Energy efficiency and the housing market

The social impacts of energy efficiency policies in the housing sector

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Retrofitting is a practice that fuels hope to create multiple benefits

POLICY FACTSHEET

DEEP ENERGY RETROFITS AS A SUSTAINABLE SOLUTION

Multiple benefits:

- Avoiding illness and death incidents caused by cold homes
- Higher indoor thermal comfort
- Job creation
- Social inclusion (e.g. by rehabilitating poor districts)
- Reduced energy costs
- Reduced CO_2 emissions

- In existing housing markets, low-income households tend to cluster in the lowest quality housing.
- **Why then would we assume that after retrofitting, low-income households would in the long NOT end up in low quality housing again?**

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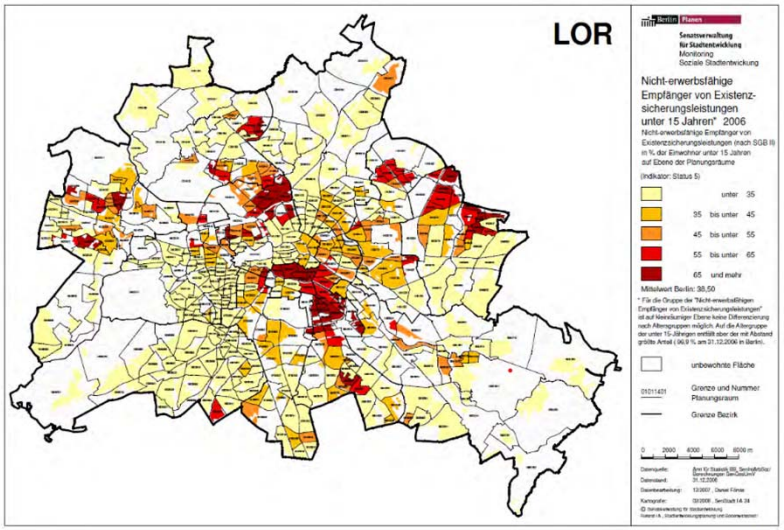
Interplay of retrofitting and residential segregation

- Residential Segregation is the uneven distribution of social groups in urban space
- Segregation is problematic for a lot of reasons, i.a. because the poor tend to cluster in substandard housing
- Segregation research of the past 60 years has revealed a set of drivers leading to the uneveness of the distribution of social groups



Quelle: Senatsverwaltung für Stadtentwicklung und Wohnen 2007.

Supply of housing

Demand for housing

Welfare state regulations and support

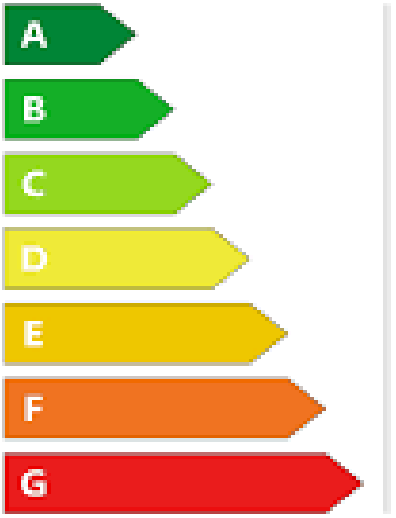
Energy efficient housing is more expensive

- The investors perspective: a „price premium“ -

Supply of housing

- Hyland et al. (2013), Energy Economics, **Ireland**

*“Our results show that **energy efficiency is capitalised in house prices**: relative to obtaining a D energy rating, an **A-rated property receives a price premium of 9.3%**, and a B rating increases the price by 5.2%. At the other end of the scale, receiving an **F or G rating reduces the price by 10.6%** **relative to D-rated properties**, ceteris paribus.” … “We find that while **the magnitude of the effect is weaker in the rental market**, a positive relationship still holds between energy ratings and rental prices.”*



Energy efficient housing is more expensive

Citation	Country	Property type	Transaction type	Major finding
Gilmer, 1989	USA (Minnesota)	Residential	Sales	Energy-efficient labels shorten search times
Di…		…idential	Sales	Efficiency improvements increase expected sales price
			…ales	House prices increase by 1.2% in 2005 and 1.91 in 2006 for each increase along the efficiency scale
			…s	Buildings certified as "green" receive approx. 3.7% sales premium
			…ales	"Green-marketed" residential projects receive an initial sales price premium, but resell or are let at a price discount
Cajias & Piazolo, 2012		Reside…	Sales and …entals	A 1% increase in energy efficiency increases rents by 0.08% and market value by 0.45%
Kahn & Kok, 2012	USA (California)	Residential	Sales	Homes labelled as "energy efficient" transact at a premium of 9%

In sum:

- private housing market actors invest in enenergy efficiency because they seek a return on investment
- capital investment into energy efficiency pays off (with few exceptions)

Supply of housing

Energy efficient housing is more expensive

- The residents perspective:
housing prizes rise above affordability -

Supply of housing

Hannover, Germany

„For Hans Freiwald, the energetic retrofit leads to a **rent increase of 1.200 Euro per month** – on top of the 700 Euro basic rent he did pay already. This is an increase of ca. 10 Euro per squaremeter.“

national TV documentation (ARD, panorama3, 18.11.2014)

Energy efficient housing is more expensive

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Supply of housing

last tenant of Kopenhagener Straße 46, (foto), activist against energetic retrofitting

Berlin, Germany

Energy efficient housing is more expensive

- The residents perspective:
housing prizes rise above affordability -

Supply of housing

Position	amount in Euro
Net rent before retrofitting	644,23
Heating and Utilities	399,87
Cost increase for energy retrofitting measures	1,436,93
Cost increase for other modernisations	446,63
New overall rent	2,927,66
rent increase	**280%**

Berlin, Germany

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Supply of housing

German building law

➔ **Landlord can add 11% of investment costs for modernization to the rents annually**

Berlin, Germany

Simple example:

- 10 flats in a house, landlord invests 100.000 Euro
- 11% = 11.000 Euro, divided by 10 parties = 1.100 Euro rent increase per flat annually, ca. 91,6 Euro monthly
- Return of investment after 10 years exeeds investment costs

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Supply of housing

German building law

➔ **Landlord can add ~~11~~ 6-8% of investment costs for modernization to the rents annually**

Berlin, Germany

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Energy efficiency policies can make existing rent gaps even more attractive

Welfare state regulations and support

Germany

Policy type: mobilizing private investment

A policy designed to stimulate private investment into inner city locations in the 1970s

It makes an existing rent gap even more attractive in prime locations

(not in shrinking regions in the peripheries)

foto: www.wirtschaftswoche.de

Energy efficiency policies can make existing rent gaps even more attractive

Policy type: ‘Urban Renewal Programme’, incl. low carbon objectives, sourced from EU funds

Welfare state regulations and support

Gdansk, Poland

The regeneration of the neighbourhood of Letnica as a case of „low-carbon-gentrification“

Bouzarovski, Frankowski, Tirado Herrero (2018)

TABLE 1 Displacement types in Letnica, with numbers of households involved

Group	Type of Displacement	Estimated Numbers
Returnees to the district	Temporary—absence from homes during renovation	45 households
	Relocation to new TBS housing in Letnica	22 households
Moved elsewhere	Indirect displacement—households who decided to leave Letnica for different reasons (residential preferences, increased housing costs etc.)	43 households, 13 of whom were housed in newly-built municipal apartments; the rest moved to older municipal housing
	Direct displacement—rental debtors moved to social housing outside Letnica	25 households

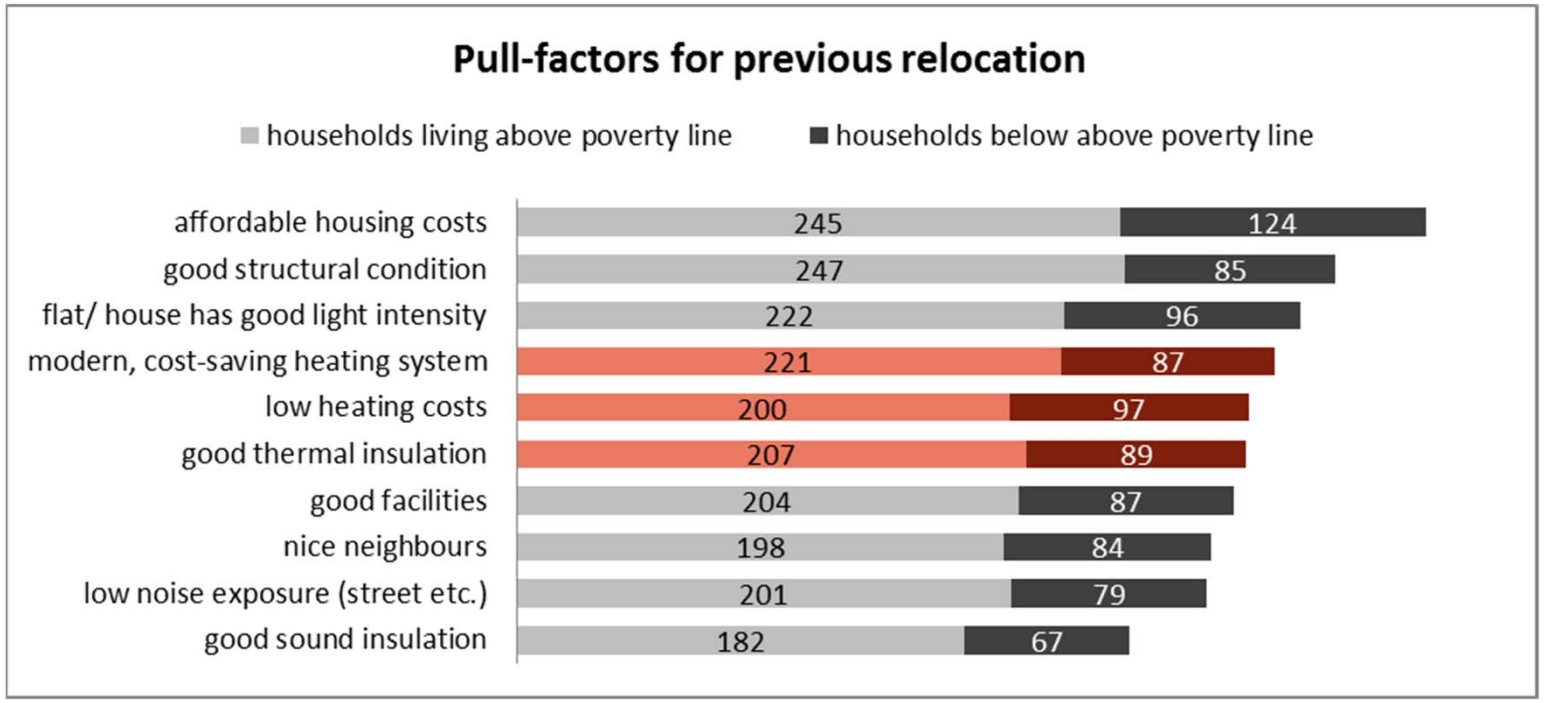
SOURCES: authors' own calculations based on secondary evidence and Grabkowska *et al*. (2015)

Energy efficiency becomes prominent in housing preferences

Demand for housing

Delitzsch, Germany

Energy efficiency becomes prominent in housing preferences



Demand for housing

Delitzsch, Germany

Energy efficiency becomes prominent in housing preferences

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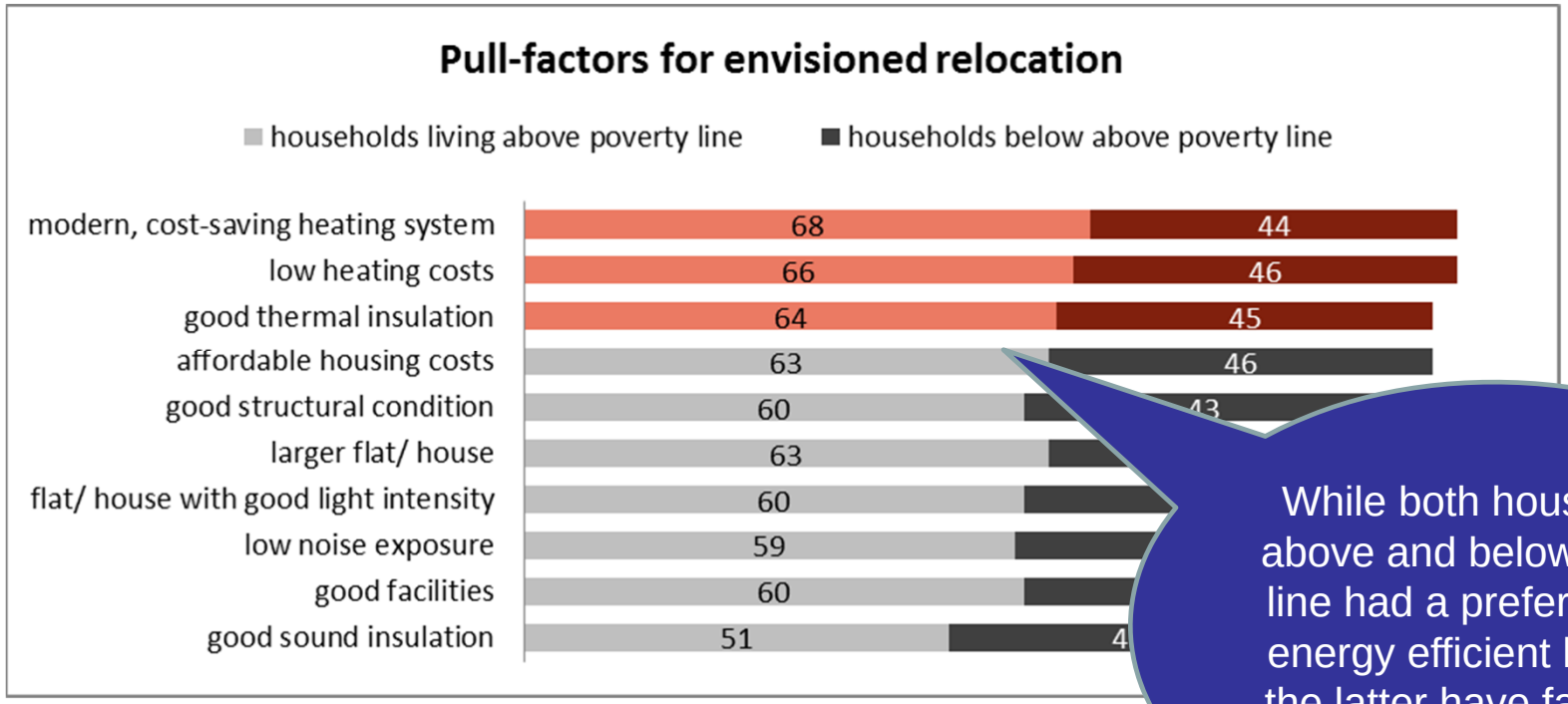
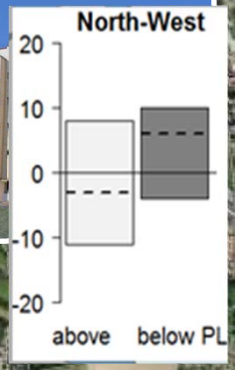
Demand for housing

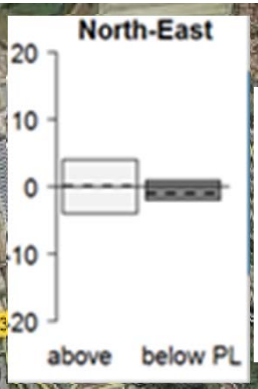
Delitzsch, Germany

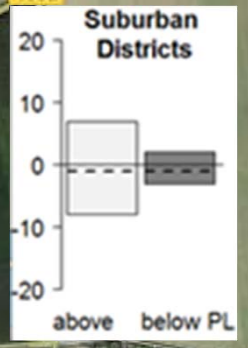


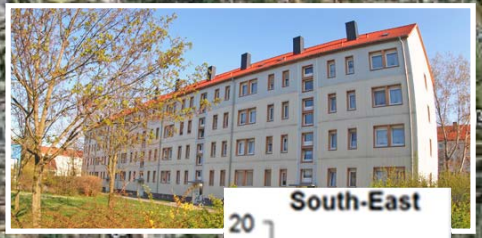
While both households above and below poverty line had a preference for energy efficient housing, the latter have far limited choice!

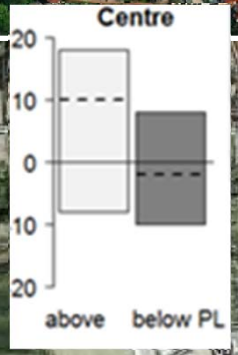
Relocations within the past five years (2012)

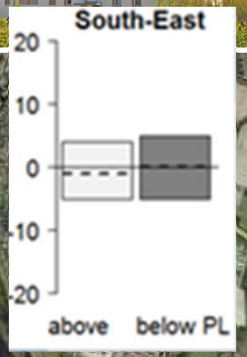


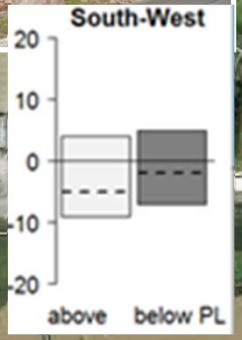












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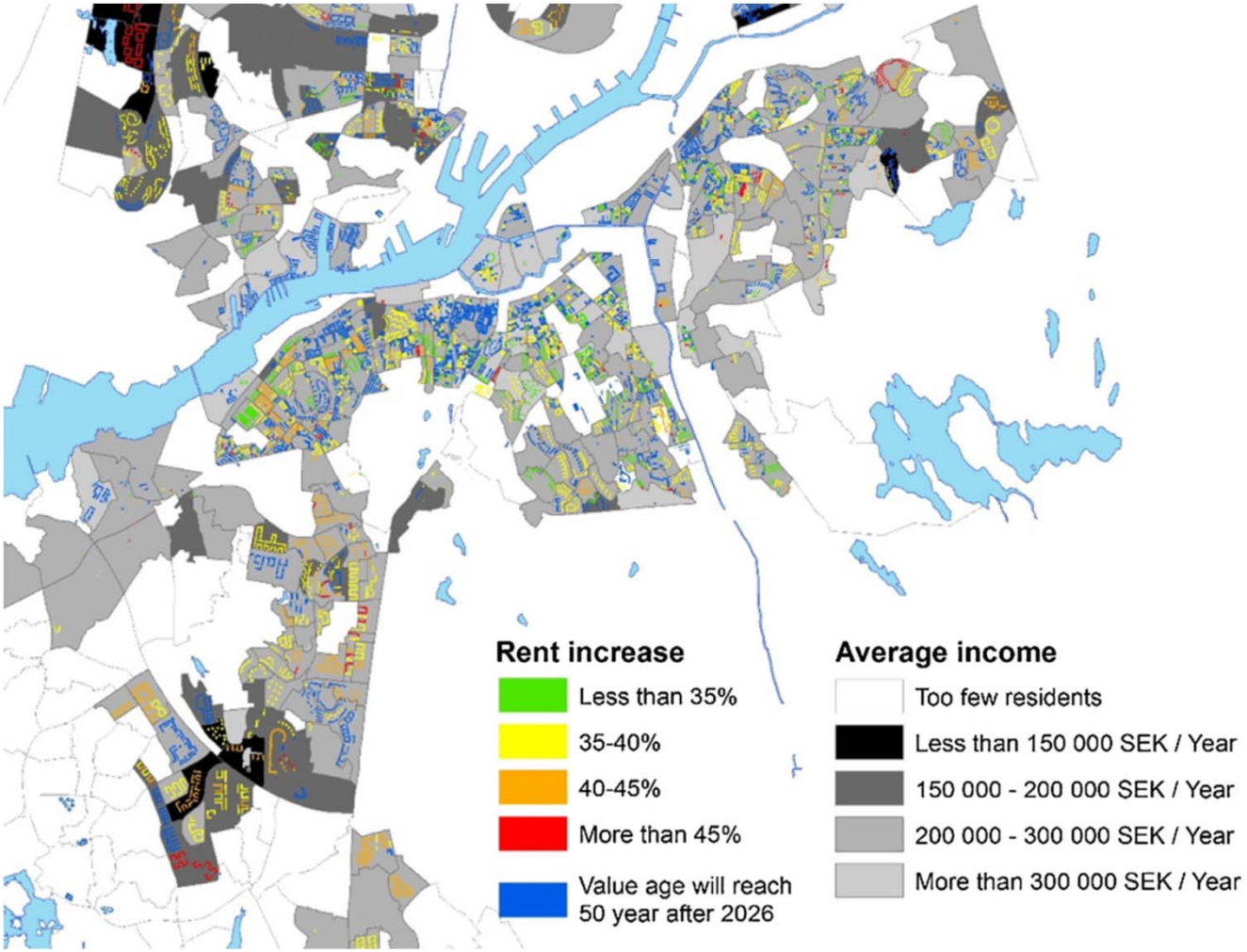
Potential segregation effects of energy retrofitting



Gothenburg, Sweden

Mangold et.al. 2016

Potential segregation effects of energy retrofitting

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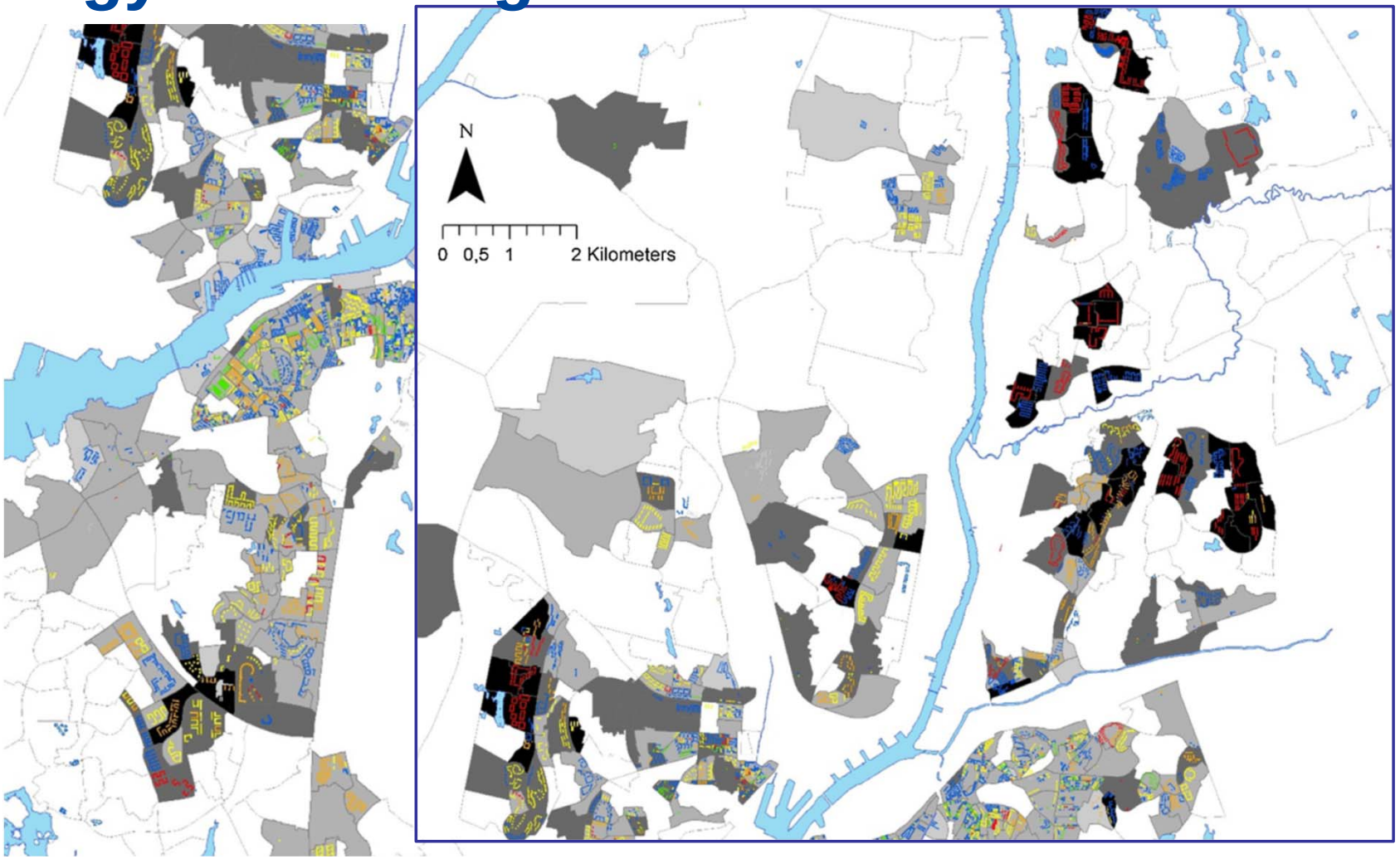
Gothenburg, Sweden



Energy efficiency as potential driver of residential segregation

Supply of housing

- Increase of housing prices / rents after retrofitting
- Decrease of affordable housing stock in cities
- Speculative investment in private stock, attempts of renoviction

Demand for housing

- Energy efficiency becomes a factor in housing preferences (push and pull factor)
- Restrictions in access to retrofitted and high-efficiency housing (indirect displacement)
- Forced mobility through renovictions (direct displacement)

Welfare state regulations and support

- Climate mitigation policies and housing policies (can) interact to the disadvantage of households
- Funds for retrofitting can be used in state-led gentrification

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Good practices that manage to get around these dynamics?

Good practices: agency (and public funds)

Brno, CZ, 2008

District mayor, green party, turned Nový Liskovec into low-energy neighbourhood with EU (Urb Act) funding

Good practices:
Public housing company (and public funds)

- Refurbished inner city prefab housing
- Won the silver medal in a national competition
- Received funding from national model project funding scheme

Leipzig, Germany

Prize in 2015 after retrofit:

e.g. 60 qm for 330,- Euro net rent
(460,- Euro incl. Utilities)

inhabitant: „It is 10,- Euro more now, that is no problem“

source: Immobilienscout24.de, 19.06.2015, own interview

Nearly good practice: Cooperative, non-profit, (no public funds)

Estimated energy use after retrofit

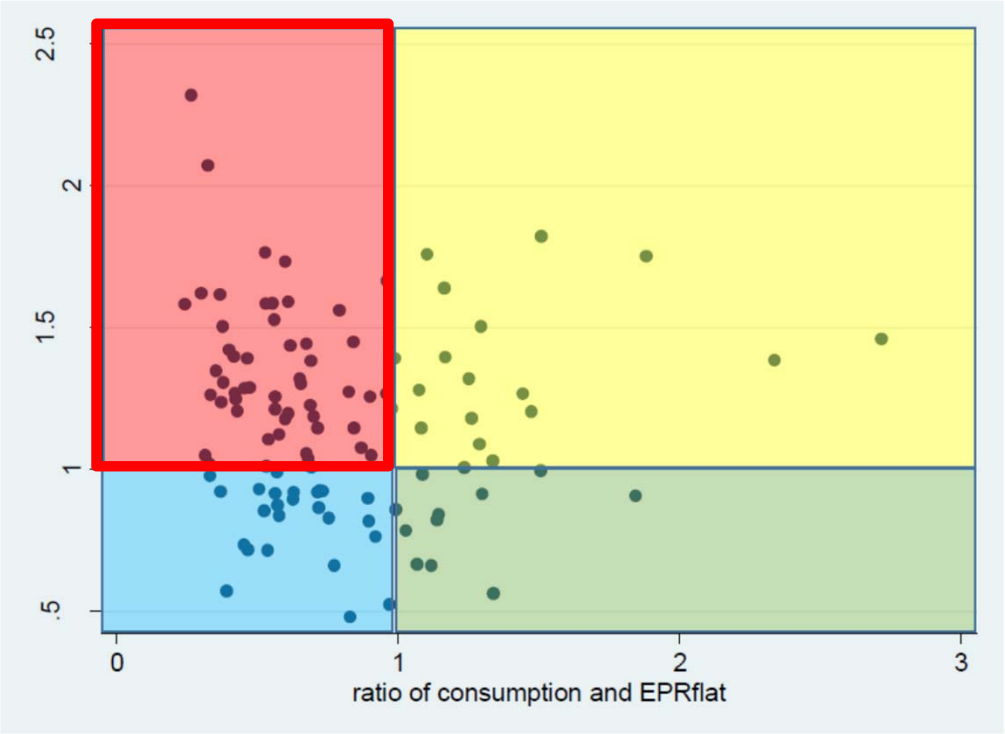

Figure 3: Comparison of the heating consumption relative to the flat-specific heating demand and the heating costs after the retrofit including a rent increase relative to the heating costs prior retrofit

Development of housing costs after retrofit in a housing cooperative

Munich, Germany

Costs for rent incl. Utilities after retrofit

source: Wolff, A. und Weber, I. 2017: Who bears the cost?

Conclusion

- **Energy interventions are a potential driver for residential mobility.**
- **Good practices require agency of owners, companies and stakehodlers and they require public funds. (but even here, long-term effects are yet unknown)**
- **Technological solutions affect buildings, housing markets moderate who can profit from the better technology**

➔ The role of urban space and segregation dynamics needs more attention to avoid that energy efficiency becomes just a new frontier of gentrification and segregation. Only then can a renovation wave be just and inclusive.

Call for Action on a Right to Energy

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European Energy
Agenda Co-Creation
and Knowledge Innov

Call for Action

Energy poverty will increase with the COVID-19 crisis. Time for a right to energy!

What if, when lockdowns were announced, you could not switch on your TV to check the news, not video call your family nor stay warm at day and night? What if every time you cooked a hot meal, or your child went online for school, you would worry because of the upcoming energy bill? What if, as a consequence of the economic slowdown, you lost your job?

put in place in cooperation between the government, the regulators and the utilities.

Housing quality is one of the most pressing issues. To ensure all citizens a decent place to live should be a priority in the recovery plan. Housing quality goes beyond efficiency. Yet, there is an urgent need to accelerate thermal retrofitting while keeping housing costs affordable for households. The proposed Renovation Wave should be fair and inclusive, to guarantee that even the poorest live in efficient homes. They also should have access to renewable energy and energy-efficient appliances at affordable prices. A minimum energy rating should be required for all dwellings, in particular those on the renting market (as proposed in Directive (EU) 218/844).

A solidarity pact with energy poverty will contribute to an improved green and social resilience of European societies that should consider energy as an essential service and a common good, as are healthcare, education and housing.

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