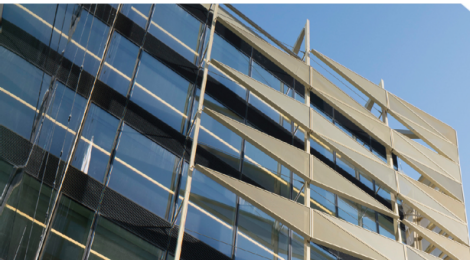




Banc Ceannais na hÉireann  
Central Bank of Ireland

Eurosystem



Going Green: The Growth in Green Mortgage Financing in Ireland

SCSI CPD Event

Paul Lyons, Central Bank of Ireland

July 27, 2023

# Presentation today

0. Main Findings
1. Introduction
2. Overview of the Green Mortgage Market in Ireland & Data
3. Comparing Green and non-Green Market Shares
4. Characteristics of Green Mortgages
5. Conclusion

## FS Note

- Going Green – The Growth in Green Mortgage Financing in Ireland, D.Lambert, P.Lyons, J.Carroll - **FS Note, April 2023**.
- In this FS Note, we estimate the growth in green mortgage financing in Ireland and describe the characteristics of green mortgage borrowers and loans.



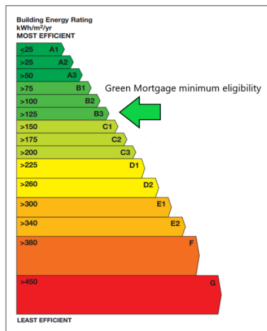
# 0. Main Findings

- FS Note provides a first glimpse into climate-aligned lending trends in Ireland.
- We find that, despite their very recent introduction, green mortgages account for a sizable and growing share of mortgage lending, representing almost thirty per cent of originations in 2022.
- There are significant differences between green and non-green mortgage borrowers and loans.
  - ▶ In particular, we find that first time buyers (FTBs), those switching their mortgage, and borrowers in the Leinster region are the most likely cohorts to avail of green mortgages.
- Furthermore, green mortgage loan amounts are larger, are associated with higher value properties and are more prevalent in higher income groups, particularly for FTBs.
  - ▶ This latter point suggests that there is a risk that the efficiency gap between high and low income groups could widen into the future.
- We also find evidence that some eligible borrowers have not availed of/received a green mortgage.



# 1. Introduction

- Recent energy price shocks have heightened the importance of reducing the energy intensity of the national building stock.
- In Ireland, energy efficiency is monitored by the Building Energy Rating (BER) labelling system, with ratings from “A” (most efficient) to “G” (least).
- Green mortgages are directly linked to this system, with most banks requiring a minimum B3 BER.



# Green Mortgages - motivation(1)

- Green loans will play a significant role in meeting Ireland's wider decarbonisation which includes targets to reduce building emissions by 40 per cent by 2030, primarily through retrofitting half a million homes to B2 BER standard.
- From the **borrower perspective**, the lower interest rate associated with green loans is an additional incentive to invest in higher levels of energy efficiency.
- the savings associated with green mortgages (typically 30bps) represent a sizable saving for borrowers.
- From a **lender perspective**, by providing favourable lending terms for higher efficiency, the banking sector is signalling that the risks associated with climate change are embedded into its core business.
- There is a clear relationship between energy efficiency, energy costs and the overall financial health of the household.
- This link between higher energy efficiency and lower default is evident in prior research **Guin & Korhonen, BOE Staff Working Paper No. 852, 2020.**



## Green Mortgages - motivation (2)

- There is also a large body of empirical research showing a significant “energy efficiency premium” in property sales and rentals, a result which has potential implications for bank collateral values.
- In the long run, such risks could intensify as a result of climate policy and changed consumer preferences.
  - ▶ For example, higher carbon taxes would put upward pressure on fossil fuel prices, while higher energy prices combined with a climate-related alignment of consumer preferences would increase the energy efficiency premium.
- Measuring banking sector exposure to such risks and mitigants is therefore important as it has implications for the stability of the financial system.
- Internationally, there are acute data gaps preventing an accurate appraisal of transition risk in the household sector.
- This FS Note partially fills this gap by offering a first glimpse into climate-aligned lending trends in Ireland.



## 2. Green Mortgages, background

### Green mortgages are a new innovation

- In recent years, there has been a growing trend in green mortgage originations as financial institutions and consumers become more climate focussed.
- Green Mortgages were established as a mainstream product in Ireland in 2019.
- According to [Bonkers.ie](https://www.bonkers.ie), Green mortgages are currently available from AIB, Bank of Ireland, EBS, Haven, and Permanent TSB.
- The discount on offer can vary but typically it is around 30bps.

### It might not seem like much, but the savings can really add up.

- Example, FTB who borrowed 250,000 over 30 years with a 10% deposit.
- Five year fixed rate of 3% would equate to a monthly repayment of just over €1,054.
- Five year green mortgage of 2.70% would equate to a monthly repayment of just under €1,014.
- That is a saving of €480 a year or €2,400 over the five year term.



# The Green Mortgage Market

## The Green Mortgage Market is increasing

- Bank of Ireland's green mortgage offers a discount of 0.30% on all its fixed rates from one to 10 years.
- AIB currently (as at July) offer discounts of up to 100bps on some of its green fixed rate mortgages.
- PTSB offer Green 5 year fixed rates, which offers a 20bp reduction on standard 5 year fixed rates
- Haven's four-year green fixed rate is available at 3.65% at present.
- Ulster Bank offered green mortgages up to 2022.
- no provider offers a green variable rate at present

1. Go to Appendix for details [Appendix](#)





# Data

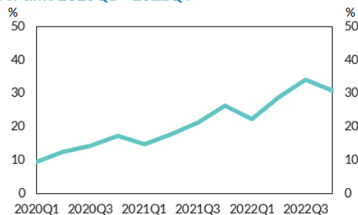
- We utilise Central Bank of Ireland “Loan Level” data to estimate new green mortgage originations.
- This dataset collects information on all new mortgage originations and is mandatory for all lending institutions which issue more than €50 million of new mortgage lending within a six-month period.
- There is no explicit GM flag in the data.
- For this Note, we identify GMs through existing loan characteristics.
- Specifically, for a given term and loan-to-value (LTV) ratio, we identify GMs through their interest rate discounts.



# The Growth of Green Mortgages

- GMs represent almost a third of all new mortgage lending in 2022.
- FTBs received the highest share of all GM originations in the period (56 per cent) versus switchers (24 per cent) and SSBs (20 per cent)

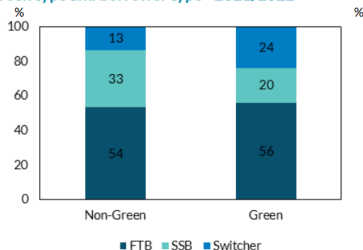
Figure 2: The proportion (%) of green mortgage lending over time 2020Q1 – 2022Q4



Source: Author calculations using bank data.

Notes: Green mortgage originations from 2020Q1 – 2022Q4 from banks that had a green mortgage product offering during this period.

Figure 3: The proportion (%) of mortgage lending by green type and borrower type - 2021/2022



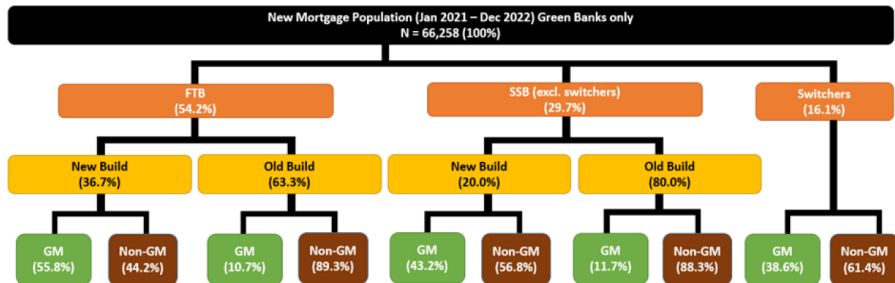
Source: Author calculations using bank data.

Notes: Mortgage originations in 2021 – 2022 from banks that had a green mortgage product offering during this period.



# GM/non-GM lending by borrower & dwelling type

Figure 4: The Share of Green and non-Green mortgage lending by borrower type in 2021/2022



Source: Author calculations using bank data

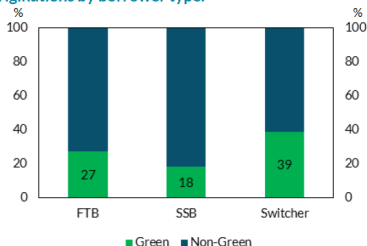
Notes: Green and non-green mortgage originations in period from banks that had a green mortgage product offering or offerings at any point during this period.



# Comparing GMs and non-GMs - Borrower/Income

- GM uptake was highest for switchers (39%), followed by FTBs (27%) and SSBs (18%).
- GM originations are more prevalent within higher income groups, particularly for FTBs

Figure 5: Proportion of Green and non-Green mortgage originations by borrower type.



Source: Author calculations using bank data.

Figure 6: Proportion of Green mortgage originations by Income Quartile.



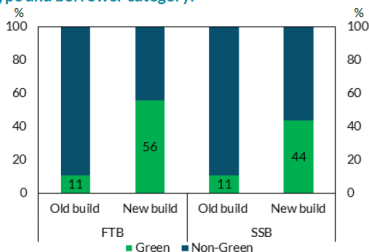
Source: Author calculations using bank data.



### 3. Comparing GMs and non-GMs - Build/Borrower type

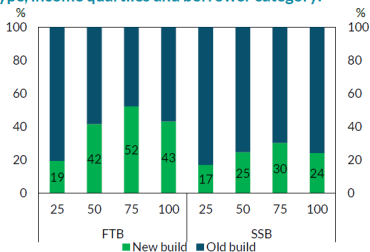
- For new build FTBs and SSBs, GM were drawn by 56 per cent and 44 per cent of borrowers, respectively (Figure 7)
- GMs generally increase with income (with exception of the fourth quartile).

Figure 7: Proportion of Green loans originated by build type and borrower category.



Source: Author calculations using bank data.

Figure 8: Proportion of Green loans originated by build type, income quartiles and borrower category.



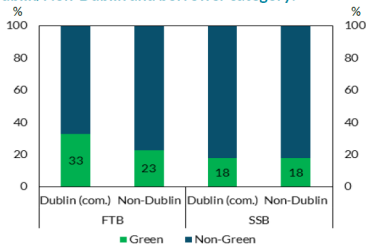
Source: Author calculations using bank data.



# GMs and non-GMs - Geography

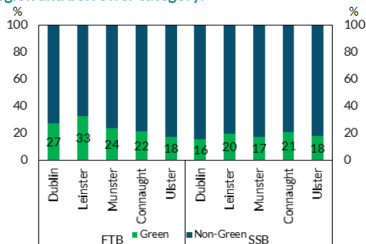
- Among FTB purchases in Dublin/com. counties, 33% received a GM, higher than the rest of the country (23%).
- Among FTBs, the highest proportion of GMs were to borrowers in Leinster followed by borrowers in Dublin.

Figure 9: Proportion of Green mortgages originated by Dublin/Non-Dublin and borrower category.



Source: Author calculations using bank data.

Figure 10: Proportion of Green mortgages originated by region and borrower category.



Source: Author calculations using bank data.



# GMs and non-GMs - Property Size/Type

- For FTBs, 41 per cent of mortgage originations for 'medium' sized properties were green.
- By property type, the highest proportion of GM originations were for semi-detached properties.

Figure 11: Proportion of Green loans originated by property size and borrower category.

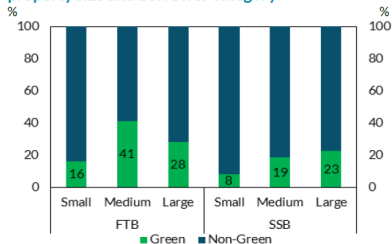
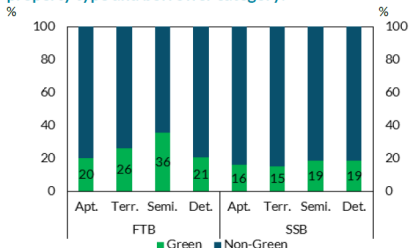


Figure 12: Proportion of Green loans originated by property type and borrower category.



## 4. Characteristics Summary

### FTBs

- Green: Higher loan sizes; higher property values; larger properties; lower interest rates and
- Green more likely to be in Leinster and Green borrowers have higher incomes, Higher LTV & LTI

### SSBs

- Green: Higher loan sizes; higher property values; larger properties; lower interest rates and
- Green: more likely to be in Leinster and Green borrowers have higher incomes, and be joint borrowers, with Higher LTV & LTI





# Characteristics - FTBs

	Non-Green	Green	Difference
<b>Loan Characteristics</b>			
Loan Size (€)	242,765	301,736	58,971***
Property Value (€)	309,224	370,646	61,422***
Loan-to-Value (%)	79.8	81.9	2.1***
Income (€)	77,983	93,403	15,419***
Loan-to-Income	3.1	3.3	0.2***
Loan Term (Years)	28.8	29.7	0.9***
Interest Rate (%)	2.8	2.5	-0.3***
<b>Property Characteristics</b>			
New property (%)	22.3	75.2	52.9***
Property Size (sq.ft)	1,353	1,475	122***
Apartment (%)	10.3	7.0	-3.3***
Terraced (%)	20.1	19.0	-1.1**
Semi-detached (%)	33.2	49.2	16.0***
Detached (%)	35.0	24.5	-10.5***
<b>Borrower Characteristics</b>			
Borrower Age (Years)	34.9	34.7	-0.3***
Joint Applicant (%)	67.4	80.6	13.2***
Salaried Employee (%)	97.0	97.1	0.1
Broker (%)	24.8	22.2	-2.6
Region, of which:			
Dublin (%)	25.3	25.4	0.1
Leinster (%)	30.1	39.7	9.6***
Munster (%)	26.8	22.9	-4.0***
Connacht (%)	11.7	8.6	-3.1***
Ulster (%)	6.0	3.4	-2.6***



# Characteristics - SSBs

	Non-Green	Green	Difference
<b>Loan Characteristics</b>			
Loan Size (€)	256,072	300,402	44,330***
Property Value (€)	485,253	539,534	54,282***
Loan-to-Value (%)	63.3	65.7	2.3***
Income (€)	120,323	130,346	10,023***
Loan-to-Income	2.6	2.8	0.2***
Loan Term (Years)	23.0	24.7	1.6***
Interest Rate (%)	2.7	2.4	-0.3***
<b>Property Characteristics</b>			
New property (%)	13.9	47.9	34.1***
Property Size (sq.ft)	1,773	2,003	230***
Apartment (%)	3.7	3.2	-0.5
Terraced (%)	12.4	10.0	-2.6***
Semi-detached (%)	28.9	30.3	1.4
Detached (%)	53.2	56.0	2.8***
<b>Borrower Characteristics</b>			
Borrower Age (Years)	42.6	41.2	-1.4***
Joint Applicant (%)	76.7	84.8	8.1***
Salaried Employee (%)	94.1	91.3	-2.8***
Broker (%)	15.2	13.6	-1.6**
<b>Region, of which:</b>			
Dublin (%)	31.7	27.0	-4.7***
Leinster (%)	28.2	31.7	3.5***
Munster (%)	25.8	24.8	-1.0
Connacht (%)	10.1	12.4	2.3***
Ulster (%)	4.1	4.1	0.0



# Characteristics - All Borrower Types

	Non-Green	Green	Difference
<b>Loan Characteristics</b>			
Loan Size (€)	250,215	298,397	48,181***
Property Value (€)	393,005	445,524	52,519***
Loan-to-Value (%)	71.0	72.3	1.3***
Income (€)	97,259	108,893	11,633***
Loan-to-Income	2.9	3.0	0.1***
Loan Term (Years)	25.9	27.0	1.0***
Interest Rate (%)	2.7	2.4	-0.3***
<b>Property Characteristics</b>			
New property (%)	16.7	52.5	35.8***
Property Size (sq.ft)	1,523	1,670	147***
Apartment (%)	7.3	5.3	-2.0***
Terraced (%)	17.4	16.1	-1.3***
Semi-detached (%)	32.8	43.7	10.9***
Detached (%)	40.8	34.6	-6.1***
<b>Borrower Characteristics</b>			
FTB (%)	53.5	56.1	2.5***
SSB (%)	33.1	20.3	-12.7***
Switcher (%)	13.4	23.6	10.2***
Borrower Age (Years)	38.3	37.2	-1.1***
Joint Applicant (%)	71.9	83.3	11.5***
Salaried Employee (%)	95.9	95.8	-0.2
Broker (%)	22.6	22.5	-0.1
Region, of which:			
Dublin (%)	30.2	28.8	-1.4***
Leinster (%)	28.7	35.3	6.6***
Munster (%)	25.6	23.6	-2.1***
Connacht (%)	10.6	9.1	-1.5***
Ulster (%)	4.9	3.2	-1.7***



## 5. Concluding Thoughts (1)

- The energy intensity of borrowers is a growing risk channel for the banking sector.
- Green mortgages provide lower interest rates on energy efficient properties, thereby creating an incentive for borrowers to invest in energy-saving technologies.
- Over time, the gradual decarbonisation of the mortgage book will lower energy-related credit risk in the banking sector.
- Efficiency improvements also improve bank collateral positions, with prior research showing a clear energy efficiency premium in property sales.
- This relationship could intensify with rising energy prices and growing environmental concern.
- Energy efficiency variables are, however, rarely available in credit registers, both in Ireland and internationally.
- This Note provides a simple methodology to partly remove this data gap.



## Concluding Thoughts (2)

- We show that green mortgages represent a growing share of the Irish market, and now account for about a third of lending.
- There are differences in borrower, loan and property characteristics of green versus non-green mortgages.
- In particular, we find that green mortgage borrowers have higher income, larger mortgages and buy higher-value properties.
- We also find a higher green uptake for semi-detached properties and for those located in the Leinster region (excluding Dublin).
- The green mortgage share of new properties is, however, considerably lower than expected, with 44 per cent of those who could qualify not availing of a green mortgage.
- The lower green mortgage uptake among low-income borrowers is particularly noteworthy.
- Previous research suggests that lower-income households are more vulnerable to climate-related energy price rises (Adhikari, et al., 2023).



# Appendix A: Green BOI [Back](#)

Fixed-Term	LTV	Other Conditions	Old rate: July 2019 %	Old rate: Oct 2021 %	Further reduction March 2022 %	Old rate: Nov 2022 %	Current rate: 31 Mar 2023
1 or 2	<=60%		2.70	2.60		3.60	4.10
3 or 5	<=60%		2.80	2.70		3.70	4.20
10	<80%		3.10	3.00		4.00	4.50
10	>80%		3.20			4.20	4.70
5	<=60%	HVM >300K	2.30	2.20		3.20	3.70
4	<=60%	HMV>300K		2.00	1.90	2.90	3.40
7	<=60%	HMV>300K		2.25		3.25	3.75
Fixed-Term	LTV	Other Conditions					Current rate
2	<=50%	BTL					5.95
2	50-75%	BTL					6.19
5	<50%	BTL					6.10
5	>50-75%	BTL					6.30

- As at 31 December 2022, €3.8 billion (2021: €1.8 billion) of new green mortgage lending has been drawn down by borrowers, with green mortgages accounting for approx. 50% of total RoI mortgage lending in 2022. (source - **BOI Annual Report 2022**).



# Green Mortgage % AIB / EBS/ Haven

AIB	Fixed-Term	LTV	Other Conditions	Old rate: Nov 2019 %	Old rate: March 2021 %	Old rate: Oct 2022 %	Current rate: 30 June 2023
	5	<=50%	PDH	2.25	2.10	3.65	Green rates remain unchanged despite 45-70bps increase in non-green 5 year fixed rates, widening the discount offered for green rates
	5	>50%<=80%	PDH	2.35	2.15	3.75	
	5	>80%	PDH	2.45	2.25	3.85	
EBS	Fixed-Term	LTV	Other Conditions	Old rate: Feb 2022 %	Old rate: Nov 2022 %	Old rate: Mar 2023	Current rate: 30 June 2023
	4	N/A	PDH	2.10	3.60	3.75	Green rate remains unchanged
Haven	Fixed-Term	LTV	Other Conditions	Old rate: Jul 2021 %	Old rate: Feb 2022 %	Old rate: Nov 2022 %	Old rate: Feb 2023 %
	4	N/A	PDH	2.15	2.00	3.00	3.65
							Current rate: 30 June 2023
							Green rate remains unchanged

- "We closed out 2022 with green and transition lending comprising 26% of Group new lending. This includes our Green Mortgage lending, which accounted for 28% of our overall mortgage lending." (source - [AIB Annual Report 2022](#)).



# Green Mortgage % UBIL & PTSB

UBIL	Fixed-Term	LTV	Old rate: Oct 2020 %	Old rate: 2022 %	Current rate: Nov 2022 %	
	4		2.40			
	4	<=60%		2.25	3.00	
	4	<=80%		2.35	3.10	
	4	<=90%		2.45	3.20	
PTSB – New business	Fixed-Term	LTV	Other Conditions	Old rate: April 2022 %	Old rate: Jan 2023 %	Current rate: June 2023 %
	5	<=60%	HVM <250K	2.80	3.40	4.15
	5	60-80%	HVM <250K	2.80	3.50	4.25
	5	80-90%	HVM <250K	2.80	3.75	4.50
	5	<=60%	HVM >=250K	2.35	3.20	3.95
	5	60-80%	HVM >=250K	2.35	3.30	4.05
	5	80-90%	HVM >=250K	2.65	3.55	4.30

