

# All Party Group on Climate Action

## Establishing the NI Climate Commissioner

**3 November 2023**



# The Climate Change Act (NI) 2022

Section 50 of the Act places a statutory duty on TEO to establish the office of the NI Climate Commissioner.

*S.50 (2) - “The functions of the Commissioner are to oversee and report on the operations of this Act.”*

- TEO must establish the Climate Commissioner by regulations
- The first regulations must be laid before the Assembly in draft within two years of Royal Assent being received - by 6 June 2024

# Potential options

1. Establish a new Arms-Length Body. Three models:
  - *Regulatory*
  - *Champion*
  - *Promote*
2. Establish a regional office of the CCC
3. Do not establish an NI Climate Commissioner's Office

There are pro's and con's to each option



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# Commissions elsewhere

## Climate Commissions with a monitoring role exist in other jurisdictions

- **Swedish Climate Policy Council**
  - Notable in that it assesses if overall policy of government is compatible with climate goals
- **New Zealand's Climate Change Commission**
  - Monitors and reviews progress on Climate Change goals
- **Costa Rica's Climate Change Advisory Council**
  - Advises government on Climate impacts with input from a Citizen's Assembly

## Other Commissions internationally (e.g. South Africa)



# Needs/Gaps

- NI is unique...
  - Politically and geographically, we are unlike anywhere else
  - The precise composition of the NI economy needs to be considered - we have more to do than other places to achieve our Net Zero target
  - There is a need to ensure that Climate advice considers issues as they relate to their impact on NI specifically
- CCC can't (and don't) do it all
  - CCC focus is on technical and scientific advice on GHG reductions – NI Act includes more than this
- Formal (and regular) reporting on implementation of Climate Action Plans and Carbon Budgets
  - A source of independent advice to government and the public on progress and options for mitigation



# Needs/Gaps

- **Raise profile of Climate Change as a mainline policy issue**
  - Increasing visibility and transparency
  - Need to break perception that it is just an issue for DAERA, DfE or DfI to deal with...
- **Improve cohesion**
  - Climate change is naturally cross-cutting, there is a need to consider aggregate impact
- **Behavioural change**
  - Climate change is more than a tech challenge – approx. 60% of reductions need change from individuals/households



# Other considerations

- **Need to avoid duplication with other statutory bodies**
  - Climate Change Committee (CCC) UK
  - Office for Environmental Protection (OEP)
  - Just Transition Commission
- **Ensure complementarity and enable collaboration**
- **Funding and finances required**
  - Will require 'new money'
  - The model and functions will drive costs, along with consideration of scale and scope
  - The Act assumes that the Commissioner's Office will operate until at least 2050...
  - Options for funding to be considered

# Key features

- Independent of Government
- Locally based with resource to consider issues specific to here, including cross-border dimension
- Focal point for public discourse on climate change here
- Ability to call on expert advice (e.g. using formal links to CCC)
- Formal role in monitoring implementation of Act (CAPs, CBs, etc)
- Ability to recommend amendments to the Act (NI)
- Formal relationships to other bodies in this space
- Hub for research and horizon scanning (climate change is not static)
- Public communications responsibility





# Next steps

- Drafting of Regulations
- Official level engagement
  - Strategic Oversight Group
  - CCC – ongoing
  - OEP – November
- Options for Consultation



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# Questions?



Construction & Procurement Delivery  
Seachadadh Foirgníochta agus Soláthair



# **Review of energy efficiency requirements and related areas of Building Regulations**

**Discussion Document and Pre-consultation on next steps.**





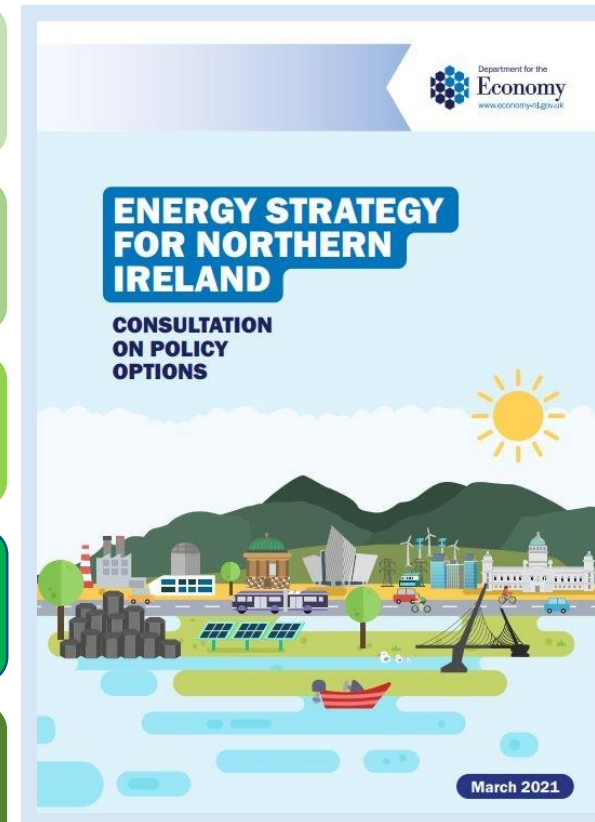
## Consultation details

- The consultation runs from 26 July – 15 November 2023
- Documents are available at [www.finance-ni.gov.uk/consultations](http://www.finance-ni.gov.uk/consultations)
- Respond on Citizen Space via the link
- Over 100 Questions, but come in sections
- Any queries – [info.bru@finance-ni.gov.uk](mailto:info.bru@finance-ni.gov.uk)



## Energy Strategy- The Path to Net Zero

- 1 An interim uplift came into effect June 2022- with new manual 'betterment' of emissions targets for new builds
- 2 Discussion document and pre-consultation on next steps
- 3 Phase 3 uplift, following developments elsewhere in 2021/22 - (originally planned for 2022/23, but now likely to be 2024).
- 4 2026/27 - Phase 4 uplift (timing dependent on other Government developments for 2025 e.g. Future Homes)
- 5 Further review in 2029/30.





## Content

**Section 1-** Introduction.

**Section 2A-** Legislative and policy remit.

**Section 2B-** Background developments elsewhere.

**Section 3 (dwellings) and 4 (other buildings)-** Potential Phase 3 proposals.

**Section 5-** Phase 4 and 5.

**Section 6-** Methodology issues.



## Section 1 - Introduction

Recognise that buildings built today are likely to still be around in the net-zero world required for 2050.

The purpose of our discussion document is to—

- provide an early outline of potential proposals;
- inform and explore the challenges;
- consider any alternative approaches that other regions may provide; and
- encourage industry and enforcement to prepare for change.

We are seeking evidence, data and views on a wide range of items through this consultation exercise.

**A further consultation, with draft Technical Booklets and impact assessments, will be required before any changes are implemented.**



## Legislation and policy remit (Section 2A)

### Carbon commitments and Climate Change Acts (NI and UK)

- Residential, Public Buildings and electricity sectoral reports

### Departmental Roles

- DAERA- Climate change co-ordination, Rural Needs
- DfE- Energy Strategy, Energy Efficiency, Renewables, Electricity Grid etc
- DfC- Housing and Fuel Poverty
- DoF- [Building Regulations](#), Public Procurement, Business Cases, Finance
- DfI- Planning, Transport (including EV chargepoint infrastructure)
- UK gov- EU Liaison (EPBD interpretation including National Calculation Methodolgy development), UK/GB product standards, NI Protocol, most taxation (e.g. VAT on fuels and building work)





## Legislation and policy context

### Building regulations legislation –

- only apply where work is being done; they don't normally require work to be done otherwise, (for example they don't require a home-owner to retrofit their home to bring it up to new standards- this is normally for other policy teams);
- remit set by primary legislation e.g. *“standards which can be reasonably attained”*, with general 'functional' requirements for 'reasonable provision' in secondary legislation and Technical Booklets providing day-today guidance;
- implemented aspects of the Energy Performance of Buildings Directive (EPBD) via Part F (Conservation of fuel and power). Some aspects are still to be provided for (e.g. a primary energy target), but ongoing EPBD compliance is no longer a requirement.



## Developments elsewhere (Section 2B)

Building Regulations are amended *in light of developments in England*.

- Resource efficiency
- Lessons learned
- Part F is reliant on development of the National Calculation Methodology (NCM) and associated software (this is explained in more detail in the consultation)
- Interconnection with assessments for Energy Performance Certificates (EPCs) (software and assessor accreditation etc.)

Recent Phase 1 amendment to Part F Technical Booklets was a temporary deviation; the general intention is to re-align with England and/or take account of developments elsewhere, given the inter-reliance and policy complexities.



## Future uplifts which will be informed by this exercise

Phase 3 is expected to reflect the “FLOS” amendments in England 2021/22.

- |  |                         |
|--|-------------------------|
| • Part F (Conservation of fuel and power)      | Sections 3A, 3B, 4A, 4B |
| • Part K (Ventilation)                         | Sections 3C, 4C         |
| • Overheating in dwellings                     | Section 3D              |
| • Electric Vehicle charge-point infrastructure | Sections 3E, 4D         |

Other issues are explored in Section 5 (future Phases) including—

- Planned and potential developments in other administrations
- Proposed ‘EPBD 4’ developments

Section 6 covers ongoing or concurrent issues, such as embodied carbon assessment of materials and energy assessment methodology issues such as use of local data vs current UK averages etc.



## Part F Phase 3

For Part F, Phase (Phase 3) is expected to:

- lower operational emissions (move away from higher carbon fuels);
- improve energy efficiency of new buildings and update standards where work is carried out to existing buildings;
- make use of the energy assessment methodology, standards and software introduced in 2022 in other administrations.

## Section 3A Phase 3, Part F New Dwellings

For new dwellings, we are also seeking evidence as to whether we should:

- Option 1-** move as quickly as possible to implement uplifts largely in line with those recently put in place in England (possibly with minor variations if we can learn from elsewhere); or
- Option 2-** take additional time to develop proposals with the effect that new build homes would be limited to only very low carbon heating solutions.



## Notional Dwelling

Notional Dwellings, both with improved fabric–

- Option 1- Gas and PV (as England)
- Option 2- Heat pump (as Appendix D of ADL1)

## Challenges with Option 1

- Removal of ‘fuel factor’ relaxations for higher carbon fuels is a significant challenge, particularly for home heating oil- fuel cost impact (ref Annex B of condoc).
- Rural disparity compared to areas with access to gas?
- Low temperature heating requirements- skills and capacity
- SAP 10 overestimates the extent of current local electricity decarbonisation (ref Annex B of condoc).

SPECIFICATION	EXAMPLE OF PART F 2022 COMPLIANT SPEC FOR TYPICAL 104m <sup>2</sup> SEMI-D HOUSE	PROPOSED PART F 2023/24 NOTIONAL DWELLING	
Area of Openings	Same as actual building up to 25% of floor area	Same as actual building up to 25% of floor area	
External Wall	0.22	0.18	
Party Wall	0	0	
Floor	0.15	0.13	
Roof	0.12	0.11	
Opaque Door	1.4	1	
Windows & Glazed Doors	1.4	1.2	
Thermal Mass	Medium	Medium	
Allowance for Thermal Bridging Y-value	0.06	0.05	
Ventilation	Natural with intermittent extract fans	Natural with intermittent extract fans	
Air Permeability	5.0m <sup>3</sup> /(h.m <sup>2</sup> ) @ 50 Pa	5.0m <sup>3</sup> /(h.m <sup>2</sup> ) @ 50 Pa	
Chimneys and open flues	None	None	
Main Heating Fuel	Mains Gas	Option 1: (Mains Gas)	Option 2: (Heat Pump) (1)
Heating System (2)	Boiler & radiators, water pump in heated space	Boiler & radiators, water pump in heated space. Design flow temp = 55°C	Air source heat pump Radiators, water pump in heated space. Design flow temp = 45°C
Boiler / Heat pump efficiency	Combination Boiler, SEDBUK (2009) 89.5%, room -sealed, fanned flue	Combination Boiler, SEDBUK (2009) 89.5%, room -sealed, fanned flue	Space heating efficiency(3) = 295% Water heating efficiency(3) = 195%
Heating System Controls	Time & temperature zone control, delayed stat start, weather compensation	Time & temperature zone control, TRV's, Boiler interlock, ErP Class V (4)	Weather compensation with time & temperature zone control and TRV's (4)
Hot Water System	Instant hot water, heated by combination boiler	Instant hot water, heated by combination boiler	Storage system with back up immersion heating
Hot Water Cylinder	N/A in this example	No	Yes
Waste water heat recovery	None	All showers connected to WWHR including showers over baths. Instantaneous WWHR with 36% recovery efficiency (at any flow rate) and utilisation of 0.98.	None
Water use limited to 125 litres per person per day	No	Yes	
Secondary Space Heating	N/A	N/A	
Lighting	100% Low Energy Light Fittings	Fixed lighting capacity (lm) = 185 x TFA Efficacy of all fixed lighting = 80 lm/W	
Electricity Tariff	Standard	Standard	
PV System	1.51 kWp	Option 1: kWp = 40% of roof plan area/6.5 (3.2kWp in case of 104m <sup>2</sup> 2 storey house)	None



## Issues with Option 2

- Running and capex costs
- Setting an appropriate Notional Dwelling HP specification; (heat pump spec)
- Industry skills and capacity pressures increase (including maintenance)
- Grid issues (vs grid issues with PV under Option 1)
- Unintended outcomes, e.g. will dwellings be viable under the emissions assessment, if new overheating requirements necessitate mechanical cooling in some cases?
- How to assess heat networks
- What alternatives are available, if HPs somehow aren't viable in some situations (maybe with high electricity infrastructure reinforcement costs)
- Closed to hybrid HPs
- SAP 10 overestimates the extent of current local electricity decarbonisation- but the discrepancy is even more relevant under Option 2

Option 2 would be a significant deviation from the efforts to re-align Part F and might end up combined into Phase 4, given these complex policy implications / application issues.



## Proposed new metrics (all options)

- a) Emissions; a TER/DER assessment, (without the need for the current manual alterations for NZEB assessments);
- b) Primary Energy; a TPER/DPER assessment;
- c) Fabric Energy Efficiency (FEES) assessment;
- d) Improved limiting U-values and airtightness standards; and
- e) Improved limiting services efficiencies.

## Alternative metrics discussed

- Delivered energy
- Running cost/EPC banding
- Renewable energy ratio.



## Fuel viability is different under Option 1 vs 2.

- Hybrid boilers/HPs and
- Biofuels are discussed

## Issues common to both Options —

- Limiting fabric standards
- Air tightness
- Block averaging
- Low temperature heating
- Services efficiencies (including water)
- Renewables connections

## Procedural issues—

- As-built information and home user guide
- Geo-located photo evidence
- Incorporation of services guidance into Technical Booklets.

Table 3A.4 Outline viability of fuels for Options 1 and 2 based on SAP 10 Carbon intensity and Primary Energy factors]

VIABILITY OF FUEL SOLUTIONS (see note below)	OPTION 1	OPTION 2
Conventional mains gas	Yes – with PV or other on-site renewable generation to help offset emissions and primary energy performance*	Unlikely to be viable (due to emissions)
Conventional oil	Unlikely to be viable (due to emissions)	Unlikely to be viable (due to emissions)
Conventional LPG	Yes – with PV and further improvements (e.g. additional fabric measures) to help offset emissions performance	Unlikely to be viable (due to emissions)
Liquid bio-fuels (HVO/FAME/B30K etc)	Yes – with PV and further improvements to help offset emissions performance	Unlikely to be viable (due to the very low TPER delivered by the high co-efficient of performance from the ASHP)
Biomass (wood) and biogas (e.g. from anaerobic digestion)	Unlikely to be viable (due to primary energy metric and/or system efficiencies)	Unlikely to be viable (due to primary energy)
Direct electric resistance heating	Unlikely to be viable due to primary energy – possibly viable for occasional small rooms or in extremely low energy demand dwellings with on-site renewables and battery storage	Unlikely to be viable due to primary energy – possibly viable for small rooms in dwellings
Heat pump (electric)	Yes – without any PV	YES – without any PV*
Hybrid heat pump (electric with fossil fuel)	Yes – potentially without any PV, if fossil fuel use is low	Yes – with efficiency measures, PV or other on-site renewable generation to help offset the emissions from limited fossil fuel use
Hybrid heat pump (electric with bio-fuel)	YES – without any PV	Yes – with efficiency measures, PV or other on-site renewable generation to help offset primary energy performance of biofuels
Existing District Heat Network	Yes – a different Notional Dwelling applies in this case and uses the same carbon and PE factors as the actual district heating system	Uncertain - needs further consideration. Policy and software development
New District Heat Network system	Yes – if District Heating matches the performance of gas, then the same extent of PV as the Notional gas dwelling would be expected	Yes in principle. but needs further work – only the most efficient networks would be viable if the notional heat pump performance has to be matched (e.g. waste heat or heat pump led network)

This is an initial assessment only, on which we are seeking views. The assessment is based on some very preliminary modelling of a semi-detached house and inference of impacts to other fuels based on values on Table 12 of SAP 10.2. However, it may not always be possible to make sufficient compensatory improvements elsewhere in the building to account for a fuel with a worse primary energy or carbon emissions factor than the Notional Dwelling's fuel. For example, there may be less scope for fabric improvements or additional renewables in flats than houses.

This means that viability of particular fuels should not be presumed or inferred from this table to apply to all dwelling types or cases. Consultees are encouraged to undertake their own assessment modelling using England's SAP 10.2 software and alert the Department where there may be further issues.

\* proposed Notional Dwelling





## Annex B- outcomes for typical semi-D house

black= not viable under Options 1 or Option 2 (provided for comparison)

light green= viable under Option 1 only

darker green= viable under Option 1 and Option 2

Table 6D.1 modelled annual running costs (£/yr)<sup>(1)</sup>, 104m<sup>2</sup> semi-detached house

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
<b>RUNNING COSTS (£/yr)</b>	Typical Existing Build (SAP 60D) gas boiler	Current Part F (Gas boiler & 1.51kWp PV System)	Current Part F (Oil boiler & 1.95 kWp PV System)	<b>Option 1 Notional Dwelling</b>  Gas boiler, improved fabric & PV to 40% roof	<b>Option 2 Notional Dwelling</b>  ASHP & improved fabric	LPG boiler, very high fabric & PV to 40% roof	HVO boiler, very high fabric & PV to 40% roof	ASHP, very high fabric & PV to 40% roof <b>[Potential future Notional Dwelling for Phase 4/5?]</b>
SAP10.2 RATING	<b>60D</b>	<b>90B</b>	<b>91B</b>	<b>95A</b>	<b>84B</b>	<b>91B</b>	<b>93A</b>	<b>96A</b>
SAP 10.2 regulated running cost used to calculate rating	£1,074	£254	£235	£116	£420	£222	£182	£98
LOCAL RUNNING COST regulated uses only	£2,726	£503	£158	£153	£765	£176	£536	£71
LOCAL RUNNING COST (inc 2400 kWh for 'unregulated' uses )	<b>£3,446</b>	<b>£1,223</b>	<b>£878</b>	<b>£873</b>	<b>£1,485</b>	<b>£896</b>	<b>£1,256</b>	<b>£791</b>



## Section 5- Phase 4 and 5 considerations

Influences for Phase 4 include–

- England’s *Future Homes* and *Future Buildings* proposals due to come into operation from 2025
- accompanied by developments on SAP 11 and SBEM v7 / Non-domestic NCM reform- (smart measures and half hourly modelling etc.)
- Scotland’s ban on direct emissions heating in new builds from April 2024
- Scotland’s commitment to introduce a “Scottish equivalent to Passive House” from 2025
- Boiler product standards from 2026 (a move to hybrids)
- Plethora of proposals under EPBD 4 (under development by EU)- although many are aimed at requiring or encouraging deep retrofit of stock irrespective of whether work is taking place or not (e.g. requirements to cover external parking spaces with PV)- so would not have been for Building Regulations.
- All outlined in the consultation document and Annex C



## Section 5- Phase 4 and 5 considerations

Phase 5 (2029/30) is speculative at this stage, but may also include other issues, such as –

- Further developments on smart systems and performances (storage etc)
- Embodied carbon or circular economy assessments (discussed in Section 6)
- Post occupation feedback or performance requirements
- Assurance on construction e.g. further testing and validation measures.



## Section 6- Concurrent issues

Immediate focus is on delivering the uplifts outlined in Section 3 and 4.

However, we are aware that there are additional issues, which may help inform future development, working co-operatively with other administrations.

## Section 6A- NCM issues

local grid factors and weather/location data, forward looking carbon factors etc.

black= not viable under Options 1 or Option 2 (provided for comparison)

light green= viable under Option 1 only

darker green= viable under Option 1 and Option 2

Table B.2 Modelled operational emissions (kg/y); 104m<sup>2</sup> semi-detached house

EMISSIONS (kgCO <sub>2</sub> e/yr)	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5		Scenario 6		Scenario 7		Scenario 8	
	regulated (1)	total (2)	regulated (1)	total (2)	regulated (1)	total (2)	regulated (1)	total (2)	regulated (1)	total (2)	regulated (1)	total (2)	regulated (1)	total (2)	regulated (1)	total (2)
SAP 10 (0.136)	5069	5395	1360	1686	1992	2318	1052	1378	388	714	1052	1378	-88	238	5	331
DEAP (0.244)	5105	5642	1287	1824	1894	2432	823	1361	639	1177	866	1403	-278	260	8	546
NI Estimate (0.340)	5152	5968	1190	2006	1765	2581	521	1337	970	1786	620	1436	-528	288	13	829



## Section 6B- Embodied carbon and materials

### Notes –

- Part Z campaign and RIBA targets
- Need to consider Whole Life Carbon, not just operational carbon
- Issues on the need to agree a methodology e.g. presumptions on lifetimes of certain building types, default carbon factors/kg of each material
- Reliability and oversight of the EPDs
- Circular economy principles and role of design for dismantling or other metrics for recycled content etc in buildings
- How to encourage or assess long life-cycles at design stage?
- Limited Departmental and policy capacity in these areas

### Conclusion –

- work with other administrations
- potential to encourage WLC assessment alongside current operational metrics



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