabric	Install internal insulation - 92.5mm Insulated plasterboard to achieve minimum U-Value 0.27W/m ² K	In Progress
	Upgrade Heating	Relpace oil boiler with fully integrated high efficiency condensing boiler with full zone controls on space and water heating	In Progress
<i>Kilkenny College Ltd.</i>	Upgrade Building Fabric	Increase insulation in attic space to 300mm improving the U-value from 0.4W/m ² K to 0.16W/m ² K	In Progress
	Upgrade Lighting	LED and Lighting Control Retrofit in all Boarding Houses - see audit for full schedule	In Progress

COMMUNITY (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Kilkenny College Ltd.</i>	Gas/ Oil Boiler Upgrade	Install a high efficiency condensing boiler and factory insulated cylinder in Celbridge House	In Progress
	Gas/ Oil Boiler Upgrade	Install a high efficiency condensing boiler in Ossory House.	In Progress
	Gas/ Oil Boiler Upgrade	Install a high efficiency condensing boiler in Wolfe House & Install a high efficiency water heater and new buffer tank.	In Progress
<i>SOS Kilkenny</i>	Upgrade Building Fabric	Upgrade insulation of roof and walls	In Progress
	Heating System Upgrade	Replace storage heaters with high efficiency hybrid Air to Water system with gas boiler and wet radiator system	In Progress
<i>Johnswell Hall</i>	Upgrade Building Fabric	Insulate all external walls to meet a minimum u- value of 0.27W/M ² k as per TGD L 2011	In Progress
	Windows/ Doors Upgrade	Replace all external doors to a minimum envelope u-value of 1.4 W/m ² K. Replace all single glazed windows to a minimum glazing envelope u-value of 1.4 W/m ² K	In Progress
<i>Gathabawn Church</i>	Upgrade Building Fabric	Install 300mm roof insulation to achieve u-value better than 0.16W/m ² K	In Progress
	Upgrade Lighting	Replace fluorescent lighting with LED equivalent	In Progress
<i>St. Patricks Church</i>	Upgrade Building Fabric	Install high density insulation into roof area (space restrictions)	Complete

COMMUNITY (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>St. Brendan's Church</i>	Upgrade Building Fabric	Install 300mm of insulation into 313m ² of ceiling	Complete
<i>Galmoy GAA</i>	Upgrade Building Fabric	Fill the cavity wall with bead insulation and install 300mm of insulation in ceiling roof void	Complete
	Upgrade Heating	Install a new condensing boiler with controls	Complete
<i>St. Marys Cathedral</i>	Upgrade Building Fabric	Install 300mm insulation in the ceiling above sacristy area (123m ²)	Complete
<i>O'Loughlin Gaels</i>	Upgrade Building Fabric	Pump the cavity wall with bead insulation; install attic insulation in the handball alley and basketball dressing rooms	Complete
	Upgrade Building Fabric	Replace single glazed with double glazed windows and insulated door	Complete
	Upgrade Heating & Increase Renewable Energy	Replace current system with solar thermal, condensing boiler and controls	Complete
	Upgrade Refrigeration	Fit appropriate timing devices to all bar fridge coolers and beer cool room to reduce running times from 24/7 to 7pm to 12 midnight	Complete
	Upgrade Lighting	Replace existing interior and some exterior night time lighting from 150-400 Watt HPS (54 number) to LED equivalent	Complete
<i>St. Lachtains School</i>	Upgrade Building Fabric	Replace single glazed windows, draught stripping and doors with A rated windows and doors	Complete

COMMUNITY (2006 – 2020)

<i>STAKEHOLDER</i>	<i>GOAL</i>	<i>ACTIONS</i>	<i>STATUS</i>
<i>Tybroughney Pig Farm</i>	Upgrade Equipment	Add inverter to 18.5-kW motor used to mill grain at the farm	Complete
	Upgrade Lighting	Replace 100W incandescent bulbs with T5 and reduce number of fixtures	Complete
	Upgrade Heating	Replace the existing oil boiler used to supply 35-40°C hot water with a heat pump	Complete
<i>Urlingford Childcare Centre</i>	Upgrade Heating	Upgrade control panel with overload relays including temperature / oxygen sensors. Automatic switching.	Complete
<i>Castlecomer Discovery Park</i>	Upgrade Renewable Heating System	Re conditioning of the geothermal heating system	Complete
	Upgrade Building Fabric	Install 75 mm insulation boards between the rafters and insulation between the joist (Southwell Building)	Complete
<i>Galmoy GAA</i>	Upgrade Building Fabric	Replace all windows and doors with A rated uPVC windows	Complete
<i>Camphill Communities</i>	Energy Upgrade Projects	Implementation of various energy initiatives and projects within the Camphill Communities Buildings and Facilities	In Progress
<i>Coolagh Church</i>	Boiler Upgrade	Replacement of inefficient oil boiler with energy efficient condensing boiler.	Complete
<i>Fiddown Union of Parishes</i>	Fabric Upgrades	Attic Insulation and dry lining	Complete
<i>Callan GAA Club</i>	Upgrade Fabric	Internal dry lining, insulation upgrade and window replacement	Complete
	Upgrade Lighting	Replace inefficient mercury and fluorescent lighting with LED	Complete

COMMUNITY (2006 – 2020)			
STAKEHOLDER	GOAL	ACTIONS	STATUS
<i>Owning parish Hall</i>	Upgrade Lighting	Replace inefficient fluorescent lighting with LED	In Progress
	<i>Upgrade Heating and Fabric</i>	Cavity Wall Insulation and boiler replacement	In Progress
Lisdowney Church	Upgrade Fabric	Attic Insulation and window upgrade	In Progress
	Upgrade Lighting	Replace inefficient incandescent lighting with LED	In Progress
<i>Ossory Youth</i>	Building Fabric	Dry lining and installing a sliding door to the interior to prevent heat loss	Complete
<i>Clontubbrid Church</i>	Insulation Upgrade	300mm roof insulation	In Progress
	Lighting Upgrade	Replace Compact Fluorescent tubes, with LED bulbs	In Progress
	Upgrade Heating	Replace existing non condensing boiler with a high efficiency condensing unit with controls	In Progress
<i>Rosedale Residential Home</i>	Upgrade Energy Efficiency	Upgrades to insulation, heating and building fabric	Complete
<i>Owning Community centre</i>	Upgrade Building Fabric	Un-insulated pitch roof insulated with 120mm insulated panel	In Progress
	Upgrade Lighting	Lighting upgrade from fluorescent tubes and incandescent bulbs to LED equivalent	In Progress

COMMUNITY (2006 – 2020)			
STAKEHOLDER	GOAL	ACTIONS	STATUS
<i>Church of the Assumption, Thomastown</i>	Upgrade Heating	Upgrade the existing inefficient boiler to a gas condensing boiler with new controls	In Progress
<i>L'arche</i>	Upgrade Heating and Fabric	Installation of high efficiency condensing boiler, heating controls and fabric upgrades.	Complete
<i>Thomastown Community Hall</i>	Upgrade Building Fabric	Upgrade Attic and Floor insulation	In Progress
		Replace single glaze windows with double glaze	In Progress
<i>LEADER</i>	Development of wood-fuel supply chain	Local forest growers to enter KLP's innovative Vulcan Project	In Progress
	Development of Renewable Energy	Development of biomass and hydropower resources	In Progress
	Development of Renewable Energy	Invest in the training and capital needs of high potential renewable energy entrepreneurs and promoters	In Progress
<i>Black & Whites GAA Club</i>	Energy Efficiency Upgrades	Assess efficiency and carry out upgrades	Planned

HOUSING (2006 – 2020)			
STAKEHOLDER	GOAL	ACTIONS	STATUS
Social Housing	Energy Efficiency Upgrades	Deep retrofit through SEAI BEC programme for social and voluntary homes	Complete
	Energy Efficiency Upgrades	Insulation upgrades through Department of Environment for Kilkenny County Council's social housing stock.	In Progress
	Energy Efficiency Upgrades	Deep retrofit through SEAI BEC programme for social and voluntary homes	Complete
	New Builds	New housing development, 12 homes on Gaol Road Kilkenny, built to BER A2	Complete
	New Builds	New social housing developments to A2 standard	In Progress

COMMERCIAL (2006 – 2020)			
STAKEHOLDER	GOAL	ACTIONS	STATUS
<i>KCLR96FM</i>	Upgrade Lighting	Replace current lighting with LED	Complete
	Upgrade Server Room	Install server fresh air cooling system & remove displaced hot air	Complete
<i>Store All Ltd</i>	Upgrade Lighting	Replace T8 -58W, 5 foot CFL's & 250W High Bay Metal Halides with LED equivalent	Complete
	Improve Fuel Efficiency	Implement GPS tracking with Driver Training	Complete
<i>Pembroke Hotel</i> <i>Newpark Hotel</i> <i>Hibernian Hotel</i>	Increase energy efficiency of building	Energy efficiency upgrade works to 3 hotels in Kilkenny City through the award winning BEC Community Project 2013	Complete
<i>MacDonagh Junction</i>	Upgrade lighting	Lighting Upgrade to more energy efficient LED lighting technology	Complete
<i>Waterford Port</i>	Green Ports	Investigating the feasibility of Green Ports for Waterford Port	In Progress
<i>O'Brien's Cement</i>	Upgrade Energy Efficiency	Cement production plant energy efficiency upgrades	In Progress
<i>Bollards Bar</i>	Upgrade Refrigeration System	Upgrade cooling systems to new energy efficient coolers with variable speed drives and eco-pythons.	In Progress
<i>Fitzgerald Nurseries</i>	Upgrade Heating and Renewable Energy	Installation of Hybrid Heating System (Oil and heat pump technology)	In Progress

COMMERCIAL (2006 – 2020)			
STAKEHOLDER	GOAL	ACTIONS	STATUS
<i>Highway Safety Developments</i>	Upgrade Building Fabric	Supply and fit 0.5 PVC coated cladding and 50mm insulation to existing roof and sides.	Complete
	Upgrade Lighting	Replace existing 58Watt fluorescent lighting in the office and warehouse with LED where possible	Complete
	Replace inefficient old air compressor	The existing air compressor is over 20 years old and has a number of air leaks, it uses over 70,000kWh a year Installation of a variable speed drive air compressor	Complete
	Automated Diesel recording system	Highway safety Developments have 34 vehicles used for transportation Vehicle tracking and monitoring system fitted to all 34 vehicles.	Complete
<i>Callan Co-operative</i>	Inverter Instillation	Large Milling facility which operates over 8 hrs per day for 5 days per week. There is no inverters / variable speed drives. Install Inverters on the milling motors to improve efficiency.	Complete
	Lighting Upgrade	Existing Ligting in the office and warehouse are inefficient, there is a large number of 18Watt fluorescent tubes. Replace existing light fittings with energy efficient replacements - LED where possible. 177 fittings in total.	Complete

AGRICULTURE (2006 – 2020)			
STAKEHOLDER	GOAL	ACTIONS	STATUS
<i>O' Connell Brothers</i>	Upgrade Solar Water & Piping Insulation	Insulation of distribution pipework Installation of solar water panels to pre-heat water, and supplement as required with an electric water heater. Installation of water softener to maintain the electrical efficiency of the element in the boiler.	Complete
<i>Teagasc, Bord Bia & Glanbia Ingredients Ireland</i>	To provide education and awareness for farmers to reduce energy consumption	Carbon Navigator – Energy Efficiency Provision of informative booklets and workshops that will help farmers to reduce energy consumption through these key areas: <ul style="list-style-type: none"> - Best Practice with Plate Heat Exchanger (pre-cooling of milk) - Use of Variable Speed Drive Vacuum Pumps - Use of more energy efficient water heating systems (gas / oil condensing boilers) - Use of solar power for water heating 	In Progress
Teagasc	Upgrade of heating system to more energy efficient technology	Kildalton College Upgrade of heating to more energy efficient system	Complete

AGRICULTURE (2006 – 2020)			
STAKEHOLDER	GOAL	ACTIONS	STATUS
<p><i>Glanbia Ingredients Ireland Sustainable Farm Programme</i></p>	<p>To provide education and awareness for farmers to reduce energy consumption</p>	<p>Open Source On-Farm Sustainable Programme GII have developed the Open Source Sustainability Programme which includes advice and assistance in a variety of areas including:</p> <ul style="list-style-type: none"> - Energy efficiency - Carbon emissions - Water Use and Water Quality Protection <p>GII has put an advisory team in place and is in the process of having all of its milk suppliers audited to the Open Source Code which includes assessing each farms carbon footprint with a view to identifying areas for improved</p> <p>*Only those areas directly relating to the SEAP have been noted here</p>	<p>In Progress</p>
<p><i>Glanbia Ingredients Ireland</i></p>	<p>To meet the requirements of the Carbon Emission Trading Permit and ensure Excellence in Energy Efficiency and Carbon Reduction</p>	<p>Carbon Emission Trading Glanbia Ingredients Ireland (GII) are required to hold a Carbon Emissions Trading Permit and as part of that have developed a comprehensive system for monitoring and recording carbon emissions and identifying initiatives to reduce / minimise where possible</p> <p>GII are committed to looking at Energy Efficiency and Carbon Reduction</p>	<p>In Progress</p>

AGRICULTURE (2006 – 2020)			
STAKEHOLDER	GOAL	ACTIONS	STATUS
<i>Glanbia Ingredients Ireland</i>	Develop Best Practice Techniques for knowledge sharing	Kildalton College GII are collaborating with the college as a means of exploring and demonstrating best practice for knowledge sharing in the agriculture community. As part of this collaboration GII is sponsoring the employment of a full time farm manager to oversee the implementation of the GII On Farm Open Source Quality Assurance and Sustainability programme.	In Progress
<i>Coillte</i>	Implement Efficient Transport Programme	Implementation of an efficient transport programme for wood delivery to increase fuel efficiency and reduce consumption	Complete
<i>Coillte</i>	Increase use of Renewable Energy	Wind Energy Project	In Progress
<i>Tybroughney Pig Farm</i>	Upgrade Equipment	Add inverter to 18.5-kW motor used to mill grain at the farm	Complete
	Upgrade Lighting	Replace 100W incandescent bulbs with T5 and reduce number of fixtures	Complete
	Upgrade Heating	Replace the existing oil boiler used to supply 35-40°C hot water with a heat pump	Complete
<i>O'Shea Farms</i>	Upgrade Lighting	Replace existing 58W fluorescent lighting in the warehouses with LED where possible	Complete
	Install Renewable Energy	Install 250kWp of Solar PV panels on 1,600m ² of rooftop.	Complete

7.0 Energy Monitoring and SEAP Review

Each Covenant of Mayors signatory commits to regular reporting on SEAP progress to the European Commission, for the evaluation, monitoring and verification of their respective Sustainable Energy Action Plans. This is to ensure:

- Full ownership of each SEAP is taken
- Challenges and Obstacles to the completion of an action are identified
- Corrective and Preventative Actions are put in place to address obstacles and challenges
- All necessary resources required for the completion of an action are identified
- All efforts are made to achieve the proposed SEAP

The Covenant of Mayors Offices has developed a formal reporting system so there is consistency amongst the signatories and clear guidance on what must be reported on.

Continuous reviewing of the Action Lists by each sector and within the Steering Committee will help to review progress, maintain focus and prompt support when and where needed.

Using relevant indicators, ongoing energy monitoring and recording against the 2006 baseline figures, will help to track progress being made and verify the energy savings and CO₂ reductions.

8.0 Funding and Training

8.1 EU Funding Programmes

The following funding programmes are an extensive list of EU funded energy sources:

FREE – Future Of Rural Energy In Europe - Rural areas represent 90% of all territory in the EU 27 and 56% of the population. They generate 43% of all economic value and support 55% of all employment. Rural communities are increasing in number, are more diverse and more often they mirror the spread of commerce and services seen in urban communities. Despite this, policy makers responsible for rural areas tend to focus only on agriculture – important, yes, to the economy and identity of rural communities but only a small (and shrinking) part of the story.

Rural communities face considerable challenges. Income per inhabitant ranges from 21% to 62% lower and, although the picture is not uniform across the EU, unemployment tends to be higher too, as does *fuel poverty*. They need help and support therefore, particularly when it comes to energy choices. Support they are not currently receiving from Europe's regulators.

[European Local Energy Assistance \(ELENA\)](#) - ELENA is a European technical assistance facility providing grants to regions and local authorities in order to accelerate their investment programmes in the fields of energy and climate change.

[READ MORE](#)

Duration: Until exhaustion of funds | Amount: €30 Billion

[COHESION FUND](#) - Financial arm of the EU Cohesion Policy, aiming to reduce economic and social disparities amongst Member States of the European Union.

[READ MORE](#)

Duration: 2014-2020 | Amount: EU28 budget: €68.7 Billion

[COUNCIL OF EUROPE DEVELOPMENT BANK](#) - A multilateral development bank focusing on social aspects amongst 43 Member States of the Council of Europe. Its scope of action includes various sectors directly contributing to strengthening social cohesion in Europe.

[READ MORE](#)

Duration: Ongoing | Amount: According to demand

[EUROPEAN AGRICULTURAL FUND FOR RURAL DEVELOPMENT \(EAFRD\)](#) - The European Agricultural Fund for Rural Development (EAFRD) is a funding mechanism under the Common Agricultural Policy (CAP). The rural development regulation aims to set clearly defined common priorities for rural development at the EU level.

[READ MORE](#)

Duration: 2014-2020 | Amount: €84.936 billion

[SUSTAINABLE ENERGY FINANCING FACILITIES \(SEFF\)](#) - Special credit facility supporting smaller companies to realise their investment efforts in sustainable energy.

[READ MORE](#)

Duration: Ongoing

[EUROPEAN INVESTMENT BANK \(EIB\): INTERMEDIATED LOANS](#) - Intermediated loans are provided by the European Investment Bank to local banks with the condition of transferring them to small and medium-sized businesses. These loans can only be provided for certain purposes. Improving environmental sustainability of SMEs is one of these conditions, which includes supporting competitive and secure energy supply.

[READ MORE](#)

Duration: Ongoing

[EUROPEAN REGIONAL DEVELOPMENT FUND \(ERDF\)](#) - The ERDF aims to strengthen economic and social cohesion in the European Union by correcting imbalances between its regions.

[READ MORE](#)

Duration: 2014 – 2020

[EUROPEAN ENERGY EFFICIENCY FUND \(EEEF\)](#) - The European Energy Efficiency Fund (EEEF) is a public-private partnership dedicated to mitigating climate change through energy efficiency measures and the use of renewable energy in the Member States of the European Union.

To reach its final beneficiaries, EEEF can pursue two types of investments; direct investments and investments into financial institutions.

[READ MORE](#)

Amount: Total budget (EU28): €146 million

Horizon 2020 - Horizon 2020 is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. One of the challenges which Horizon 2020 will address is secure, clean and efficient energy.

[READ MORE](#)

Duration: 2014 - 2020 | Amount: Global budget: €70.2 billion, including

INTELLIGENT ENERGY EUROPE III - Intelligent Energy Europe III is a successor of Intelligent Energy Europe II, a programme aimed at helping organisations willing to improve energy sustainability. It supports energy efficiency and renewable energy policies with a view to reaching EU 2020 energy and climate targets.

[READ MORE](#)

Duration: 2014 - 2020

INTERREG (2014 -2020) - The INTERREG EUROPE Programme is an EU programme that helps regions across Europe to work together, sharing their knowledge and experience.

[READ MORE](#)

Duration: 2014 - 2020 | Amount: ERDF €359 million

CONNECTING EUROPE FACILITY (CEF) - A programme for investing in EU infrastructure, energy and telecommunications.

[READ MORE](#)

Duration: 2014-2020 | Amount: €5.85 billion (energy infrastructure)

LIFE+ PROGRAMME - A financing instrument from the European Union for environmental and nature conservation projects in the EU.

[READ MORE](#)

Duration: 2014-2020 | Amount: (EU28): €3.46 billion (proposed)

8.2 National Funding Programmes

8.2.1 Better Energy Communities

The Better Energy Communities (BEC) scheme has to date provided €20 million in grant offers for local communities. The scheme, which is administered by the Sustainable Energy Authority of Ireland (SEAI), has supported 260 community energy efficiency projects over the last four years (2012 - 2015). As a result over 12,000 homes and community buildings have received energy efficiency upgrades, supporting several hundred jobs each year.

8.2.2 Better Energy Warmer Homes

This scheme administered by the Sustainable Energy Authority of Ireland (SEAI), is designed to encourage the elderly and vulnerable, making their homes more comfortable, healthier and more cost effective to run.

This scheme is available to homes which meet the following criteria:

- Owner occupied non-Local Authority homes;
- Constructed before 2006;
- The owner is in receipt of one of the following:
 - Fuel Allowance as part of the National Fuel Scheme;
 - Job Seekers Allowance for over six months and with children under 7 years of age;
 - Family Income Supplement;
 - In receipt of the "One Parent Family Payment";
- Landlords can avail of grants from the Better Energy Homes scheme if they have tenants in, or at risk of, energy poverty.

8.2.3 Better Energy Homes

The Better Energy Homes scheme is administered by the Sustainable Energy Authority of Ireland (SEAI), the programme provides assistance to homeowners to reduce energy use, costs and greenhouse gas and improve the energy efficiency of homes.

The energy efficiency works included with costs are as follows (see Table 8.2.3 below):

Measure	Energy Efficient Works	Increased Grant Value
<i>Insulation</i>	Attic	€300
	Cavity Wall Insulation	€300
	Internal Insulation (Dry Lining) Apartment (any) OR Mid-terrace House	€1,200
	Semi-detached OR End of Terrace	€1,800
	Detached House	€2,400
	External Wall Insulation (“The Wrap”) Apartment (any) OR Mid-terrace House	€2,250
	Semi-detached OR End of Terrace	€3,400
	Detached House	€4,500
	<i>Heating System</i>	Heating Controls with Boiler (Oil or Gas) Upgrade
Heating Controls Upgrade only		€600
Solar Heating		€1,200
<i>Bonus Grant</i>	For 3rd measure	€300
	For 4th measure	€100

Table 8.2.3 Summary of SEAI Better Energy Home Scheme

Note: Information detailed within this table, correct as of 01/05/2016

8.3 Energy Efficient Training Programmes

8.3.1 SME Energy Training

Three half-day workshops over 10-12 weeks. Structured tasks to help the SME achieve savings during the programme. Expert phone and e-mail mentoring assistance: Participants are encouraged to ask questions between workshops to ensure savings are delivered. Tuition in SEAI's online tools and access to best practice sheets tailored to your sector.

http://www.seai.ie/Your_Business/Business_Training/SmallBusiness_Training/

8.3.2 Energy MAP Training

Energy MAP is the Energy Management Action Plan from SEAI. It is a structured programme aimed at companies with an energy spend above €100,000. Where companies adopt a structured approach to energy management, experience shows there is a clear sequence of events that brings the best result. SEAI have formalised these steps into five pillars of energy management.

http://www.seai.ie/Your_Business/Business_Training/EnergyMAP_Training/#sthash.0n4eiV67.dpuf

<http://www.dcenr.gov.ie/news-and-media/en-ie/Pages/PressRelease/Launch-of-%E2%82%AC70-million-Irish-Energy-Efficiency-Fund.aspx#>

http://www.seai.ie/Better_Energy_Financing/Project_Documents/Better-Energy-Financing-Scheme-Executive-Summary.pdf

http://www.seai.ie/Grants/Better_energy_homes/

http://www.seai.ie/Grants/Warmer_Homes_Scheme/

http://www.seai.ie/Grants/Better_Energy_Communities/

8.3.3 Public Sector ISO 50001 Energy Management Support Programme

Public sector organisations are now responding to higher energy saving expectations, and the challenge is to commit to a more strategic approach to energy management. SEAI can help organisations achieve this through a Partnership Programme (for large organisations), and support them in meeting their obligations.

The Partnership Programme is the most comprehensive support package available from SEAI for large organisations, and is offered in return for commitment to energy management from an organisation. The Partnership is between a Public Sector Organisation and SEAI and offers a clear roadmap and defined support actions to help achieve targeted energy savings.

http://www.seai.ie/Your_Business/Public_Sector/Partnerships/

8.3.4 Green Procurement

Public bodies should play an exemplary Green Public Procurement (GPP) role. GPP is a process whereby public and semi-public authorities meet their needs for goods, services, works and utilities by choosing solutions that have a **reduced impact on the environment throughout their life-cycle**, as compared to alternative products/solutions. To this end, they must first ensure their own procurement processes are in compliance with national environmental laws and guidelines. GPP guidelines help public bodies to secure significant economic, energy and environmental benefits in the medium and long term through the procurement of products, services and capital projects.

In addition to fulfilling an exemplary GPP role themselves, public bodies should encourage and, where appropriate, oblige their supply chain partners to do so. In terms of energy efficiency, for example, they can do this by raising awareness of energy efficient procurement among all of their suppliers and by encouraging, facilitating, monitoring and, where appropriate, compelling suppliers to use the energy efficient procurement framework.

Green Tenders adopts the indicative EU political target of 50% of GPP, where GPP means incorporating green criteria into the procurement contract. This target will apply in respect of both the number and the value of public procurement contracts concluded. The focus initially will be on the number, ensuring that as soon as possible, at least half of such contracts will include core GPP criteria – i.e., criteria that are suitable for use by any contracting authority, and address the key environmental impacts.

Green Tenders nominates eight product/service groups as priority groups for GPP. These are:

1. Construction
2. Energy
3. Transport
4. Food and catering services
5. Cleaning products and services
6. Paper
7. Uniforms and other textiles

8. ICT

In line with EU practice, these groups have been chosen on the basis of the following criteria: quantum of public expenditure; scope for environmental improvement; potential impact on suppliers; potential for setting an example to private or corporate consumers; political sensitivity; existence of relevant and easy-to-use criteria; market availability and economic efficiency.

<http://www.etenders.gov.ie/Media/Default/SiteContent/LegislationGuides/13.%20Green%20Tenders%20-%20An%20Action%20Plan%20on%20Green%20Public%20Procurement.pdf>

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