

Lessons from fuel poverty: how spatial data can help to identify vulnerable communities.

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Overview

- Context of fuel poverty in NI
- Mapping variables to identify risk
- Helping 'at risk' neighbourhoods
- Health impacts from "Affordable Warmth"
- Future thoughts

NI Context

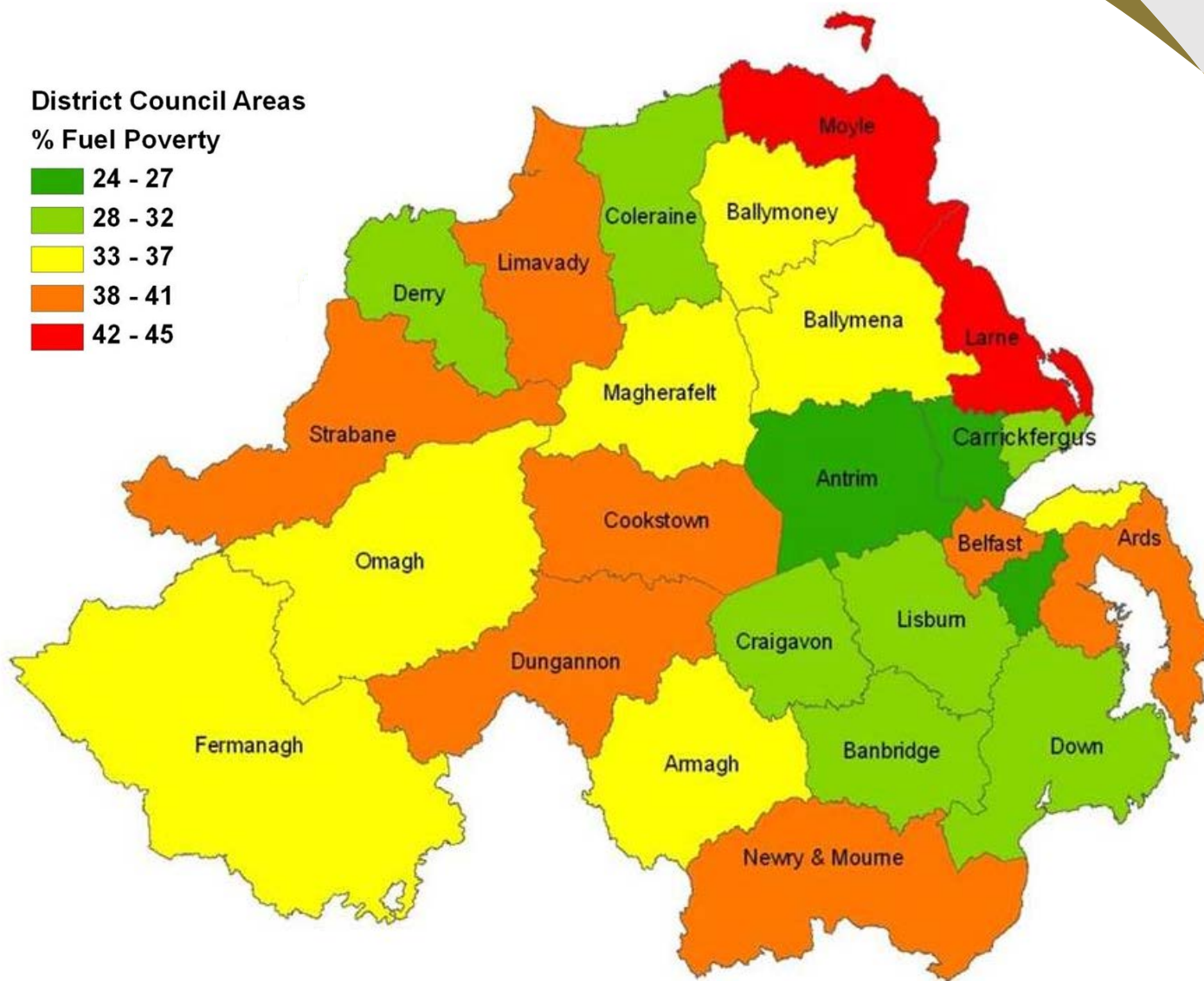
- ‘Warm Homes’ main approach for helping fuel poor (2001+)
- Energy efficiency measures provided for specific groups:
 - “Passport Benefits” e.g. Pension Credit
 - “Vulnerable” occupants e.g. >60, <16, disability
- Insulation (L/CW/HWT); conversion to oil/gas; energy efficiency advice; BEC

NI Context

- Relied largely on self-referral (capability)
- Many 'at-risk' people missed e.g. working poor
- Approach ignored building efficiency – no specified level of improvement; no min standard
- Driven by annual targets (e.g. 2007/08 target of 10,000 retrofits)
- Reliance on data from NIHCS (<1% sample; 2016 – 3,000)

Area-based targeting

- Census zones have comprehensive data available (~125 homes) that enable area-based targeting
- Datasets enable targeting at regional scales
- Geography provides a framework to integrate data and identifies areas for interventions
- Geographic Information Systems (GIS) facilitate this improved targeting approach



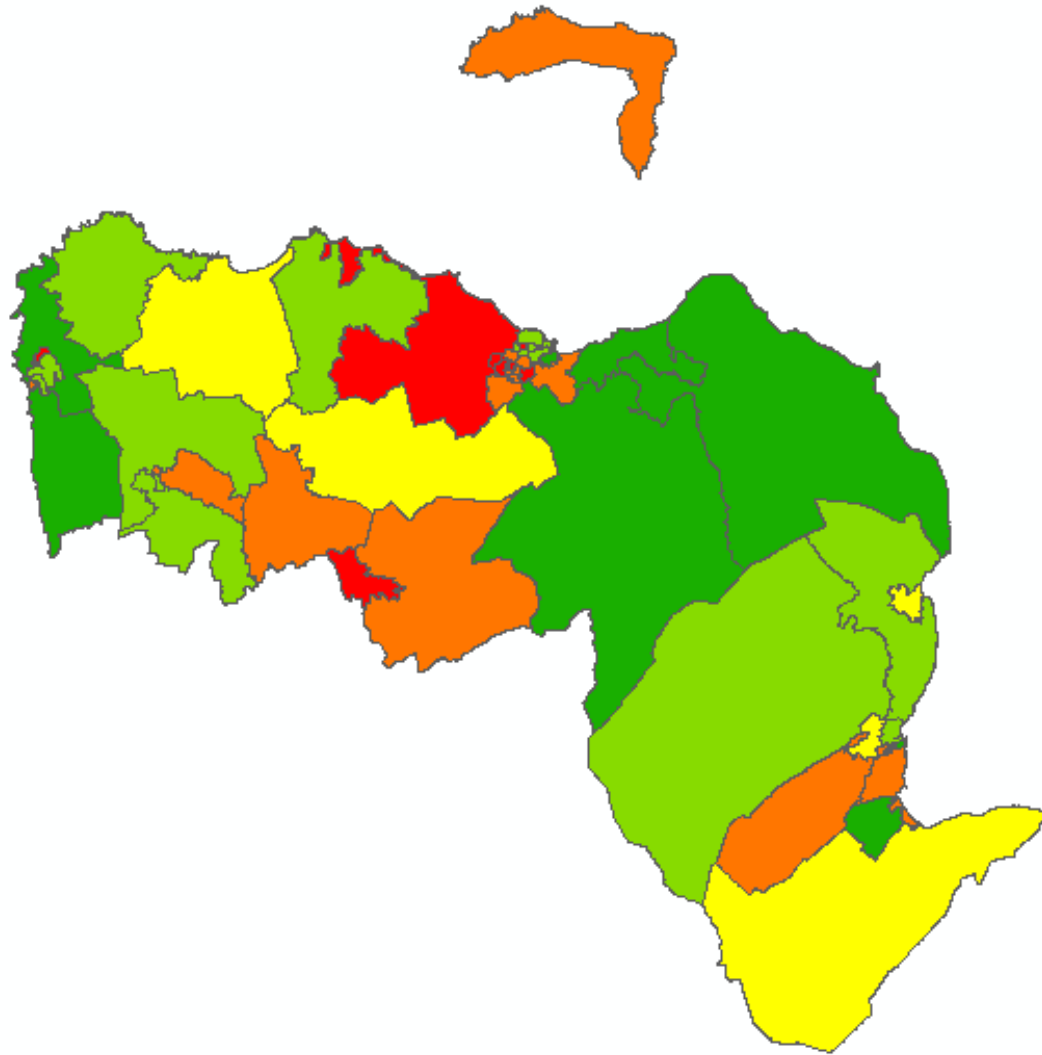
Moyle District
Council Area



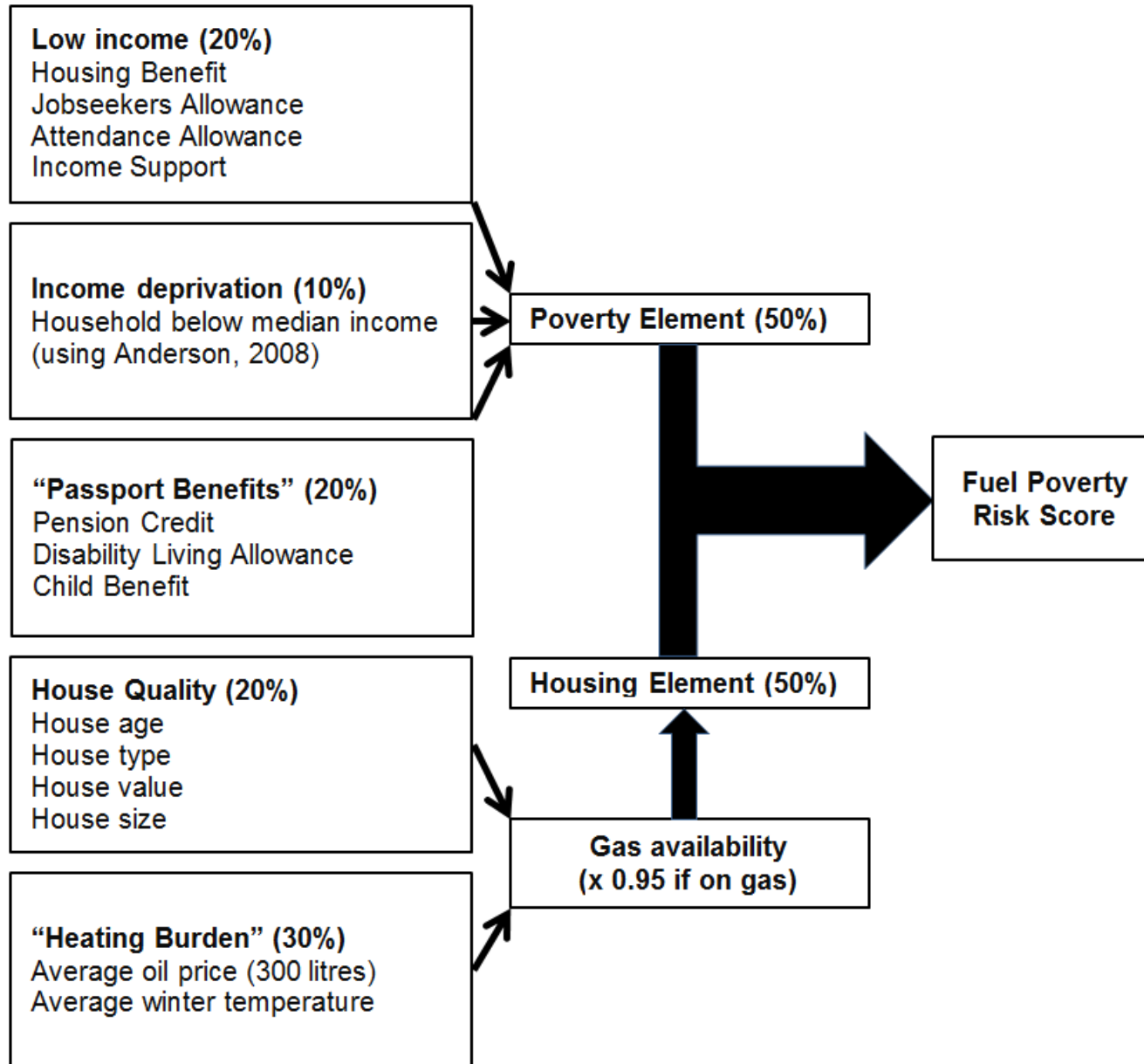
Ward level



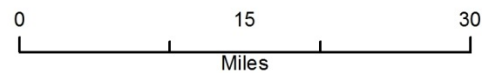
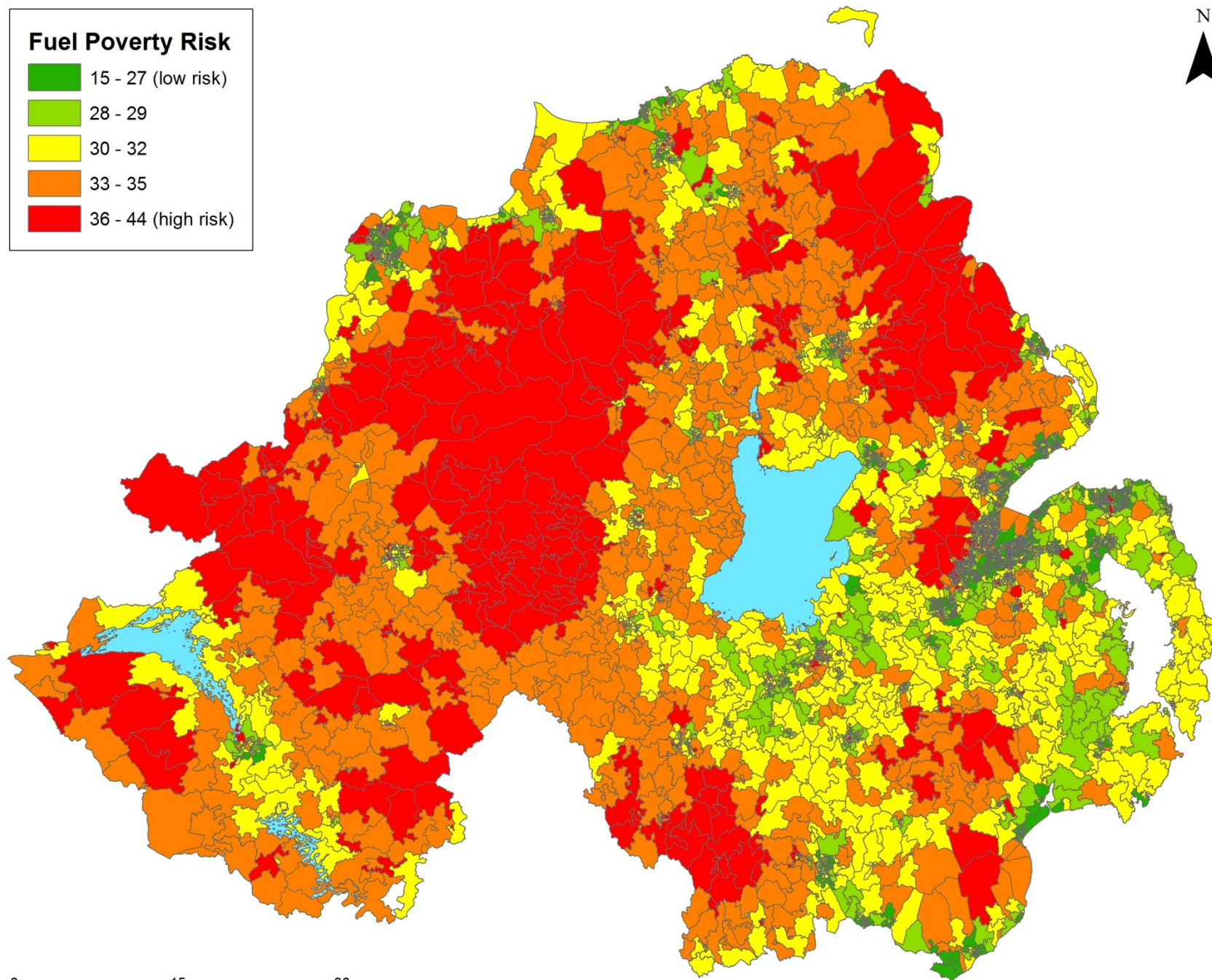
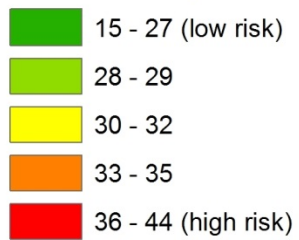
COA level



Area-based targeting ^[1]



Fuel Poverty Risk





- Small village, hamlet & open countryside
- 74% of homes built > 2000
- 65% of homes are detached
- Average SAP score = 60.5
- Higher than average price of £360 per 900 litres of oil
- Gas is unavailable
- Low poverty score
- Higher temperature area
- 20% <16 and 20% >65+ (2011)

Area-based targeting



Area-based targeting

- Funding provided (OFMDFM and DSDNI) to work with 19 Councils to verify model
- 2,145 households surveyed by Council staff
- Determine (1) actual levels of fuel poverty and (2) eligibility for assistance
- GIS area-based model accuracy was >80%
- Majority of households in areas were fuel poor, with many in severe fuel poverty.

Assisting vulnerable homes

- Address lists sent to all 11 local Councils
- Council staff assess eligibility
- > £20,000 income - no retrofit work
- < £20,000 income - BEC, referred to NIHE for survey, suite of measures installed based on building inspection, energy efficiency advice
- Homeowner arranges contractors to complete work – withdrawal can occur at any time.

Assisting vulnerable homes

2014 – 2018

- >16,000 homes had energy efficiency measures
- Major retrofits (>£1,800) completed in 13,557 homes. Almost 86% of retrofits were major
- Significant shift from *Warm Homes* (2002-2009) which showed 49% of retrofits were minor (<£600)^[1]
- Average grant value of > £4,000 per home

Health Impact Assessment ^[2]

2014 – 2018

- Approximately 9,000 children (0-15), 27,000 adults (16-64) and 6,000 older people (65+) were assisted (based on UK Census)
- Conservative estimate of >1,000 properties warmer with less damp and mould
- Est. Common Mental Disorders reduced for at least 800 people.

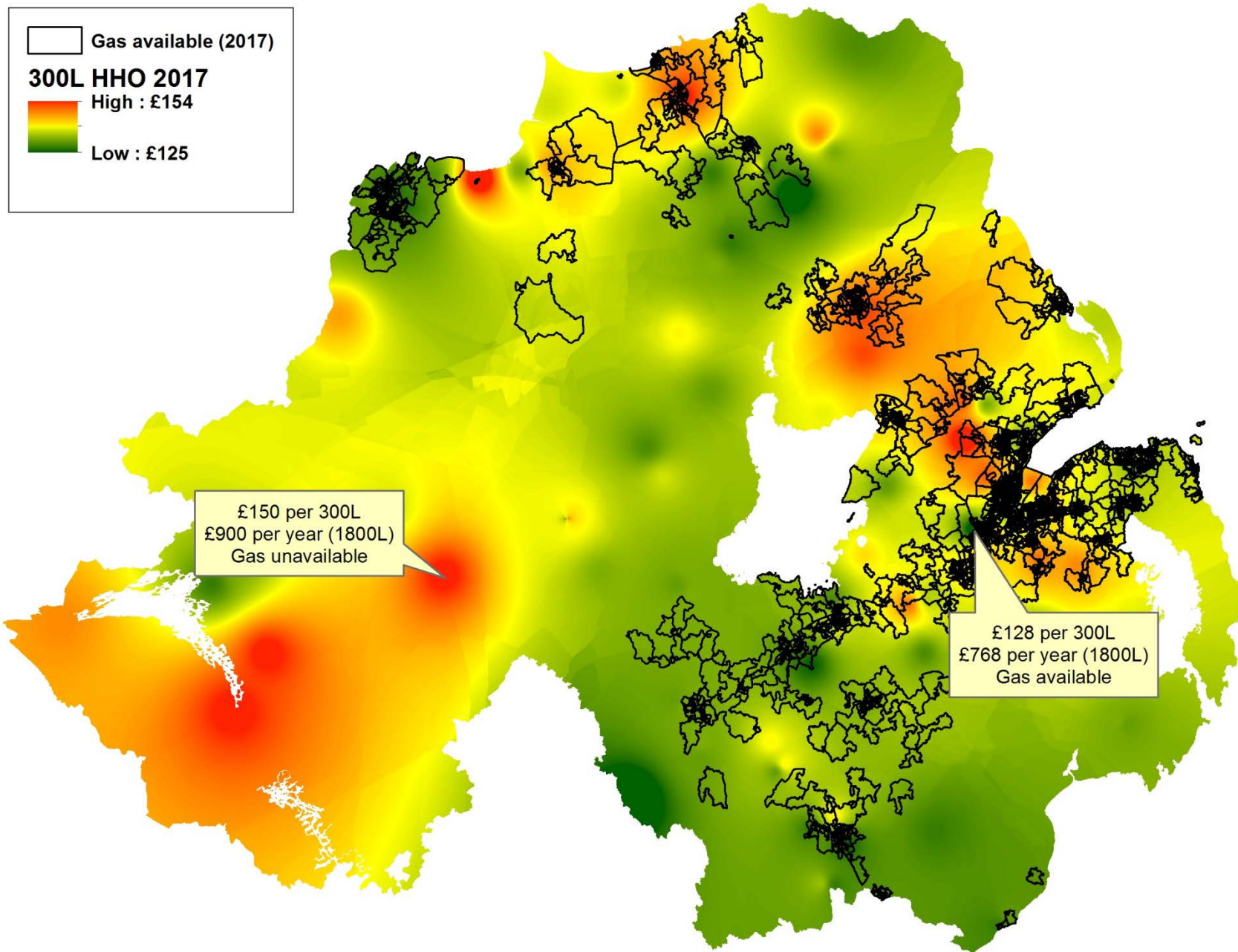
Health Impact Assessment ^[2]

2014 – 2018

- Est. gains in wellbeing at least £93.37 million
- Est. reductions in NHS costs equate to £4.09 million.
- Est. value of improved mental health conditions on increased working days equate to £4.95 million.
- Significant “Social Return on Investment” ^[3]

Future thoughts

- Not just fuel, or energy, poverty.
- Includes food poverty etc
- Similar “variables” (deprivation, benefits etc)
- 2017 AWP update – poverty element; housing element and; vulnerability element (elderly, young, long term illness, disabilities).
- Finding the vulnerable is one thing...

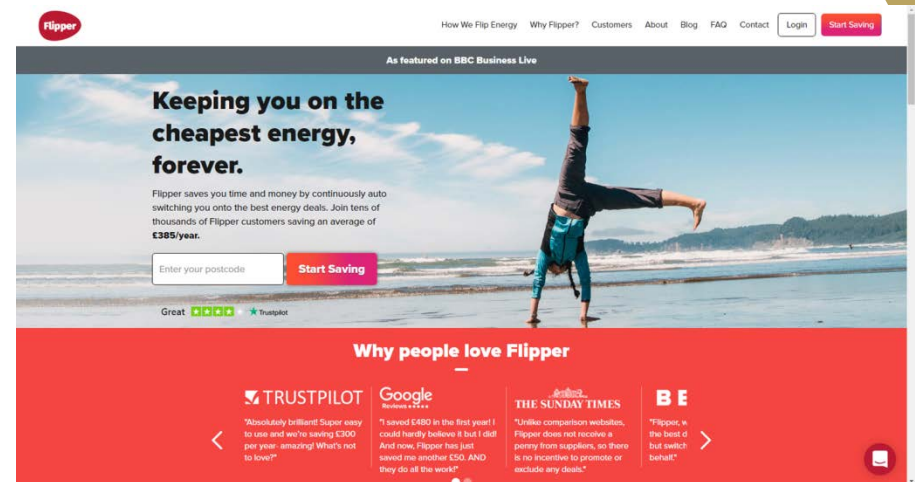


Future thoughts



<https://www.bbc.com/news/technology-2018-02-02/time-second-generation-smart-meters/>

- Need for the 'best' data to create the 'best' models – challenges and opportunities!
- Active strategies
- Involve community/users at all stages of the process – education, suitability etc, ownership
- Regulation



<https://flipper.community/>



<https://www.greenrunning.com/>

Thank you

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References

- [1] Walker, R., Liddell, C., McKenzie, P. and Morris, C. 2013. Evaluating fuel poverty policy in Northern Ireland using a geographic approach, Energy Policy, Volume 63, pp 765-774
- [2] Mckenzie, P., Green, G., Gilbertson, J., Stafford, B. and Cook, S. (2018) A Health Impact Analysis of the Affordable Warmth Programme: 2014-2018, DfC, pp. 1-53.
- [3] WHO, 2017. Roadmap to implement the 2030 Agenda for Sustainable Development, building on Health 2020, the European policy for health and well-being (EUR/RC67/9). Copenhagen: WHO Regional Office for Europe.