Moving towards sustainable energy communities: An investigation of the Irish Landscape and its transition to an energy conscious society.

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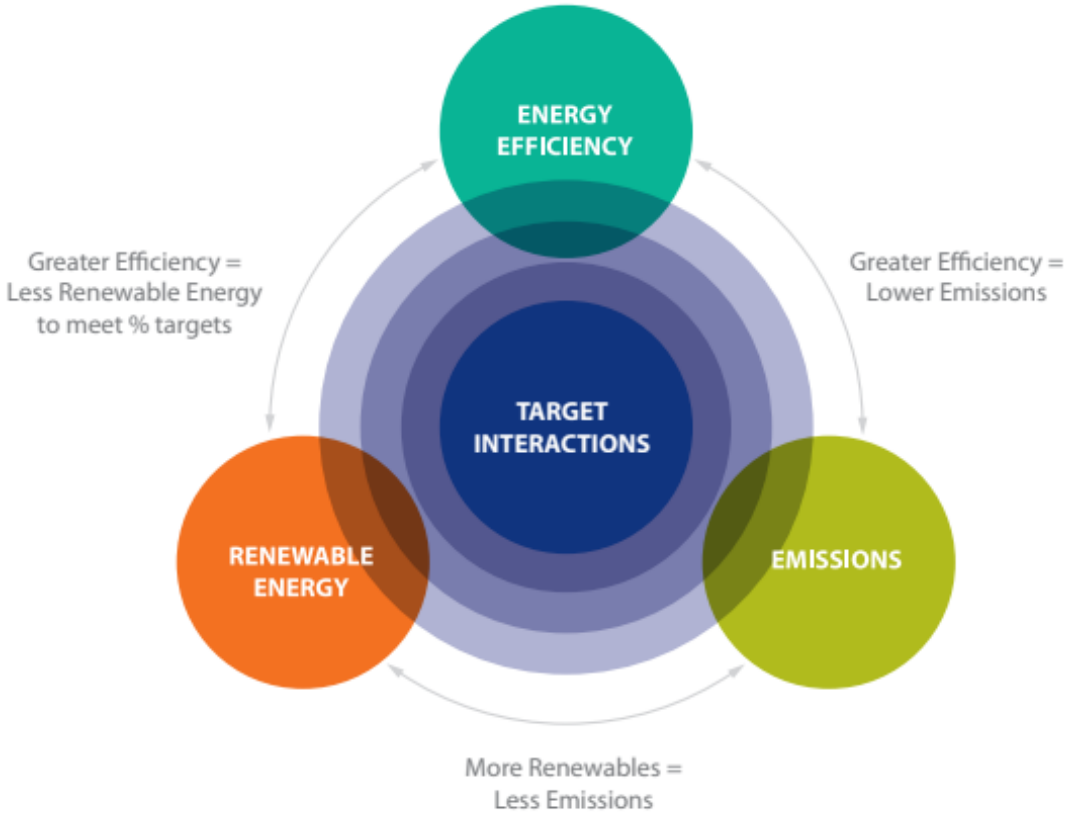
Overview

- Project 2020
- Irelands energy consumption landscape
- Energy values & energy poverty
- Smart technologies
- Energy education
- The future of energy policy for Ireland



Ireland's Project 2020

- To meet the EU energy target reductions of 20%
- To move to renewable energy and meet the 16% target including
  - 40% target for Electricity
  - 12% target for Heating
  - 10% target for Transport
- To meet the Emissions target reduction of 20%

Ireland's Project 2020 Achievements

- 300,000 Homes / 3,500 Business have implemented energy efficiency measures saving E700 million per annum.
- 8.6% target achieved in 2014 for the consumption of renewables.
- 190 Wind farms were installed since 2003.
- 5.2% of 10% of the renewable energy target for transport achieved in 2014.
- In 2015 0.25% of new car sales were electric
- 40,000 Homes and 550 Business use a form of renewable energy.
- 25 – 30K of new dwellings are built to very tight energy regulations
- 75,000 Buildings per year are retrofitted.

Ireland's Energy Consumption Landscape

Ireland's Energy Consumption Landscape

- Population 4.7 Million, capital city Dublin population 1.35 Million
- Highest rate of energy consumption period during the year is between December & January.
- Highest weekly consumption occurred on Sundays.
- Highest daily rates between late afternoon & early evening.
- Consumption variables include:
  - No. Of people living in the home
  - No. Of bedrooms
  - Type of home
  - Economic income into the home
  - Methods for space and water heating
  - Electrical appliances and lighting

Ireland's Energy Consumption Practices

Ireland uses fossil fuels such as oil & gas

Oil is used by 34% of residents

88% of Ireland's energy requirements are imported

The way ahead is to move to renewable technologies; offer grants for heat pumps; and improve home insulation.

Also to challenge behavioural practices:

Unconscious routines in heating practices and to increase the visibility of energy consumption in the home via the use of smart metering

Ireland's Profile

- 98 Males for every 100 Females
- 9% of Females and 7% of Males considered themselves environmentally sensitive and cost conscious of energy consumption
- 12% of Males and 9% of Females are fans of technology for improving energy efficiency

- 25-64 years are the largest age group followed by the over 65 years
- Over 50's are environmentally sensitive
- 18-39 years are technology fans

Ireland's Profile

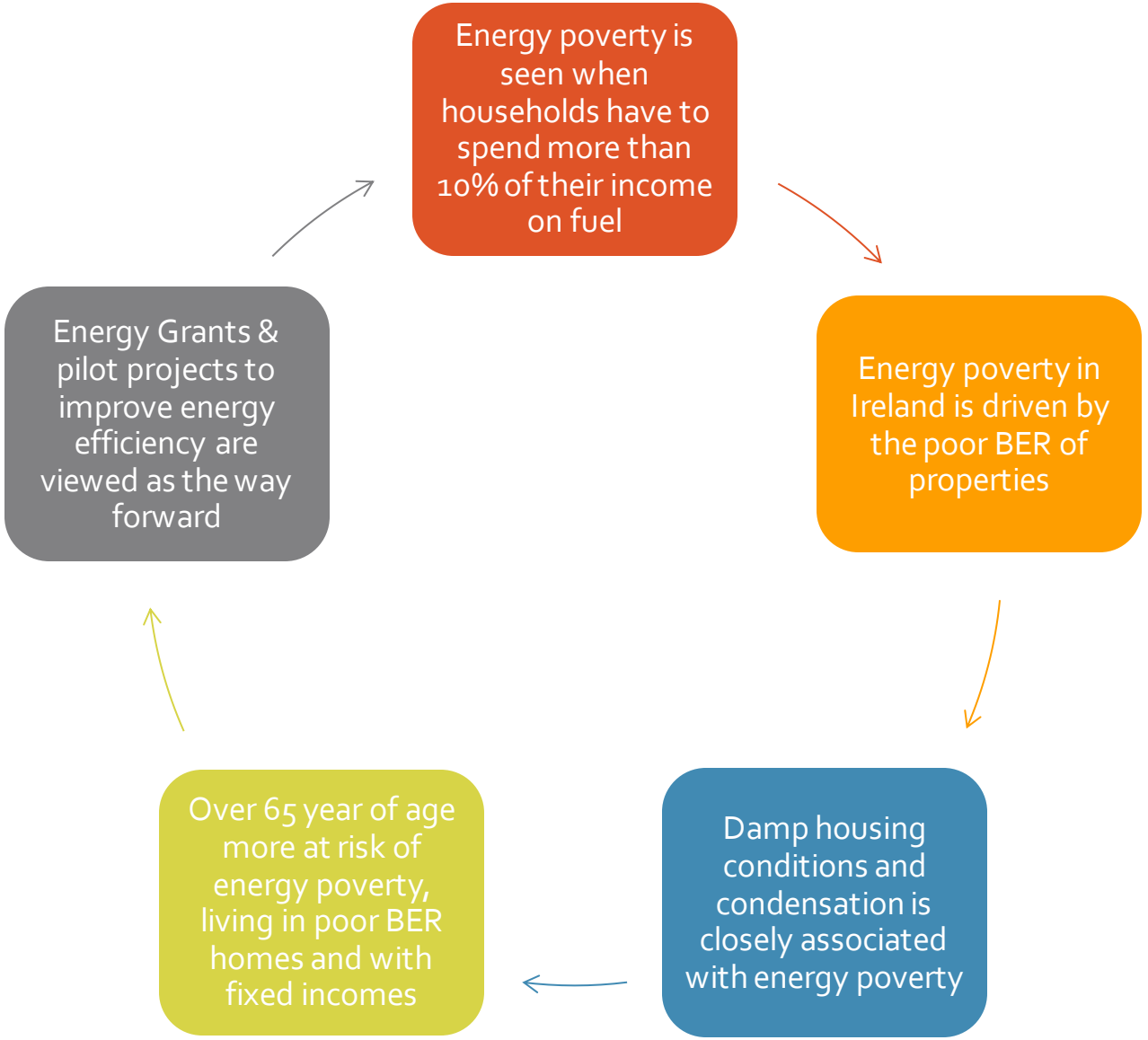
- Education
  - Only 1% have a PhD
  - 40-43% of Males & Females have a third level education
  - Around 30% of both genders are educated to upper secondary level and 12-14% are educated to primary level or below.
- Income
  - Average gross weekly income is around Euro 1,100.
  - Unemployment stands in 2016 at 12% for females and 14% for males.
- Environmental sensitivity and cost consciousness is linked to those earning less than 20K per annum.
- But, low earners are less likely to sacrifice personal comfort, veering towards the use of technology for change.

Energy Values

Energy Values

- 71% of home owner/occupiers in Ireland value energy efficiency
- 61% decision value to invest in energy efficiency is based on improving comfort
- 41% decision value is based on the ease to arrange investment for change

- BER of buildings is highly valued by Irish consumers
- BERs influence 54% of Irish consumers over property purchasing decisions



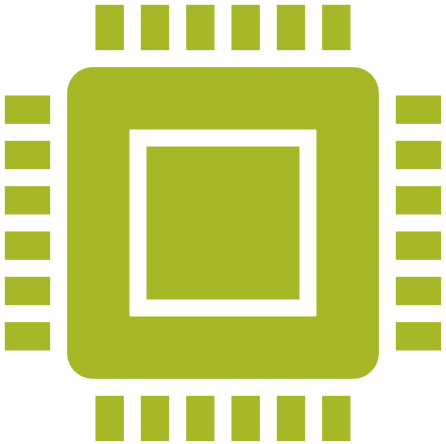
Energy Poverty in Ireland @ 25%

Energy Consumption Options

- Less than 5% of consumers have used grants or subsidies to improve their energy efficiency in the home
- Private landlords are less likely to invest in energy efficiency due to tenants being responsible for bill paying – so minimum standards for energy efficiency in the rental sector is required
- Those at risk of energy poverty should be able to avail of specialized grants and pilot programs to increase the energy efficiency of their homes e.g. attic and cavity wall insulation, draught proofing, energy efficient light bulbs etc.

Smart Technologies

Smart Technologies



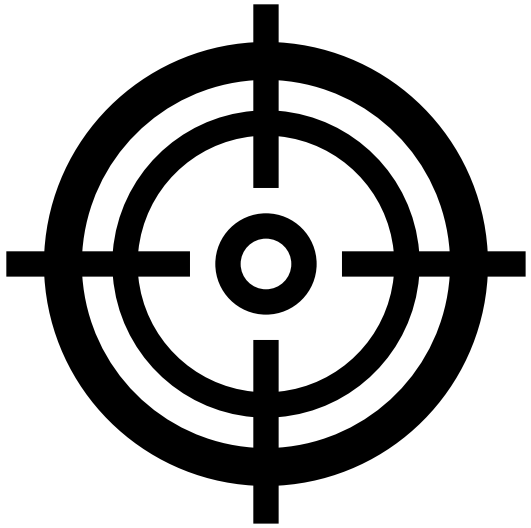
- 10% of Irish homes have installed smart equipment in the home

and another

- 34% are intending to do so

- Primary motivations for using smart technology:
  - 83% state the use of smart technology makes life easier
  - 49% smart technology offers more advantages than disadvantages
  - With 18% using Intelligent Voice Assistants e.g. Siri, Alexia, to control lighting or heating
  - 68% use Apps to assist with improving energy efficiency

Smart Technologies Targets



- To roll-out 2.3 Million electricity smart meters
- To offer free installation of smart thermostats e.g.
  - Hive Active Heating
  - Netatmo
- Prediction that at the end of 2015:

119,705 households will use supports to upgrade their homes to energy efficiency measures.

Energy: Governmental Actors

Sustainable Energy Authority of Ireland (SEAI) is a national authority that leads the way in promoting sustainable energy activities via grants and education.

Department of Communications, Climate Action and Environment, is a government department responsible for disseminating information on climate action, the environment, energy resources etc.

Environmental Protection Agency, is an independent environmental organization to police and protect Ireland's environmental changes.

Commission for Regulation of Utilities (CRU) is an independent energy and water regulator, focused on protecting the public interests in relation to energy.

The Energy Efficiency and Affordability Division, is responsible for implementing policy and reaching the 20% energy improvement target by 2020.

Energy: Citizen Groups & NGO's

Friends of the Earth

The Citizens Assembly

Green Foundations Ireland (GFI)

Good Energies Alliance Ireland (GEAI)

Irish Environmental Network

Stop Climate Chaos

Energy Education

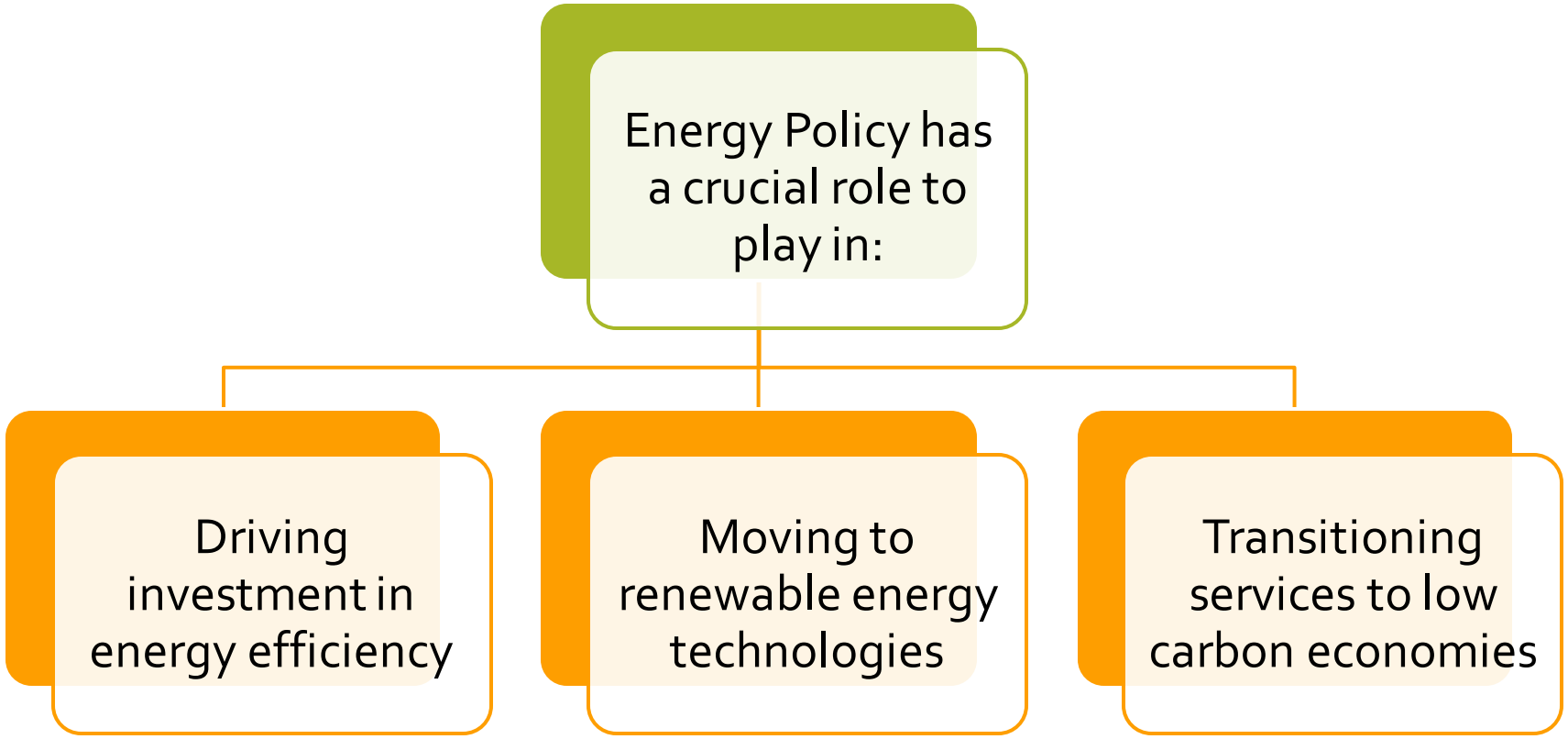
- One approach to reaching the domestic consumer is via open online elearning platforms:
- **ACT4ECO** is a test elearning web platform designed at educating domestic energy consumers on how to make energy efficiency changes within the home.
- Domestic consumers are supported in the implementation of concrete actions to save energy and make their homes more energy efficient.
- By following the learning paths proposed by **ACT4ECO**, each consumer will climb the "ladder of change" from **Motivation** to **Exploration** and finally to **Action.**
- Using e-learning tools or transformative group learning within their local communities, it is both educational and community-building.

Energy Education via ACT4ECO

ACT4ECO guides consumers to take action in five important themes:

- **Change the house**: limiting the carbon footprint of the house by improving its energy performance and investing in highly efficient technology options and appliances.
- **Smart consumers**: familiarizing consumers with options for controlling their energy consumption by correctly using and understanding ICT energy equipment.
- **My energy consumption**: helping consumers draw links between their daily routine activities and their energy consumption, e.g. by adopting small changes in behaviour that can bring significant improvements.
- **No rebound**: avoiding the return to bad energy consumption habits.
- **Make your own energy**: guiding consumers in evaluating if it is worth investing in small-scale energy generation, e.g. by providing information on the necessary technical requirements.

The future of energy policy for Ireland



Moving Forward

Education of the domestic consumer is just one element of change,
but a vital one in changing behaviour.
ACT4ECO is helping us to help our ourselves.

Thank you.
All comments welcome.

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