IGBC
IRISH GREEN BUILDING COUNCIL

BUILD UPON²

National Readiness Report: Ireland

June 2020

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BUILD UPON²

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IGBC IRISH GREEN BUILDING COUNCIL · Green Building Council Italia · PLGBC Polskie Stowarzyszenie Budownictwa Ekologicznego · Cedbik ÇEVRE DOSTU YEŞIL BINALAR DERNEĞI TURKISH GREEN BUILDING COUNCIL · UK GBC

WORLD GREEN BUILDING COUNCIL

The BUILD UPON² Project

We are in a state of climate emergency. We must act now to reach net zero carbon by 2050 - and cities can lead the way. To get there, cities must unlock the huge potential of their buildings - and building renovation in particular.

Deep building renovation has far-reaching benefits for society as increasing indoor comfort and air quality avoids illnesses and premature deaths associated with living in cold and damp homes. This in turn reduces pressure on healthcare and social services.

The EU Horizon 2020 funded BUILD UPON² project will empower cities across Europe to join forces with national governments and industry to decarbonise their existing building stock by 2050. BUILD UPON² will strengthen the local effectiveness and implementation of the national building renovation strategies required by the EU Energy Performance of Buildings Directive (EPBD).

www.worldgbc.org/build-upon

About the Irish Green Building Council

The Irish Green Building Council (IGBC), is the leading authority on sustainable building in Ireland. With a network of over 170 member organisations, the IGBC is working to transform the Irish construction and property sector into a global leader in quality and sustainability.

The mission of the IGBC is to educate and advocate for a more sustainable built environment. To support Ireland's transition to a low carbon economy, the IGBC has also developed the Home Performance Index (HPI), Ireland's first national certification for quality and sustainability in new residential developments.

"Dublin City is committed to renovating its older buildings to improve energy performance. This will also contribute to sustainability, economic growth and employment. The Council is pleased to be working with seven other cities across Europe to strengthen implementation of the Energy Performance of Buildings Directive."

- Owen Keegan
Chief Executive - Dublin City Council

"The Framework will help to communicate the benefits of energy renovation, including health and comfort in homes, cost savings, climate mitigation and opportunities for local employment"

- Orla Hegarty
University College Dublin

"The Framework must keep a reasonable balance between environmental, social and economic indicators. These indicators must be simple and of high quality. The quality of the indicators is more important than the quantity"

- Brian McSharry
CEO - Energy Action

Contents

Europe's cities are declaring climate emergencies.

Build Upon² helps cities lead the charge towards net zero carbon by 2050 by unlocking the huge potential of buildings - developing strategies and solutions to scale up energy efficient building renovation.

LIST OF Acronyms

BER	Building Energy Rating
CIF	Construction Industry Federation
CoM	Covenant of Mayors
CSO	Central Statistics Office
DCCAE	Department of Communications, Climate Action and the Environment
DPER	Department of Public Expenditure and Reform
ESRI	Economic and Social Research Institute
GPRN	Gas Point Reference Number
HSE	Health Services Executive
IAQ	Indoor Air Quality
MPRN	Meter Point Reference Number
POE	Post Occupancy Evaluation
SEAI	Sustainable Energy Authority of Ireland
SECAP	Sustainable Energy and Climate Action Plan
UCD	University College Dublin
WHO	World Health Organisation

Executive Summary

Workshop Key Outcomes

To be successful in Ireland, the Framework must suit local authorities and central government's needs. It must also add value to their actions. It could for instance be used to improve transparency, engage with key stakeholders, and ultimately, drive change.

The balance to be found between the development of reliable data that can support policy and simplicity of use was extensively discussed. The lack of data and the lack of resources to capture quality data may be an issue. To deal with this challenge, the Framework must be highly practical and easy to use. One suggestion was to use as much as possible existing data, and possibly to complement this with data obtained on small samples. E.g. for actual energy use or indoor air quality. Additional indicators could be added at a later stage, but initially the focus should be on what is practical and feasible.

All the suggested indicators must be cross-referenced to existing local and national policies, targets, and legislation. For instance, references to the National Climate Action Plan renovation targets must be added.

Several recommendations were made in relation to specific indicators. These are listed below:

Environmental indicators

- The baseline year of environmental indicators must be more clearly defined.
- The "Improvement of Net Space Heating & Cooling Demand due to energy renovation" indicator may be removed from the list of core indicators as it overlaps with the "Final energy consumption reduction from renovation" indicator.

Social indicators

- The suggested indicator to assess energy poverty is good but not sufficient on its own. It must be complemented by an additional indicator. This could be the "percentage of disposable income spent on heating" (data available from the CSO) or qualitative data collected on a small sample.
- The two suggested indicators to assess indoor air quality are good but not sufficient on their own. It was suggested to add a post-occupancy indoor air quality indicator (based on a small sample) may be added.
- The two suggested indicators to assess comfort were perceived as controversial and require further work. A reference to the World Health Organisation's recommendations in relation to thermal comfort may be added to make the indicator less subjective.

Economic indicators

- Renovation should not only be presented as a cost. It was suggested to add an indicator presenting the financial benefits of energy renovation - from financial savings due to energy savings and carbon tax savings, to co-benefits.
- The two skills indicators were perceived as good but slightly controversial. They could support the perception that education and upskilling are sufficient to ensure quality. One solution might be to add one indicator covering the number of third-party verified renovations.

"What ingredients are critical to the success of the Build Upon² framework in Ireland?"

INTRODUCTION

Build Upon² is the world's largest collaborative project on building renovation. It is Europe's foremost effort to establish a framework for national renovation strategies and build the commitment of local governments and companies to net zero emission buildings by 2050.

To achieve this objective, the project will work with cities, including Covenant of Mayors signatory cities, national governments and a wide range of key stakeholders to develop and test a Multi-Level Energy Renovation Impact Framework (the 'Framework'). The Framework will contain a suite of milestones and measurable progress indicators for building renovation strategies, integrating data and insights from the local authority level. This in turn will allow local authorities and central government to assess the impact of local energy renovation initiatives and better identify best practice.
The Framework will also serve as a tool for municipalities in delivering the Energy Performance of Building Directive and ensure that local initiatives are aligned with national and European policies.

To make it easier for cities, the Framework will be integrated into Sustainable Energy and Climate Action Plans, prepared by Covenant of Mayors municipalities.

Framework Objectives

Better align local and national government retrofit initiatives.	**Enable the capturing of sound data and knowledge at the local level.**	**Better capture and use data on the co-benefits of energy renovation.**
Capture data in a consistent format.	**Better identify best practice.**	**Inform policy decision-making.**

BUILD UPON² in Ireland

In Ireland, the Irish Green Building Council works in close cooperation with Dublin City Council, and three "follower" local authorities. These are Carlow, Cork and Kilkenny.

In Europe, the Irish Green Building Council and Dublin City Council work closely with 7 other green building councils and local authorities, alongside the Building Performance Institute of Europe and Climate Alliance, part of the Covenant of Mayors office team.

The project partners are supported by a European advisory board and eight national steering groups, which have provided feedback on the first two versions of the draft framework.

Ireland's National Steering Group

DCCAE
Kevin McCann

Dublin City Council
Patrick Stanley

CIF
Jeannette Mair

ESRI
John Curtis

Codema
Rebecca Cachia

HSE
Ina Kelly

CSO
Gerry Brady

Retrokit
Xavier Dubuisson

DPER
Ken Cleary

SEAI
Conor Hanniffy

Department of Housing
Emmanuel Bourdin

UCD
Orla Hegarty

TIMELINE

The versions 1, 2 and 3 of the draft Framework were developed by the project partners in close cooperation with the European Advisory Board and the eight national steering groups. The objective of the workshop organised on Thursday, 14th May was to gather feedback on the third draft version of the Framework and to discuss actions required to support its implementation. The Irish Green Building Council team would like to thank all the participants who attended and contributed to the workshop. These are listed page 32.

Seven similar workshops took place across Europe in May 2020. The feedback received will be used to update the draft Framework V.3. before it is tested by the 8 pilot cities between July and December 2020.

12.19
Framework Draft V.1

02.20
Framework Draft V.2

04.20
Framework Draft V.3

07.20
Pilot Phase Starts[1]

01.21
Follower Cities Trained

03.21
Framework Launch

[1] The 8 pilot cities are Budaörs - Hungary, Dublin - Ireland, Eskişehir - Turkey, Leeds - UK, Padova - Italy, Valladolid - Spain, Velika Gorica - Croatia, and Wroclaw - Poland.

Challenges & Opportunities

Key Outcomes

- The Framework must suit local authorities and central government's needs and add value. It must also be highly practical and easy to use.
- The indicators must be clearly cross-referenced to existing national and local policies, targets, and legislations.
- Post-occupancy evaluation (to be done on a small sample) may need to be part of the Framework. E.g. for actual energy use and indoor air quality.
- The baseline year of environmental indicators must be clearly defined.

Environmental indicators:

- The "Improvement of Net Space Heating & Cooling Demand due to energy renovation" indicator may be removed from the list of core indicators as it overlaps with the "Final energy consumption reduction from renovation" indicator.

Social indicators:

- The "% of households having arrears on utility bills" indicator cannot be used on its own to assess fuel poverty. It must be complemented by an additional indicator – perhaps a qualitative indicator.

Economic indicators:

- Selected indicators should not only present renovation as a cost. It might be worth adding an indicator that would capture the financial benefits of energy renovation (e.g. energy savings, carbon tax savings and co-benefits).
- The education indicators were perceived as controversial. Training is not always sufficient to guarantee quality. This may need to be complemented by an indicator assessing the number of inspections.

The objective of the first session was to collect feedback on the draft Framework V.3., specifically in relation to the challenges and opportunities presented by its implementation in Ireland. During that session, participants worked in six groups on how to make the Framework more useful, and how to improve environmental, social, and economic indicators. The group discussions are summarised below.

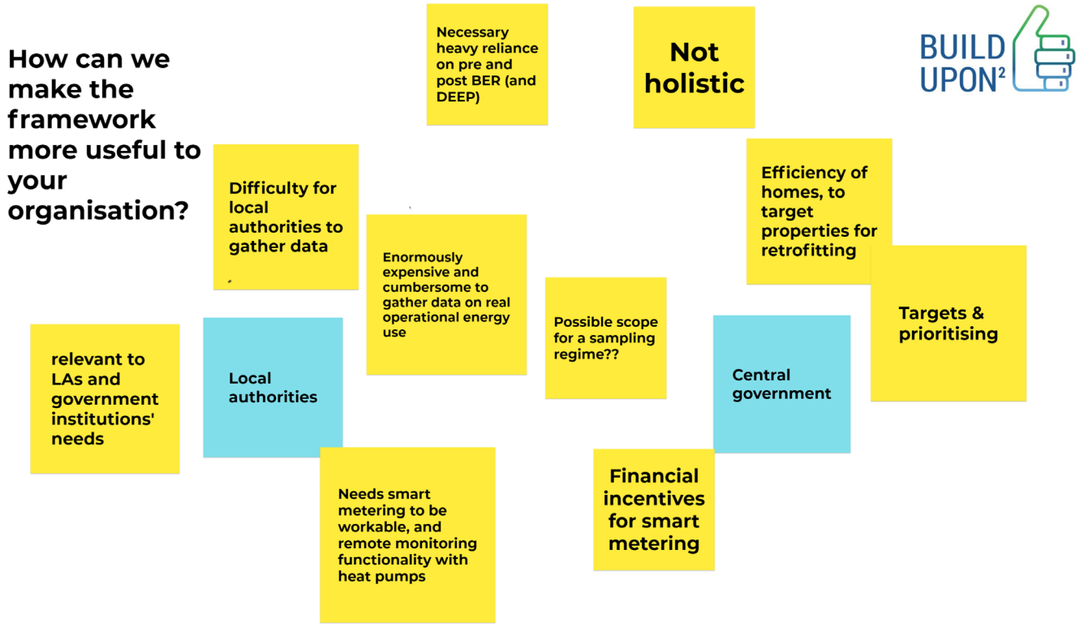
Making the Framework More Useful

Two groups of participants worked on how to make the Framework more useful for Irish local authorities and central government.

For the Framework to be used by local authorities and central government, it must be highly relevant, and it must suit their needs. For instance, it should allow them to better identify properties to target for retrofit. It should also support high impact renovations.

The Framework cannot be too burdensome or expensive to use. Indicators may need to be prioritised. In particular, to make the Framework fully operational within a year, the focus must be on what is practical and feasible. More indicators may be integrated at a later stage, but an incremental approach is needed. For some indicators, a sampling system may also be needed.

Local authorities are likely to require support to gather data, especially if data on actual energy use is to be collected. This will only be workable if smart meters are rolled out.



Environmental Indicators

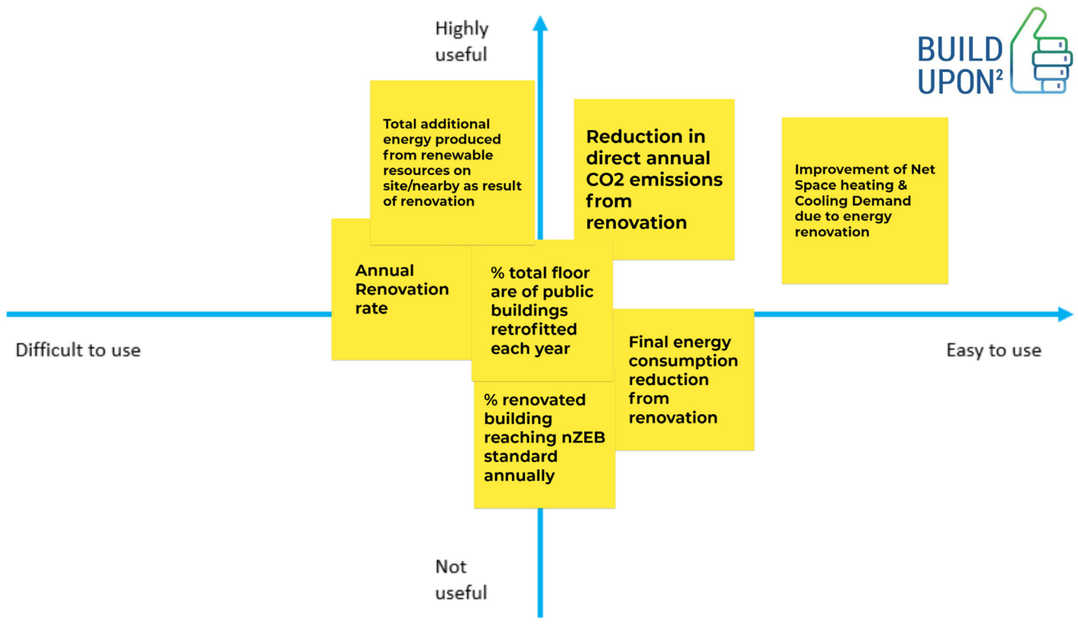
Two groups of participants reviewed the seven environmental indicators and made suggestions on how to improve them.

Some participants felt that there were overlaps between some of the suggested indicators. For instance, it may not be needed to have an indicator measuring final energy consumption reduction from renovation and an indicator measuring improvement of net space heating & cooling demand due to energy renovation.

Furthermore, the Framework must be clearly cross-referenced to existing national and local ambitions and regulations, e.g. to the renovation targets and annual renovation rate included in the Climate Action Plan.

To develop a useful and practical Framework, it is critical to look at (and use as much as possible) existing data. Pre and post BER may not be the best approach when it comes to light renovation as many light renovation works will not have pre and post BERs. The baseline year must be clearly defined.

Potential additional core indicators were also discussed. These included post-occupancy evaluation (POE) and embodied carbon. Although POE is expensive, local authorities may be able to capture this data on a reasonable sample. It should also be clearer that there is a (non-core) embodied carbon indicator. The Framework should support a balance between saving on operational and spending on embodied energy.



Social Indicators

One group of participants reviewed the suggested core social indicators and made suggestions on how to improve them.

Indoor Air Quality (IAQ): The participants said that "# households living in renovated dwellings with commissioned ventilation system" and "# non-residential renovated buildings with a commissioned ventilation system" were good indicators. But, assessing IAQ is a bit more complex than that and additional indicators may be needed. It was suggested to add a post-occupancy indicator based on a small sample. As it must be simple for users, one suggestion was to work with utility companies who would provide smart sensors and nests to some households and that the data would be automatically transferred to the cloud.

Energy poverty: The participants expressed concerns with the "% of households having arrears on utility bills" indicator if it is used on its own. This indicator could be misleading as many people in fuel poverty pay their bills (shame factor) and many people with high energy expenditure are not experiencing fuel poverty. Energy poverty is due to a combination of low income, high energy expenditure and low energy efficiency of people's homes. One suggestion was to combine the suggested indicator with qualitative data (interviewing) on a small sample to better capture people's experience.

Economic Indicators

One group of participants reviewed the suggested core economic indicators and made suggestions on how to improve them.

Renovation should not only be presented as a cost. All the benefits of energy renovation (from financial savings due to energy savings and carbon tax savings, to co-benefits) should be converted into one financial figure.

It may also be difficult to break down energy renovation costs from total renovation cost. This may be misleading, and people may perceive energy renovation as more expensive than it is. To deal with this issue, it was suggested to break down renovation costs further.

Finally, there were extensive discussions around the education indicators. One participant said that the "# graduates from 3rd level courses and technical training courses with focus on energy renovation" indicator was not easy to measure or useful.
It is not in itself an indication of quality. It was suggested to have indicators combining capacity and quality. The "# graduates from 3rd level courses and technical training courses with focus on energy renovation" indicator is a good capacity indicator. But it must be used in combination with an indicator of quality, such as "#/% of third party oversight".

Build Upon² will play a key role in tackling one of Europe's biggest climate challenges: the renovation of its existing building stock.

The Framework will effectively measure the environmental, social and economic impact of deep building renovation at local authority level.

Making the Framework Work In Ireland

Supporting Actions Needed

Key Outcomes

Environmental indicators:

- Environmental data relating to local authorities' buildings and social housing stock are easy to capture. Most of them are already captured as part of SEAI's Monitoring and Reporting Programme.
- For all other buildings, the best option may be to use pre and post BERs. BERs are not perfect, but they are evolving and widely available.

Social indicators:

- Fuel poverty: The "% of households having arrears on utility bills" is easy to measure but the indicator is not good enough on its own. It must be complemented by another indicator to fully capture energy poverty.
- IAQ:
  - "# households living in renovated dwellings with commissioned ventilation system" is a good indicator but it might need to be complemented by an additional post-occupancy evaluation indicator which would be based on a small sample.
  - "# post-renovation radon assessment complying with EPA guidelines" is a critical indicator. Coordination with the EPA may be required.
- Thermal comfort: The definitions of thermal comfort (satisfying heating requirements and minimising over-heating risks) must be refined. It was suggested to use WHO definitions or ISO standards to make it less subjective.

Economic indicators:

- Selected indicators should not only present renovation as a cost. It might be worth adding an indicator that would capture the financial benefits of energy renovation (e.g. energy savings, carbon tax savings and co-benefits).
- The education indicators were perceived as controversial. Training is not always sufficient to guarantee quality. This may need to be complemented by an indicator assessing the number of inspections.

During this second session, the workshop participants discussed one of the critical issues that has been identified since the beginning of the project: The lack of data and resources to capture quality data. For this session, the workshop participants were broken down into five working groups, looking at environmental, social, and economic indicators. For each indicator, they were asked to make suggestions as to how this data could be captured, and how we could deal with the lack of data.

Environmental Indicators

Two groups of participants discussed environmental indicators. The feedback received for each indicator is presented below.

Reduction in direct annual CO2 emissions from renovation compared to the local authority's baseline year as per Covenant of Mayors reporting

The data will be easy to capture for public buildings through Meter Point Reference Number (MPRN) for electricity and Gas Point Reference Number (GPRN) for gas. Furthermore, public bodies and schools must report on this topic annually to SEAI as part of the Monitoring and Reporting programme.

This may be more challenging for other buildings. Using pre and post BERs seem to be the best option. BERs are not perfect, but they are evolving and widely available. Some participants said that BERs may need to be used alongside other datasets e.g. actual consumption, but this information could be difficult to access.

Final energy consumption reduction from renovation (kWh/m²/year)

The feedback received in relation to this indicator is very similar to the feedback received for the previous indicator.

The data will be easy to capture for public buildings as public bodies and schools must report on this topic annually to SEAI as part of the Monitoring and Reporting programme.

For other buildings, the number of BERs is limited but growing. E.g. Pre and post BERs are already required to access some SEAI grants, and for local authorities to access funding to retrofit their social housing stock. BERs are probably the best way to capture this data. But some participants felt that additional POE data would be needed too – even if only a small sample of properties.

Improvement of Net Space Heating & Cooling Demand due to energy renovation (kWh/m²/yr)

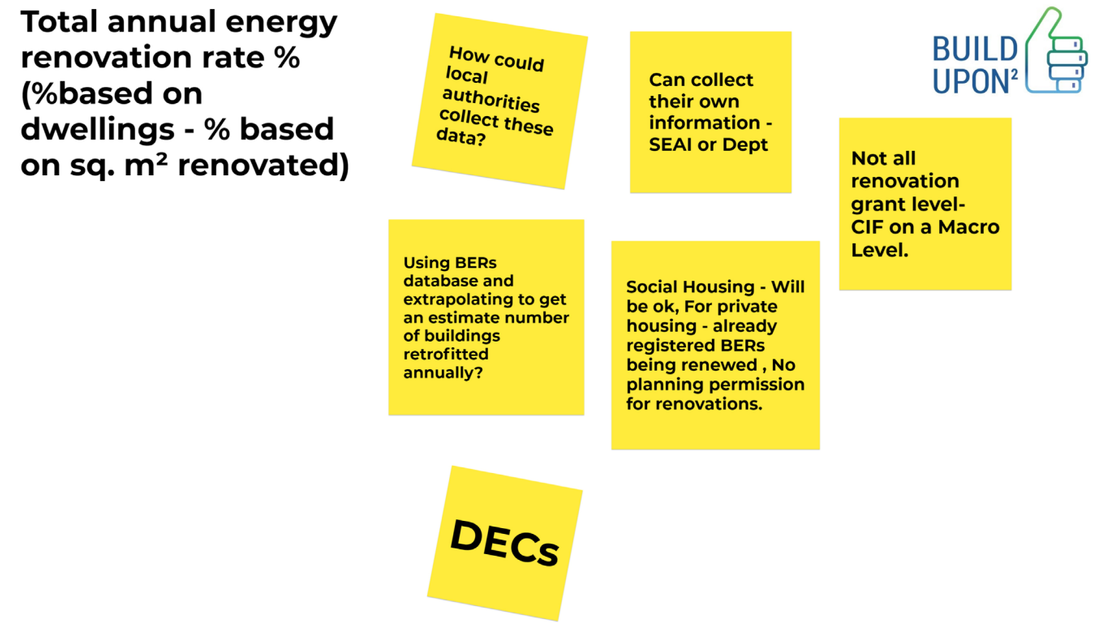
As per the two previous indicators, the workshop participants felt that BER would be the best way to capture this data.

Several workshop participants questioned the added value of this data: It would take time to collect this data for very little gain. One group recommended to make “Improvement of net space heating & cooling demand due to energy renovation” a non-core indicator.

Total annual energy renovation rate

The annual energy renovation rate will be easy to measure for social housing and public buildings.

It will be challenging to measure for the rest of the building stock. Pre and post BERs are required under some grant schemes, but many renovations take place without a full pre and post BER audit. CIF may have bold data at national level. It was noted that it would be far easier to capture this data if renovation works felt under B(C)AR certification.



% of renovated buildings reaching nZEB standard annually

This information would be easy to capture for public buildings and social housing. But it would be very challenging for the rest of the building stock – unless the renovation receives support from SEAI.

Alternative options around planning applications and B(C)AR certifications were discussed. One group of participants said that planning applications could be changed to better capture data on renovation. It was felt that the B(C)AR certification approach may not work for this indicator as it would create a liability risk for building professionals.

Finally, a definition of nZEB for renovation should be added.

% of the total floor area of buildings owned and occupied by the local authority retrofitted each year

This data is easy to capture as local authorities already report on it to SEAI as part of the Monitoring & Reporting programme. However, it might make sense to engage with the Local Government Management Agency to better channel data.

Total additional energy produced from renewable resources on site or nearby as a result of renovation (kWh/year)

This data can be captured through pre and post BER assessments.

Social Indicators

Two groups of participants discussed social indicators. The feedback received for each indicator is presented below.

Energy poverty

The workshop participants said that data on the suggested indicator is widely available through the CSO - Annual survey on income and living conditions. However, workshop participants reiterated that the indicator (used on its own) is not good enough. E.g. Many fuel poor households use the pay-as-you-go system and wouldn't be captured within that statistic.

It was suggested to review models of fuel poverty available and see what could be replicated. The two suggestions made on the day were to combine the suggested indicator, either with percentage of disposable income spent on heating (CSO data) and/or with qualitative data collected on small samples.

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IAQ – Ventilation system

This data is part of the BER and relatively easy to capture. It could even be easier if Building Renovation Passports were introduced and the information was captured in a simple entry.

A few participants expressed concerns that capturing this data, won't be enough to fully capture impact of renovation on IAQ. It was suggested to add post-occupancy evaluation samples. But other participants felt that greatness could get in the way of good and that it could become too expensive.

IAQ - Radon assessment

All workshop participants taking part in this discussion agreed this indicator was critical. It was suggested IGBC's team contact the EPA to see how this data can be incorporated into the Framework.

Thermal Comfort – Satisfying heating requirements

Irish local authorities do not currently capture this data. All workshop participants felt that the wording and definition needed to be improved: "If it implies more effort towards the fabric, the question isn't clear". More specificically, it was suggested to make reference to World Health Organisation recommendations with regard to thermal comfort.

If it is kept too vague, it could be controversial as only linked to perception.

One participant said that a good way to capture this data at scale would be to use the European space agency data (1m² resolution) or to use a drone with multi-spectrum imaging (IR imaging) as a proxy.

Thermal Comfort – Minimising overheating risks

The risk of overheating is moving up the agenda in some local authorities. E.g. Cork City Council has captured this data on a small sample. But most local authorities do not capture data on this topic.

Climate Resilience

Local authorities have some quality data on vulnerability to climate change. E.g. on flooding. Yet, most of them have little data on other risks such as landslide, corrosion or storms. It was generaly agreed that more work on this topic was needed and that implementation was an issue.

Awareness raising

No feedback was collected on these suggested indicators as groups did not have time to cover them.

Economic Indicators

One group of participants reviewed the four suggested core economic indicators. The feedback received for each indicator is presented below.

Total annual investment in renovation

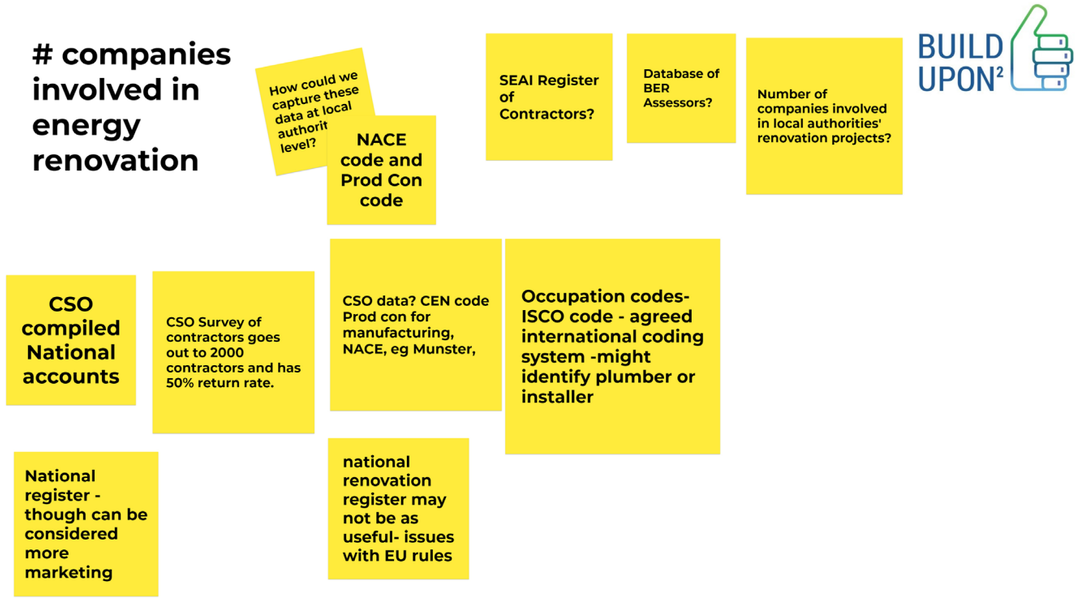
The total annual investment in renovation is not currently captured as such, but there are many datasets that could be used.

- The CSO survey of contractors reach out to 2,000 contractors – with approx. 50% response rate.
- The total amount of SEAI grants, including EXEED scheme for commercial buildings.
- Local authorities' direct investment in renovation.
- The value of energy renovation materials imported and sold (e.g. insulation materials) – This could be assessed through product codes.

 # companies involved in energy renovation

Data on the number of companies involved in energy renovation is not currently captured, but many datasets could be used. These include:

- The CSO survey of contractors.
- CSO compiled national account – Using NACE and ISCO codes.
- In future, the national renovation register may also be used.



 # graduates from 3rd level courses and technical training courses with focus on energy renovation

The workshop participants provided very little feedback on this indicator and data associated. Some participants said that it should be clearer that data on number of apprentices will be captured.

 # building professionals and construction workers taking part in energy renovation upskilling of which #Public sector staff upskilling in energy renovation

There were extensive discussions among workshop participants as to whether this indicator (and the previous one) were useful. Some workshop participants felt that there was an over reliance on training and education to assess quality. Supervision and inspections are critical too and should be measured.

Overall, most workshop participants agreed that this is a good indicator, even if training does not guarantee quality. Perhaps, a combination of capacity (training and education) and quality (inspection) is needed.

Data on "#Public sector staff upskilling in energy renovation" will be easy to capture. But it will be far more difficult to collect it for the private sector.

Appendix 1. Build Upon² Draft Framework V.3

CATEGORY	GOAL Contribute to EU Targets	NATIONAL Progress Indicators	MUNICIPAL Progress Indicators	Unit of Measure
Environmental	Greenhouse gas emission reduction: 50% by 2030 compared with 1990 level and carbon neutrality by 2050	Reduction in direct annual CO2 emissions from **renovation** compared to 1990 levels	Reduction in direct annual CO2 emissions from **renovation** compared to the municipality's baseline year as per CoM reporting	> Ton CO2/ year (total building stock) > Breakdown by building type from total number (%)
		Final energy consumption reduction from renovation	**Final energy consumption** reduction from renovation	kWh/m²/year
		Improvement of **Net Space Heating & Cooling Demand** due to energy **renovation**	Improvement of **Net Space Heating & Cooling Demand** due to energy **renovation**	> kWh/m²/yr (total building stock) >kWh/m²/yr (for each building type)
Environmental	At least 32.5% improvement in energy efficiency by 2030 - relative to the 2007 modelling projections for 2030.	Annual energy **renovation rate** %	Total annual energy **renovation rate** % > of which **light renovation** > of which **medium renovation** > of which **deep renovation**	% based on dwellings % based on sq. m² renovated - Non-domestic buildings
		% of renovated buildings reaching **nZEB standard** annually	% of renovated buildings reaching **nZEB standard** annually	% renovated buildings
		% of the total floor area of buildings owned and occupied by central government retrofitted each year	% of the total floor area of buildings owned and occupied by the municipality retrofitted each year	% of total m² net floor area
Environmental	At least 32% share of **renewable energy** by 2030	Total additional energy produced from **renewable resources on site or nearby** as a result of renovation	Total additional energy produced from **renewable** resources on site or nearby as a result of **renovation**	kWh/year

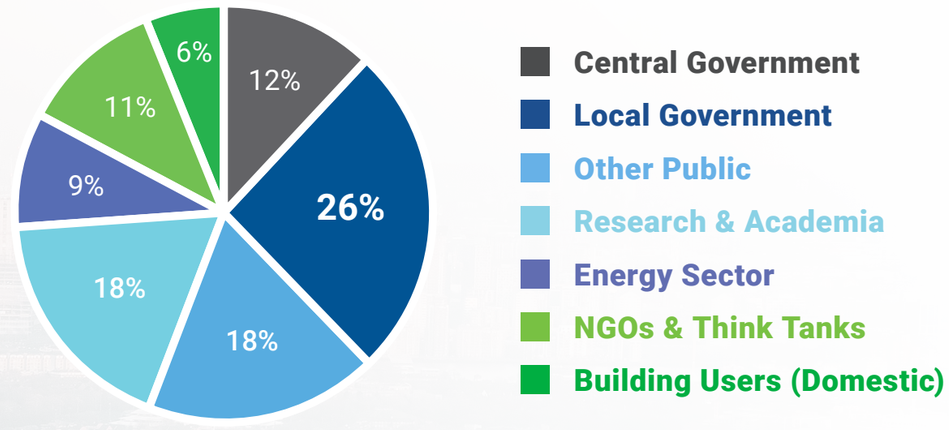
CATEGORY	GOAL Contribute to EU Targets	NATIONAL Progress Indicators	MUNICIPAL Progress Indicators	Unit of Measure
Social	Reduction of **energy poverty**	% of households having arrears on utility bills	% of households having arrears on utility bills	% of households
		Actions to improve **indoor air quality** post **renovation** works	# households living in renovated dwellings with commissioned ventilation system	# households
			# non-residential renovated buildings with a commissioned ventilation system	# buildings
		# post-renovation radon assessment complying with EPA guidelines (200bq/m³)	# post-renovation radon assessment complying with EPA guidelines (200bq/m³)	# radon assessment
Social	Provide safe buildings to people - **Indoor Air Quality** and **Thermal Comfort**	Actions to improve average **thermal comfort** post renovation works	# households living in renovated dwellings where calculations demonstrate that post renovation condition will satisfy heating requirements	# households
			# households living in renovated dwellings where actions have been taken to minimise summer overheating risk	# households
			# non-residential renovated buildings where calculations demonstrate that post renovation condition will satisfy heating requirements	# non-residential buildings
			# non-residential renovated buildings where actions have been taken to minimise summer overheating risk	# non-residential buildings
			Are policies in place to ensure retrofitted buildings are climate resilient? Y/N	Y/N
			Have local vulnerability to climate change studies / maps been developed?	Y/N
			Have guidance/ strategies and tools been developed to ensure renovation projects cope with identified risks (e.g. flooding and overheating)?	# buildings
			# buildings retrofitted in line with guidance documents	
Social	Empowering citizens - Ensuring citizens are at the centre of the transition	# private households retrofitting their homes / year	# private households retrofitting their homes / year	# private households
		# sq. m² commercial buildings retrofitted annually	# sq. m² commercial buildings retrofitted annually	# buildings

CATEGORY	GOAL Contribute to EU Targets	NATIONAL Progress Indicators	MUNICIPAL Progress Indicators	Unit of Measure
Economic	Increasing investment in energy renovation	> Total annual investment in energy renovation	> Total annual investment in energy renovation	€
		> Total annual public investment in energy renovation	> Total annual public investment in energy renovation	
		> Total annual private investment in energy renovation	> Total annual private investment in energy renovation	
		# companies involved in energy renovation	# companies involved in energy renovation	# companies
Economic	At least 32.5% improvement in energy efficiency by 2030 - relative to the 2007 modelling projections for 2030.	# graduates from 3rd level courses and technical training courses with focus on energy renovation	# graduates from 3rd level courses and technical training courses with focus on energy renovation	# graduates
		# building professionals and construction workers taking part in energy renovation upskilling	# building professionals and construction workers taking part in energy renovation upskilling	# building professionals and construction workers
		> of which #Public sector staff upskilling in energy renovation	> of which # Municipality staff upskilling in energy renovation	

Thank you to all our workshop participants

Workshop Participants Analysis

Thirty-eight people joined the Build Upon² National Focus Group meeting in Ireland. Local authorities and other public bodies were the strongest represented community on the day, followed by research and academia, central government, and NGOs.



BUILD UPON²

Work With Us!

As 2020 is the start of the decade of climate action, we are inviting all local authorities, regions and companies to work with us on solutions in the building sector.

The Build Upon² project is welcoming local authorities to join our work on renovation strategies, and would love to hear more about impactful renovation initiatives you are running in your local authority - which we can put on the European stage.

The pilot cities we are working with are: Velika Gorica, Croatia - Budaörs, Hungary - Dublin, Ireland - Padova, Italy - Wroclaw, Poland - Valladolid, Spain - Eskişehir, Turkey - Leeds, UK.

We are calling on leaders across the public and private sector to join the Net Zero Carbon Buildings Commitment ahead of COP26 - to really make Europe's renovation wave a reality.

Read more about the project and get in touch with the team via the links and details below.

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Twitter @IrishGBC #BUILDUPON

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