

Building Sustainable Developments -SEI and EPBD Implementation

J Owen Lewis

Chief Executive, Sustainable Energy Authority of Ireland

The Irish Building Control Institute
Ballyconnell, Co Cavan March 2009



History

1973-1993

IIRS / Eolas

Oil crises, industry EE services, quasi-commercial consultancy & testing, National Energy Conservation Prog, OPET and other EC programmes

1994-2002

Irish Energy
Centre

Established under MOU
DPE & Forbairt (later Enterprise Ireland)
EU-funded, grants, info and promotion,
EE and RE

2002-
present

SEI

1 May 2002 Expanded remit,
statutory basis, increasing
resources

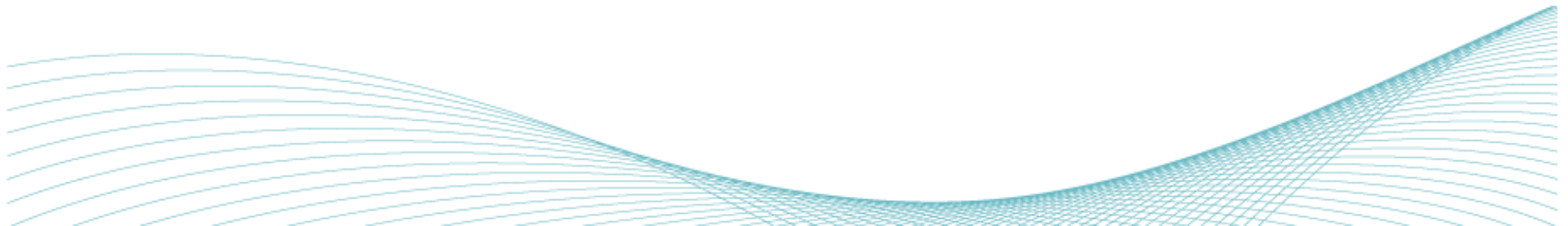
**Sustainable Energy Act of 2002 mandates SEI
*to promote and assist:***

- energy efficiency and renewable sources of energy
- environmentally and economically sustainable production, supply and use of energy
- reduction of greenhouse gas emissions and trans-boundary air pollutants associated with energy
- research, development and demonstration



*To promote and assist the development of
sustainable energy by*

Advising Government
Implementing programmes
Engaging with all sectors of the economy



- Policy
 - NDP
 - Government White Paper
 - Programme for Government
- ↑↑
- EU Directives
 - Renewable Electricity (2001)
 - Energy Performance in Buildings (2003)
 - Emissions Trading (2003)
 - Bio Fuels (2003)
 - CHP (2004)
 - Energy Services (2005)

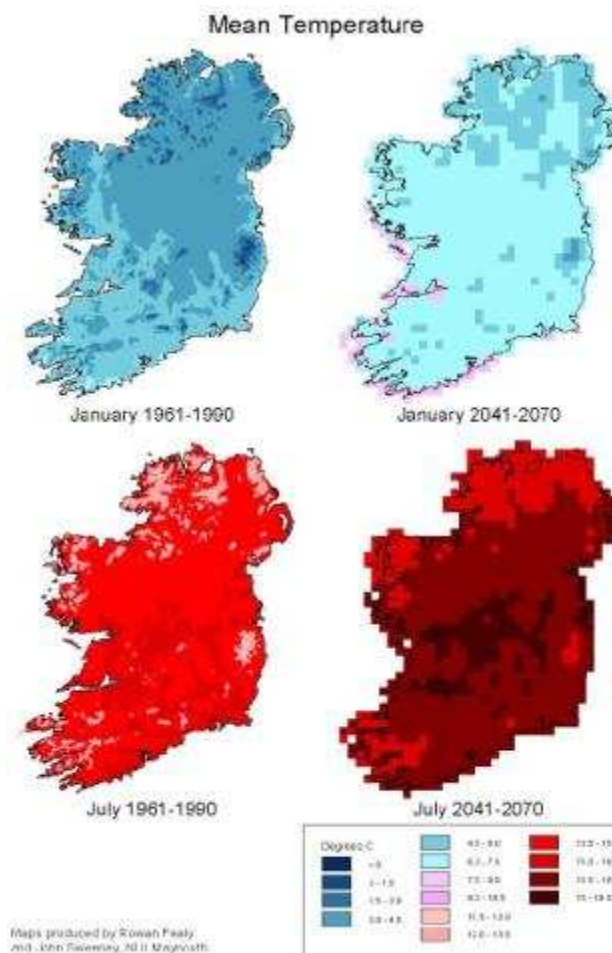


Climate change

- Wetter, warmer autumns and winters
- Hotter, dryer summers
- Regional changes elusive
- But also more unpredictable weather patterns

Mitigation

Adaptation

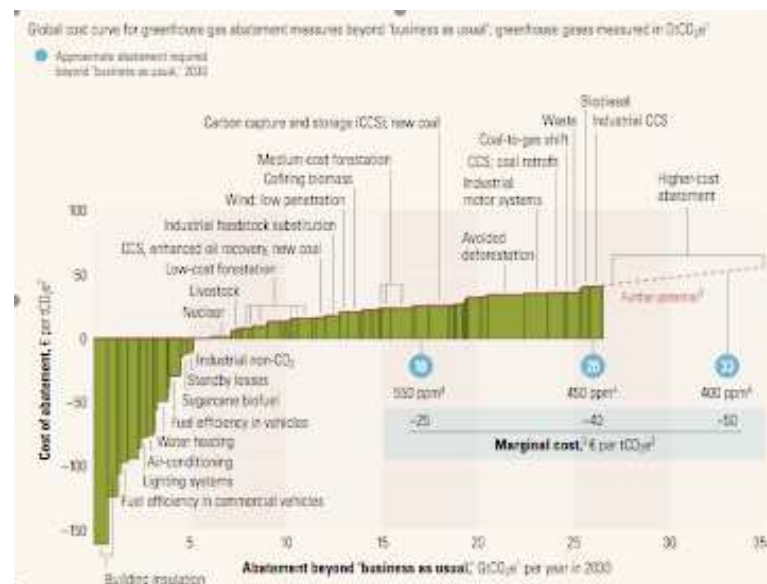


'Climate Change – Scenarios & Impacts for Ireland'

(EPA) NUI Maynooth

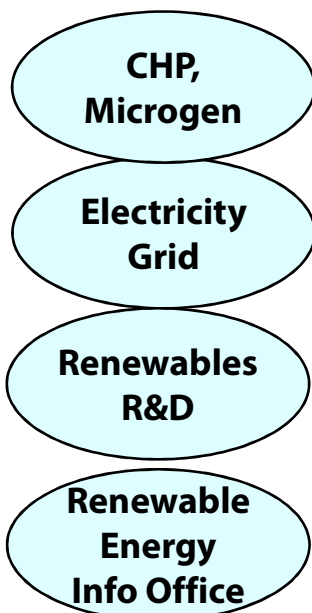
Tactical approach mapping to our core priority areas:

1. Energy efficiency first
2. Renewable energy deployment
3. Integration and innovation

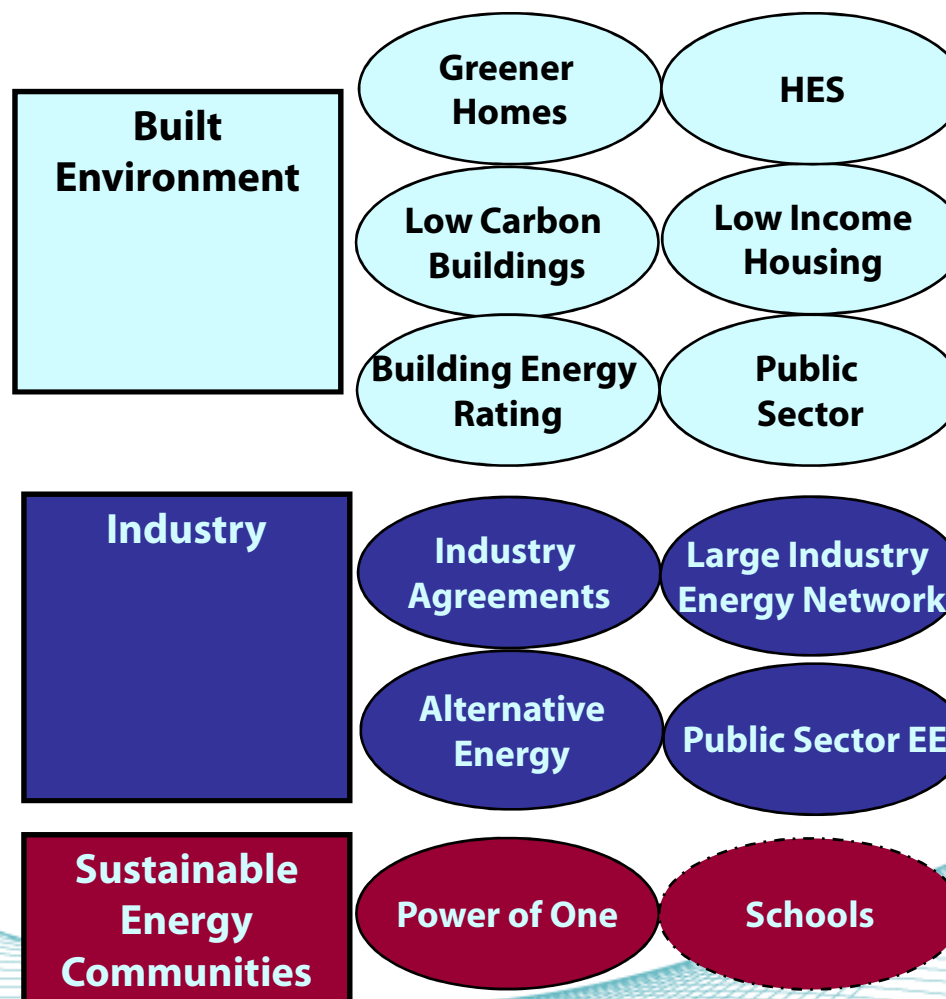


SEI Programmes

Energy Supply Programmes



Energy Demand Programmes

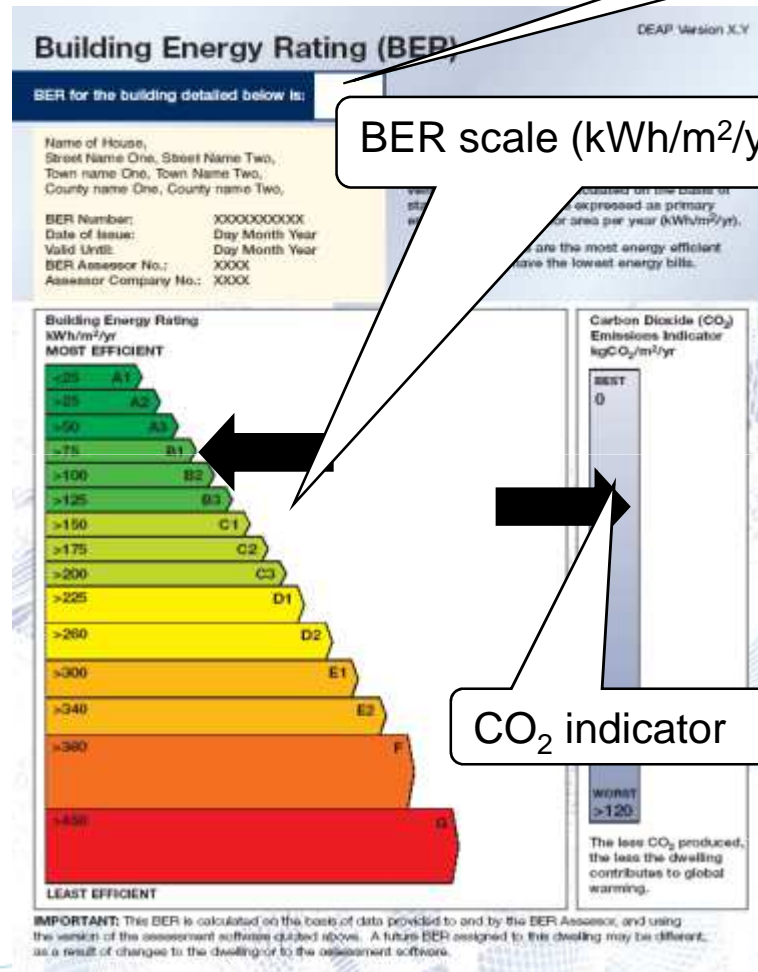


Energy Performance in Buildings Directive

- Seller provides Building Energy Rating Certificate and Advisory Report to prospective buyers or tenants when a home is:
 - Constructed
 - Sold or
 - Rented
- Provisional BER if selling off plans



What is Building Energy Rating?



- Calculated using official method (DEAP or NEAP)
- Linear scales
 - primary energy
 - CO₂
- An “asset” rating on the property, not a “user” or operational rating
- Valid for up to 10 years from date of issue

Version of software used to rate this home.

Actual Building Energy Rating for this home

Home Address

Official BER Number – this is unique to this home

BER Assessor Number – This is the registration number for the assessor who carried out this assessment.

Assessor Company Number – This is the registration number for the assessor company who carried out this assessment.

BER Rating A-G
A = Most Efficient
G = Least Efficient

CO₂ emissions for your home. Less is best and it's an indication of how green your home is.

DEAP Version X,Y

Building Energy Rating (BER)

BER for the building detailed below is **B1**

Name of House, Street Name One, Street Name Two, Town name One, Town Name Two, County name One, County name Two.

BER Number: XXXXXXXXXX
Date of Issue: Day Month Year
Valid Until: Day Month Year
BER Assessor No.: XXXX
Assessor Company No.: XXXX

The Building Energy Rating (BER) is an indication of the energy performance of this dwelling. It covers energy use for space heating, water heating, ventilation and lighting, calculated on the basis of standard occupancy. It is expressed as primary energy use per unit floor area per year (kWh/m²/yr).
A rated properties are the most energy efficient and will tend to have the lowest energy bills.

Building Energy Rating kWh/m²/yr

MOST EFFICIENT

<25	A1
>25	A2
>30	A3
>45	B1
>75	B2
>100	B3
>125	C1
>150	C2
>175	C3
>200	D1
>225	D2
>260	E1
>300	E2
>340	F
>380	G

90 kWh/m²/yr

Carbon Dioxide (CO₂) Emissions Indicator kgCO₂/m²/yr

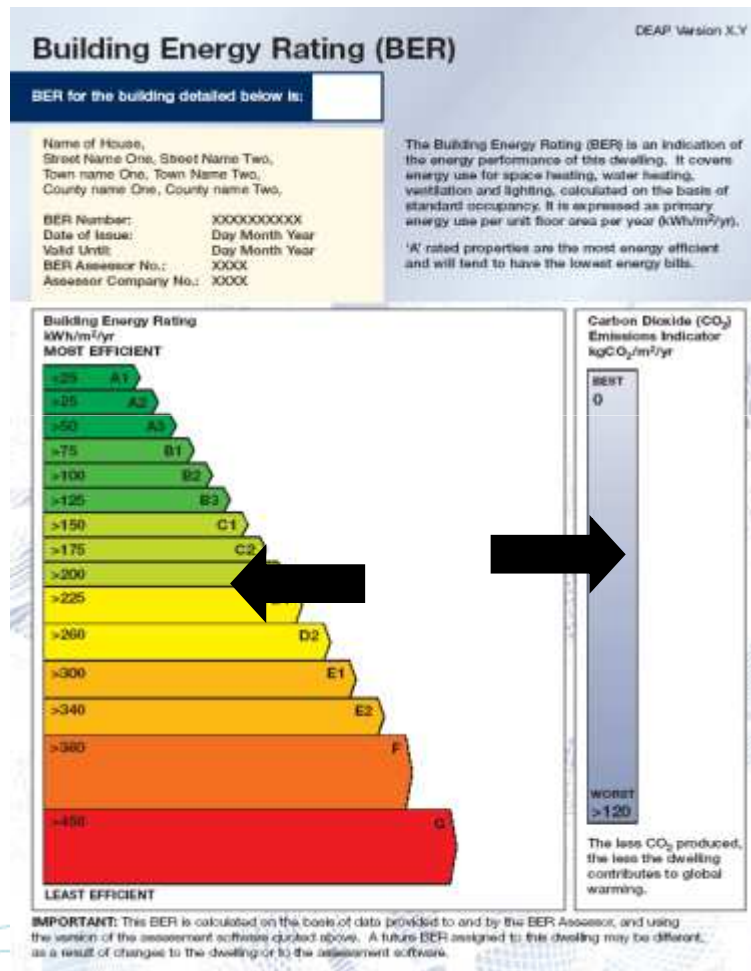
BEST
0

Calculated annual CO₂ emissions
18 kgCO₂/m²/yr

worst
>120

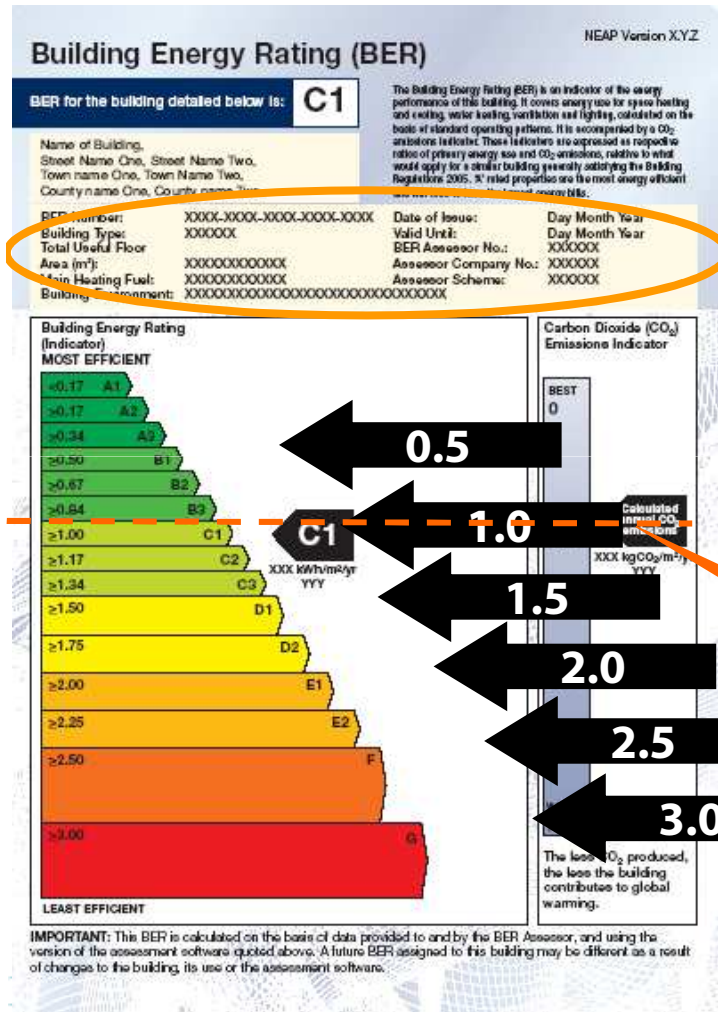
The less CO₂ produced, the less the dwelling contributes to global warming.

IMPORTANT: This BER is calculated on the basis of data provided to and by the BER Assessor, and using the version of the assessment software quoted above. A future BER assigned to this dwelling may be different, as a result of changes to the dwelling or to the assessment software.



- Calculated using DEAP
- Each full band is 75 kWh/m²/y
- At present prices, each full band step equates to between €360 and €560 in annual running costs under standard conditions

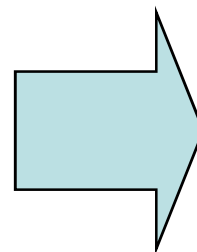
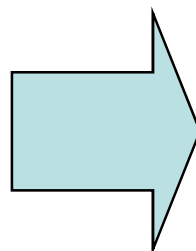
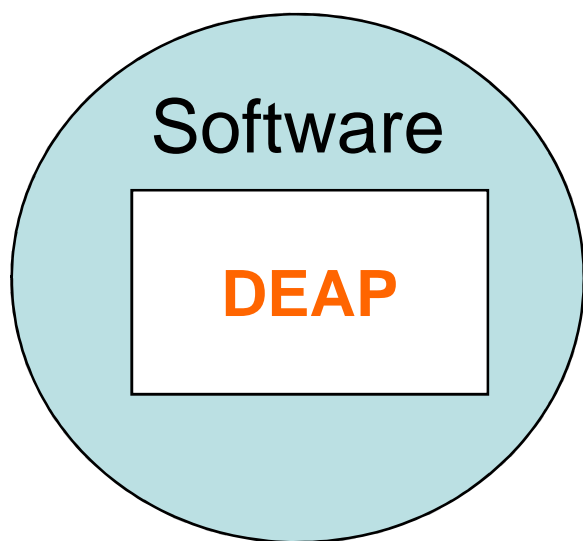
Non-domestic buildings



- Calculated using NEAP framework method
- Aligned with prEN 15217
- Energy scale based on **RATIO** primary energy kWh/m²/y relative to notional building
- CO₂ scale based on **RATIO** CO₂/m²/y relative to notional building
- **Notional building** for BER on B/C boundary has mechanical and natural ventilation (**mixed mode**)

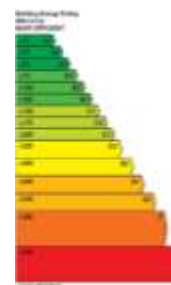
Notional building

Dual role of DEAP



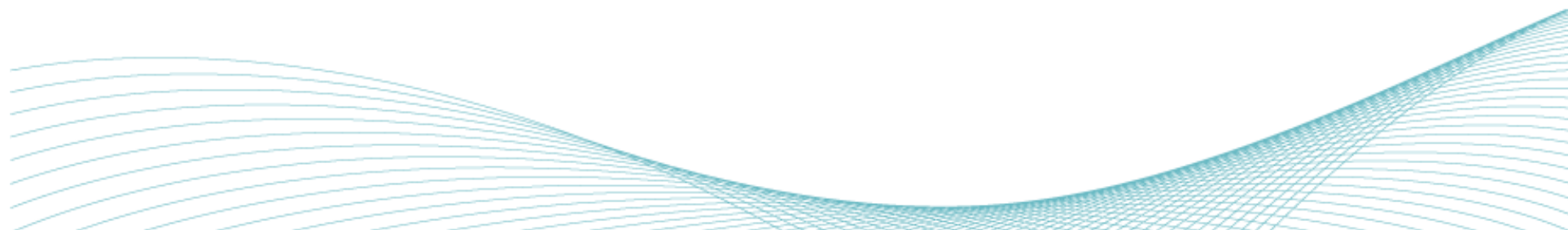
**Part L
compliance
(part)**

BER

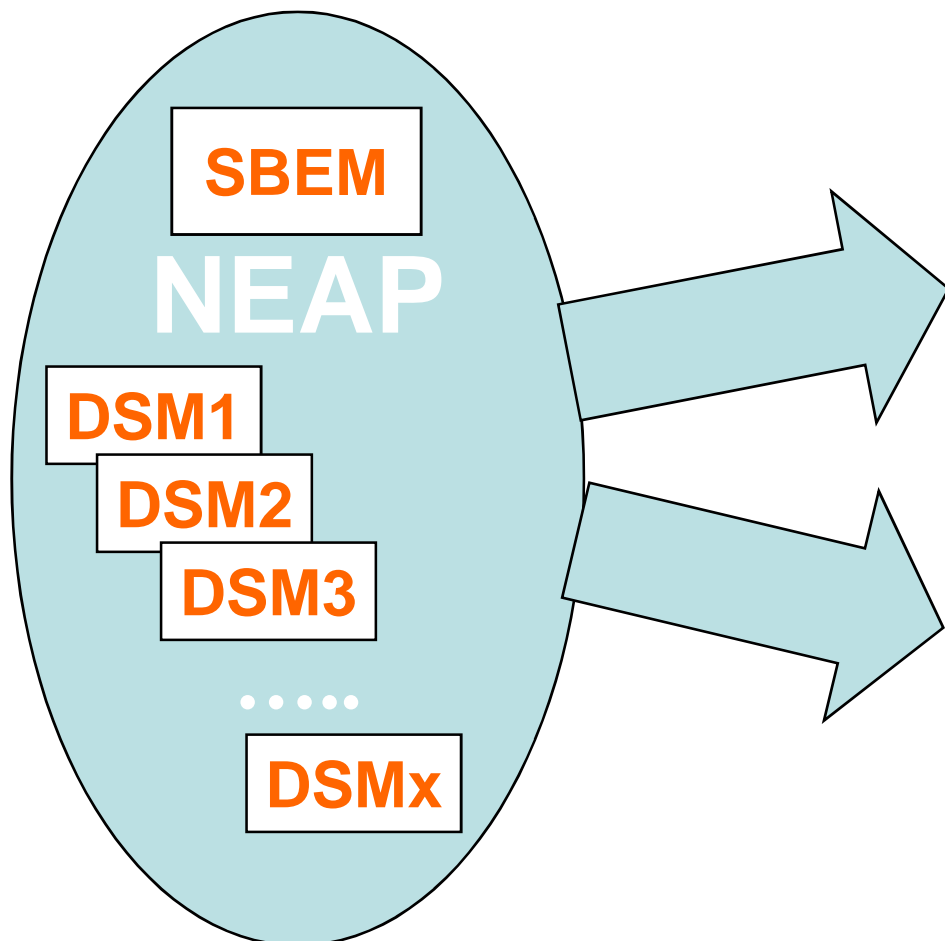


Advisory Report
Options for improvement:

- Insulation
- Glazing
- Heating systems
- Controls
- Lighting
- Boilers
- Renewables



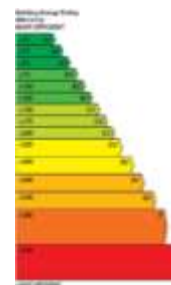
Dual role of NEAP



**Part L
compliance
(part)**



BER



Advisory Report

Options for improvement:

- Insulation
- Glazing
- HVAC
- Controls
- Lighting
- Boilers
- Renewables

BER web pages



Building Energy Rating (BER)

You are here > [Home](#) > [Your Building](#) > [Building Energy Rating](#)

- House of Tomorrow
- Public and Commercial Sector
- Energy Performance of Buildings Directive (EPBD)
- Building Energy Rating
 - Information for BER Assessors
 - Information for Training Providers
 - Register of BER Assessors
 - BER Register
 - DEAP
 - HARP Database
 - BER FAQ
 - Disclaimer
 - Householders
 - Developers
- Low Income Housing

Assessors

Householders

Housing Developers and Designers/Specifiers

Training Providers

Information for non-BER buildings

General Information

- What is Building Energy Rating (BER)?
- When is a BER required?
- Who provides the BER service?
- Legislation & background
- Aspects of the EPBD
- FAQ
- Contact Us

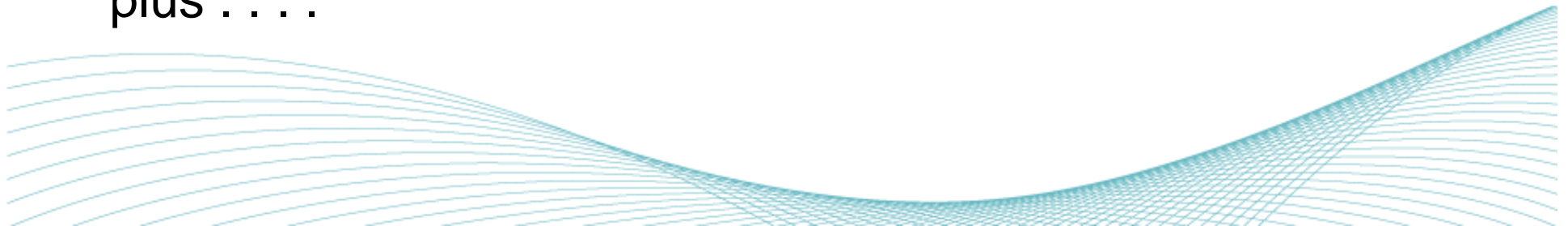
As part of the Energy Performance of Buildings Directive, a Building Energy Rating (BER) certificate, which is effectively an energy label, will be required at the point of sale or rental of a building, or on completion of a new building.

SEI will publish BER certificates on a public BER Register.

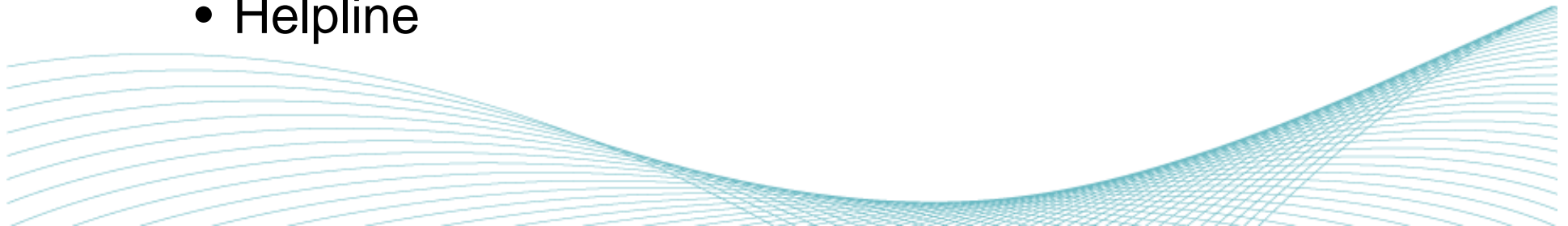
[Click here to enlarge the BER Label](#)



- Makes energy performance visible and informs consumer choice
- BER will stimulate:
 - Innovation and higher standards in new homes
 - Investment in upgrading of existing homes
 - Reduction in energy consumption
- Resulting in a better product for Irish homeowners, plus



- SEI is the designated **Issuing Authority**
- Methodologies, software, competence and conduct
- Administering National BER Scheme:
 - Registering BER Assessors
 - Processing BER Assessments
 - Hosting BER Registers
 - Quality Assurance and Auditing
 - Helpline



How to acquire a BER?

Building Owner consults Register of BER Assessors (www.sei.ie)

Building Owner engages BER assessor to conduct assessment

Assessor completes assessment (Off Plans or Survey)

Assessor submits assessment to SEI

Auto validation of submission by SEI system

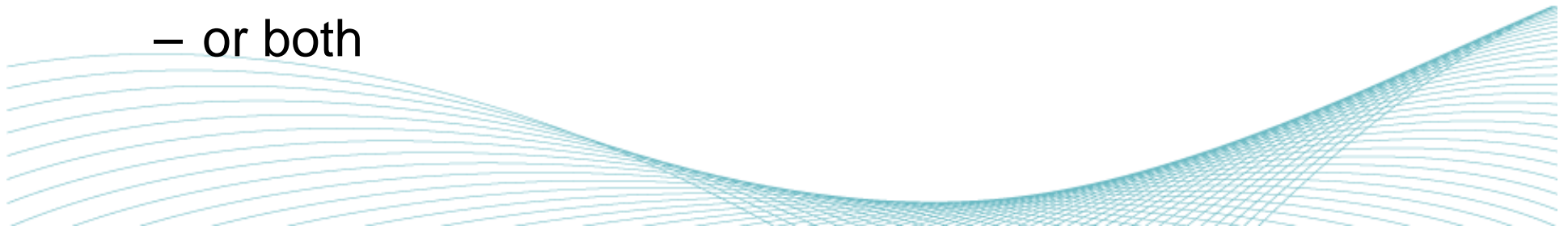
Assessor releases for publication on Public Register

Client receives BER Certificate and Advisory Reports

**SEI
Audits**

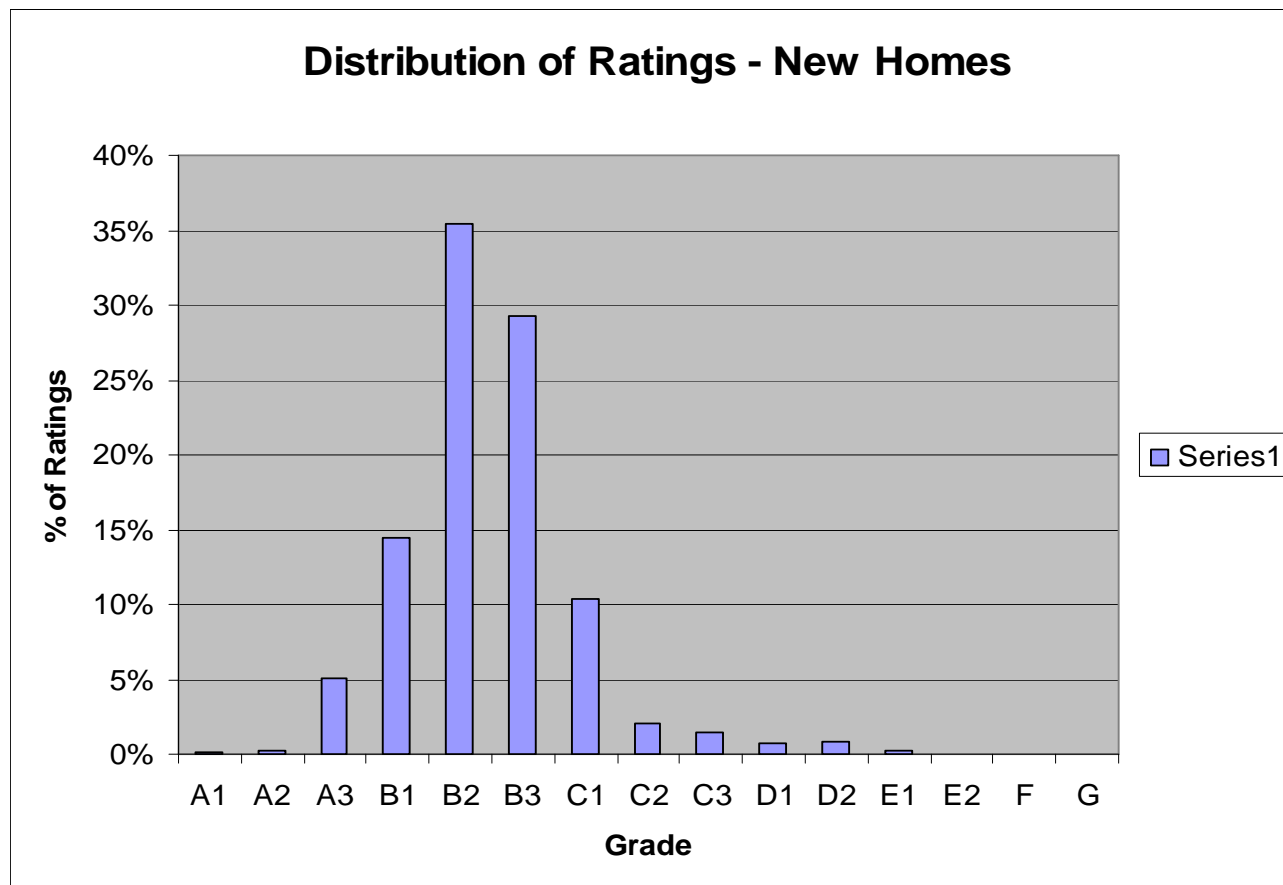


- Building Control Authorities primarily responsible for enforcement
- Penalties apply to a person offering a building for sale or rent or any agent acting on their behalf
- Penalties include:
 - a fine of up to €5,000 or
 - up to three months in prison
 - or both



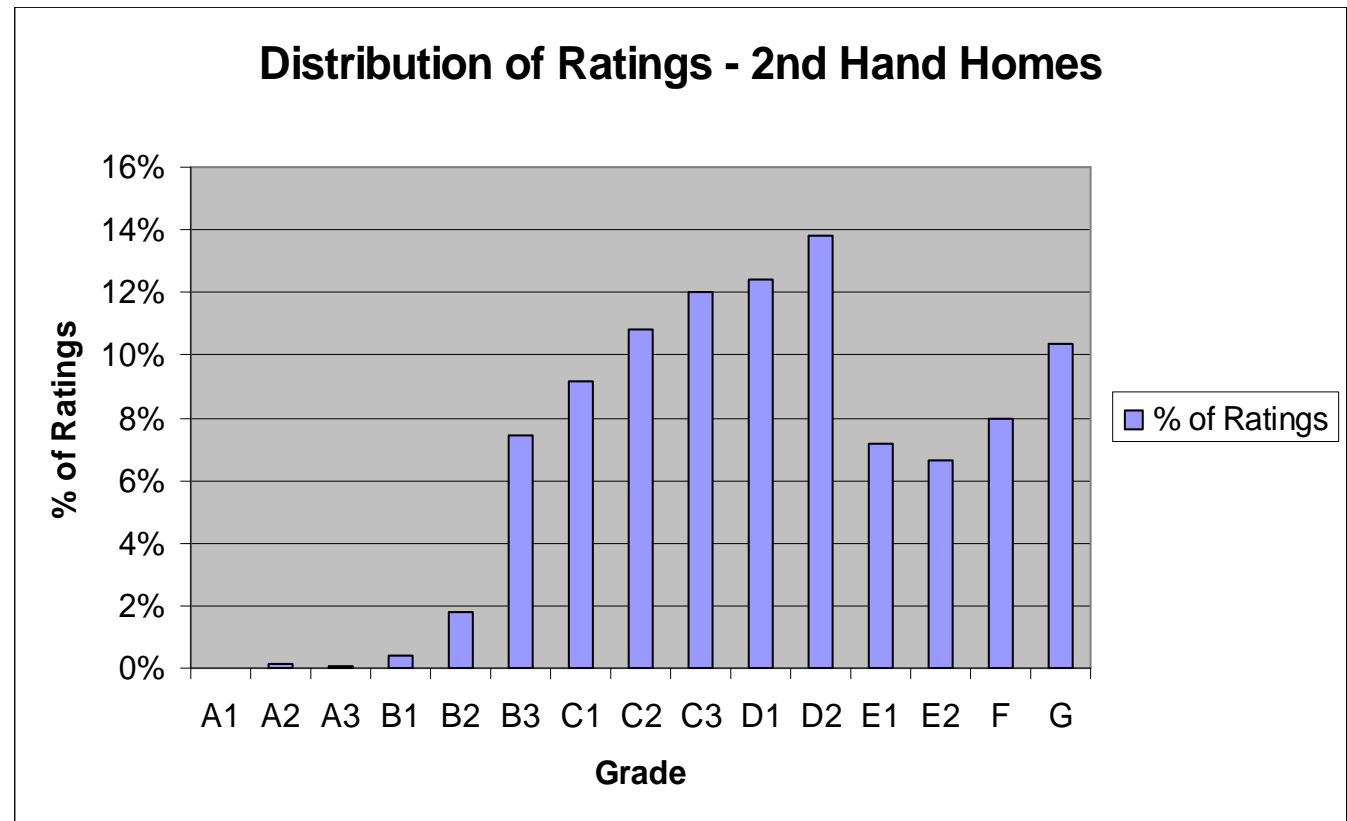
New Dwellings

Grade	% of Ratings	No of Ratings
A1	0%	5
A2	0%	10
A3	5%	237
B1	14%	683
B2	35%	1,676
B3	29%	1,382
C1	10%	489
C2	2%	95
C3	1%	66
D1	1%	35
D2	1%	39
E1	0%	10
E2	0%	2
F	0%	1
G	0%	0
Total		4,730



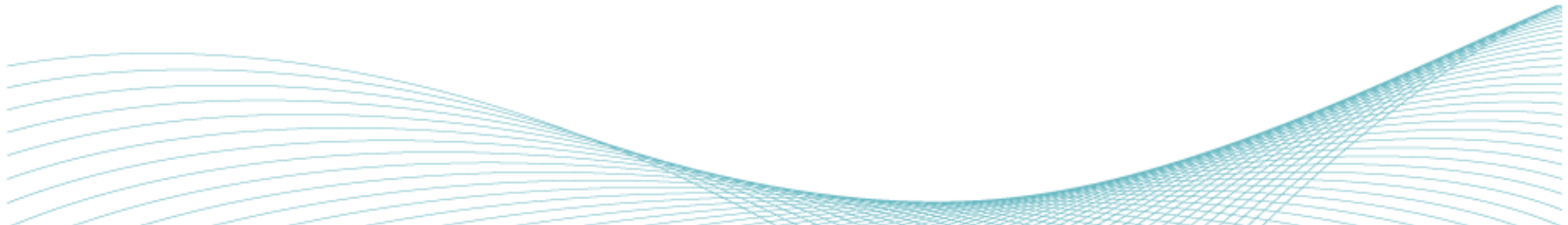
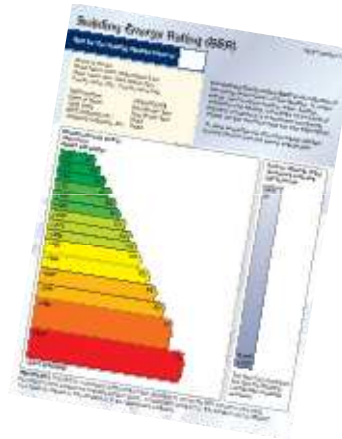
Second Hand Dwellings

Grade	% of Ratings	No of Ratings
A1	0%	0
A2	0%	5
A3	0%	3
B1	0%	18
B2	2%	86
B3	7%	359
C1	9%	442
C2	11%	523
C3	12%	582
D1	12%	600
D2	14%	667
E1	7%	348
E2	7%	320
F	8%	386
G	10%	500
Total		4,839

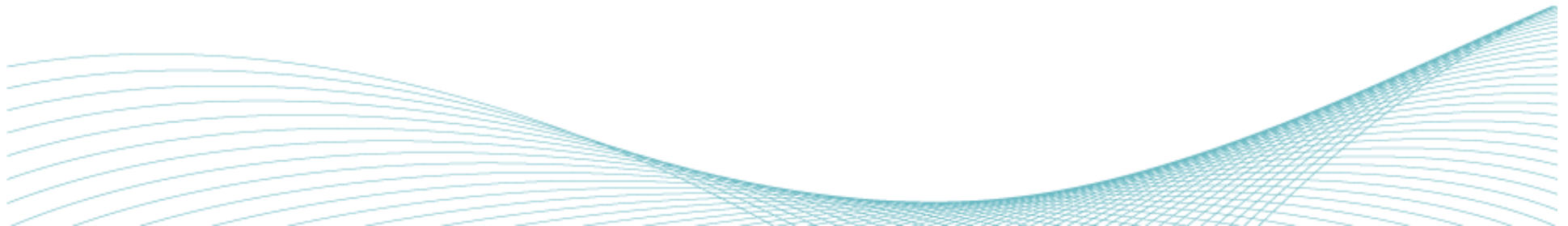


Energy Performance of Buildings Regulations (SI No. 666 of 2006) and subsequent amendments:

- **Building Energy Rating**
- **Alternative Energy Systems assessment**




-
- “**building control authority**” = as defined in Section 3 of the Building Control Act 1990 (No. 3 of 1990)
 - “authorised officer” = authorised officer of a **building control authority** or a person authorised by the issuing authority



- A person who **commissions** the construction of a building of a class referred to inshall, **before such building is occupied for the first time**, secure a BER certificate and advisory report in relation to the building and shall produce a **[printed] copy of such BER certificate and advisory report to the building control authority** in whose functional area the building is situated, on demand being made by that authority
- A person who **offers for sale or letting** ... (a building.) and any agent acting on behalf of such person in connection with such offering, shall produce a **printed copy of the BER certificate and advisory report** in relation to the building **to any person expressing an interest** in purchasing or taking a letting of the building and, on demand, **to the building control authority**

- where the building is being **offered for sale or letting on the basis of the plans and specifications** for its proposed construction, a [printed] copy of the provisional BER certificate based on these plans and specifications in relation to the proposed building, and related advisory report, shall be produced to any of the persons (expressing interest....)
- **on the completion of construction** of the building a [printed] copy of the **BER certificate and of the related advisory report** in relation to the completed building, which take account of any changes, shall be produced to any purchaser or tenant, before completion of such sale or letting and, on demand, **to the building control authority**

- A building control authority or an authorised officer thereof **may demand**, from the owner of a building, or the agent of such owner the production of a **[printed] copy** of the BER certificate
 - Where a person produces a [printed] copy of the BER certificate to an authorised officer of the building control authority but refuses or fails to permit the said officer to read and examine it, that person commits an offence and the authorised officer may demand of the person his or her name and address.
 - **Proceedings** for such an offence **may be brought and prosecuted by the building control authority**
 - **Proceedings for an offence under these Regulations may be brought and prosecuted by the building control authority or the issuing authority**
- 

BER:

- Named as “issuing authority” –extensive functions
- Administration of BER system:
 - Registration of BER assessors
 - Directions to BER assessors
 - Charging of levies
 - Specification and handling of BER data files, certificates etc.
 - Revocation of BER data files or certificates
 - Ownership and maintenance of records, data, documentation
 - Establishment, operation and maintenance of registers
- Evidential value in court proceedings
- Appointment and powers of authorised officers [*vis a vis* BER assessors]


Alternative Energy Systems:

- publish study, approve software...

Alternative energy systems

- The results of the consideration of the feasibility of **alternative energy systems** ... shall be incorporated in a report on the design of the relevant large building and shall be retained by the person who commissioned that building for a period of 5 years from the date of completion of the building and shall be produced, on demand, to the **building control authority**
- Proceedings for an offence under this Part may be brought and prosecuted by the **building control authority**


>> *In the case of dwellings, this feasibility study obligation is effectively superceded by Building Regs Part L 2008, enforcement of which also falls to building control authorities*

A decorative graphic at the bottom of the slide consists of several thin, light blue wavy lines that create a sense of movement and depth, extending across the width of the page.

ENFORCEMENT:

- BER assessors (via Code of Practice *et al*, covering technical obligations, independence, conduct and disciplinary procedures >>> **SEI**)
- Building owners and their agents >>> **BC authorities**

ADMIN, SUPPORT and PROMOTION:

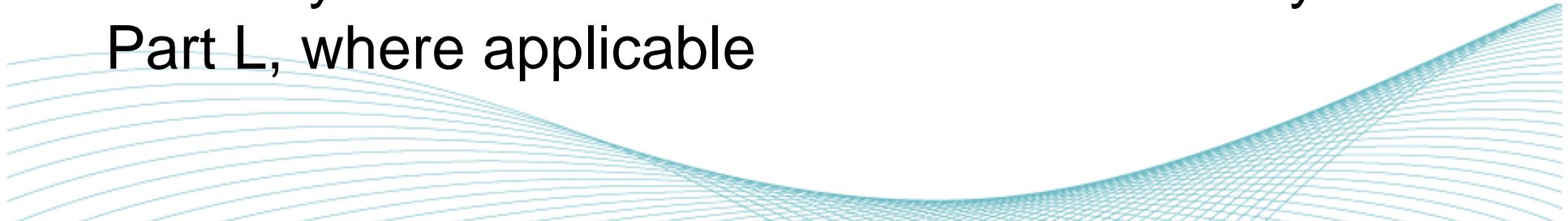
- System rules and Code of Practice
 - Registers of BERs and BER assessors
 - Technical resources – methodologies and software
 - Quality assurance system
 - Helpdesk and website – for BER assessors and general public
 - Publicity
- 

Exemptions

- a national monument for the purposes of the National Monuments Acts 1930 to 2004, including a recorded monument under the provisions of Section 12 of the National Monuments (Amendment) Act 1994 or a registered historic monument under the provisions of the Section 5 of the National Monuments (Amendment) Act 1987
- a protected structure or proposed protected structure within the meaning of the Planning and Development Acts 2000 to 2006
- a building used as a place of worship or for the religious activities of any religion
- a temporary building as defined in Classes 10 to 13 of the Third Schedule to the Building Regulations 1997 (S.I. No 497 of 1997)
- an industrial building not intended for human occupancy over extended periods and where the installed heating capacity does not exceed 10 W/m²
- a non-residential agricultural building where the installed heating capacity does not exceed 10 W/m²
- a stand alone building with a total useful floor area of less than 50m²

NOTE: Holiday homes and short lettings are NOT exempt



- Major industry awareness campaign over four years:
 - 180 events, 19000 attendees
 - Meetings with key industry players
 - Public awareness campaigns in 2008 and 2009
 - Law Society Conveyancing Committee Direction to members
 - DEHLG direction to Building Control Authorities
 - SEI liaison: monthly notification of relevant BC authority with DEAP recorded non-conformity with Part L, where applicable
- 

- No. of registered assessors: 2,296
- No. registered for All Dwellings: 1,852
- No. of certified assessors: 6,021
- No. of active assessors: 1,365
- No. of assessments published: 17,543
- Daily rate of publication: 250

