



Knowledge Exchange Seminar Series (KESS)

...is a forum that encourages debate on a wide range of research findings, with the overall aim of promoting evidence-based policy and law-making within Northern Ireland



Mapping Fuel Poverty Across Northern Ireland

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Definition

- Term “fuel poverty” appeared in 1979 [1]
- A household is fuel poor when it spends at least 10% of household income on energy services [2]
- “Actual spend” vs “Needs to spend”
- “Needs to spend” was 21% higher than “Actual spend” for England in 2009 [3]
- Figures are higher for Scotland and NI (coldest UK regions) [4]

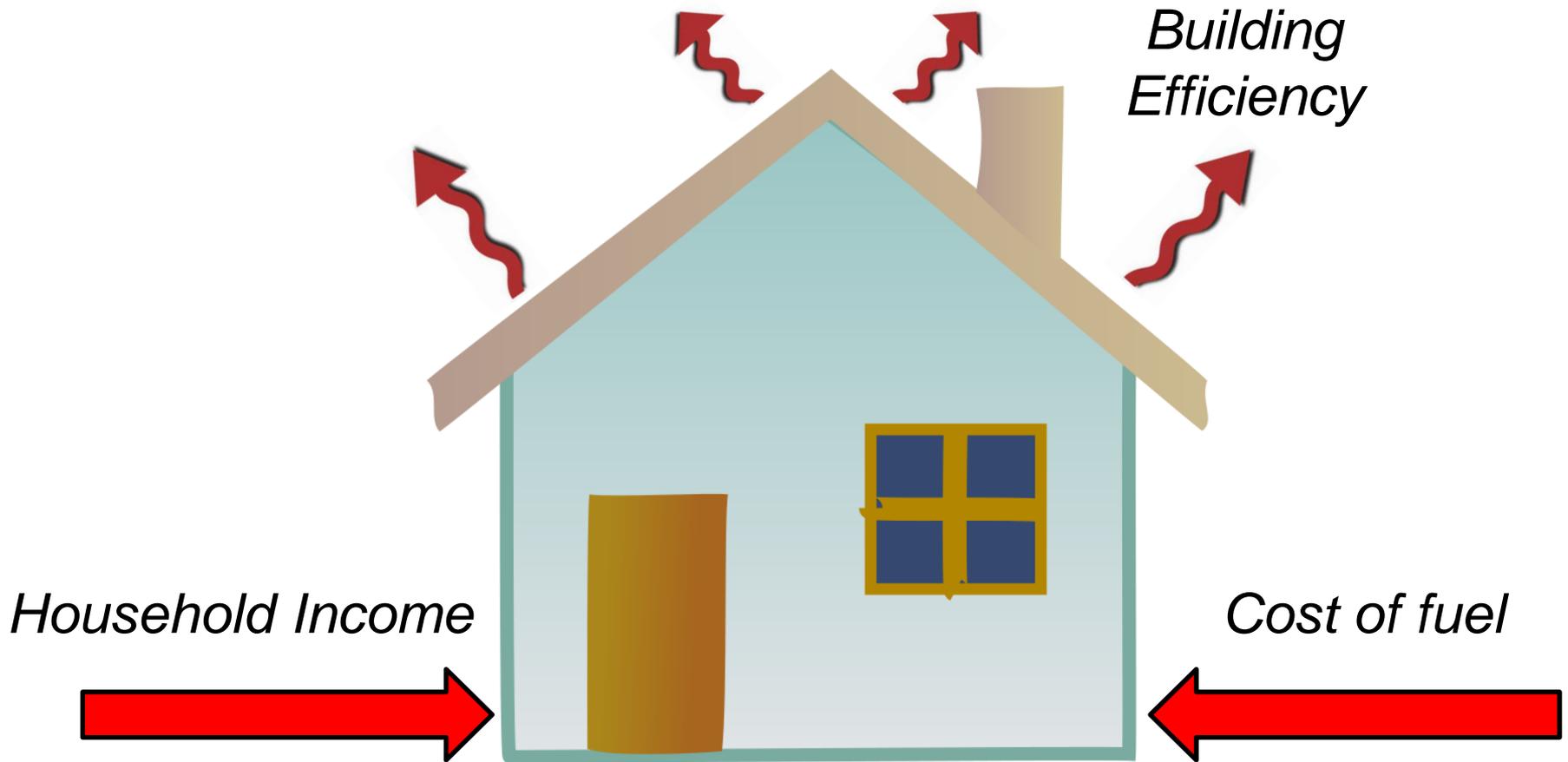
Prevalence

- Fuel poverty is prevalent across Europe
- Homes in Southern Europe (e.g. Portugal and Greece) and Eastern Europe (e.g. Bulgaria and Romania) had high rates of fuel poverty [5]
- Denmark, Finland and Sweden have low rates of fuel poverty [5]
- UK and Ireland have high rates of fuel poverty

Impact

- Fuel poverty has a significant impact on health
- Living in cold, often damp, homes impacts on physical and mental health [7]
- Excess Winter Mortality (EWM) rates are high in cold homes
- Stroke, heart attacks, respiratory illness, arthritis, lower immunity
- Depression, anxiety and “spatial shrinkage”

Causes



Identifying the fuel poor

- Fuel poverty interventions were targeted to specific groups [6]:
 - “Passport Benefits” e.g. Pension Credit
 - “Vulnerable” occupant e.g. >60, <16, disability
- Many at-risk people missed e.g. a 58 year old with no dependent children and no disability
- “Working poor”
- Approach ignores building efficiency

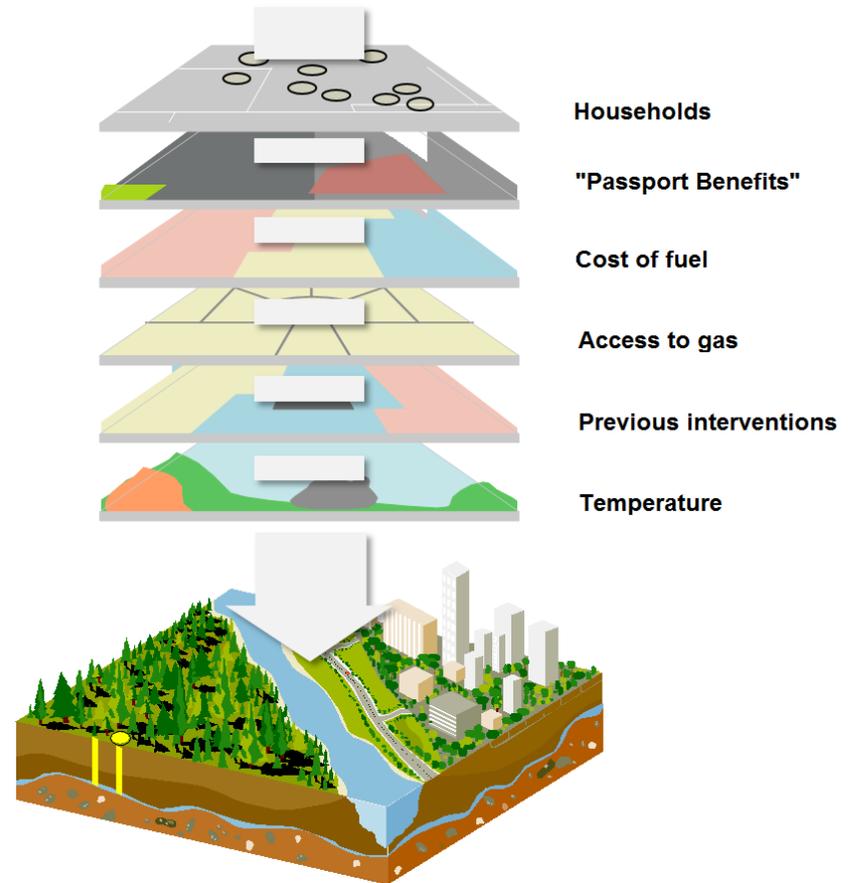
Identifying the fuel poor

- Census zones have comprehensive data available (~125 homes) that enables *area-based targeting*
- Datasets with wide spatial coverage enable targeting across regional scales
- Geography provides a framework to *integrate* data and also shows *where* to provide interventions
- Geographic Information Systems (GIS) facilitate this improved targeting approach



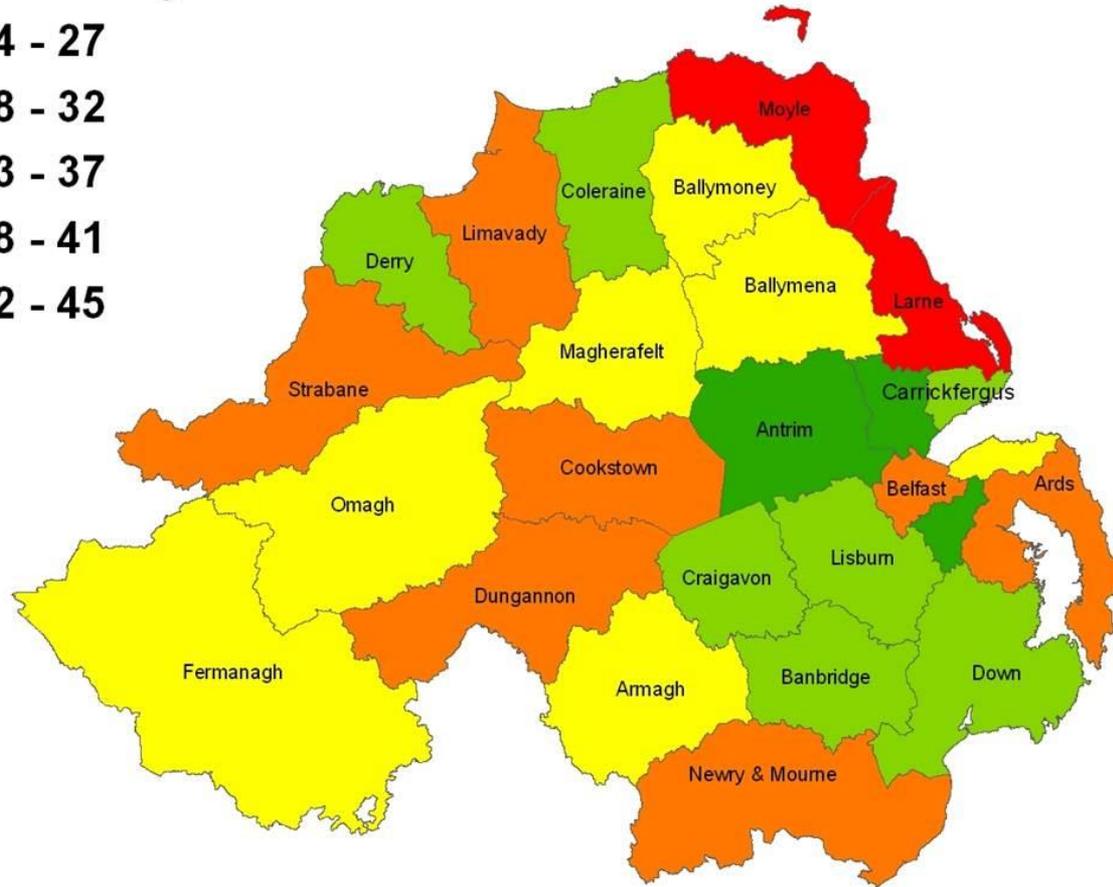
Identifying the fuel poor

- GIS stacks layers of information together to represent complex problems
- Layers are stacked together based on location e.g. postcode, house number, IP address, latitude/longitude
- The final picture provides a greater insight than one layer alone



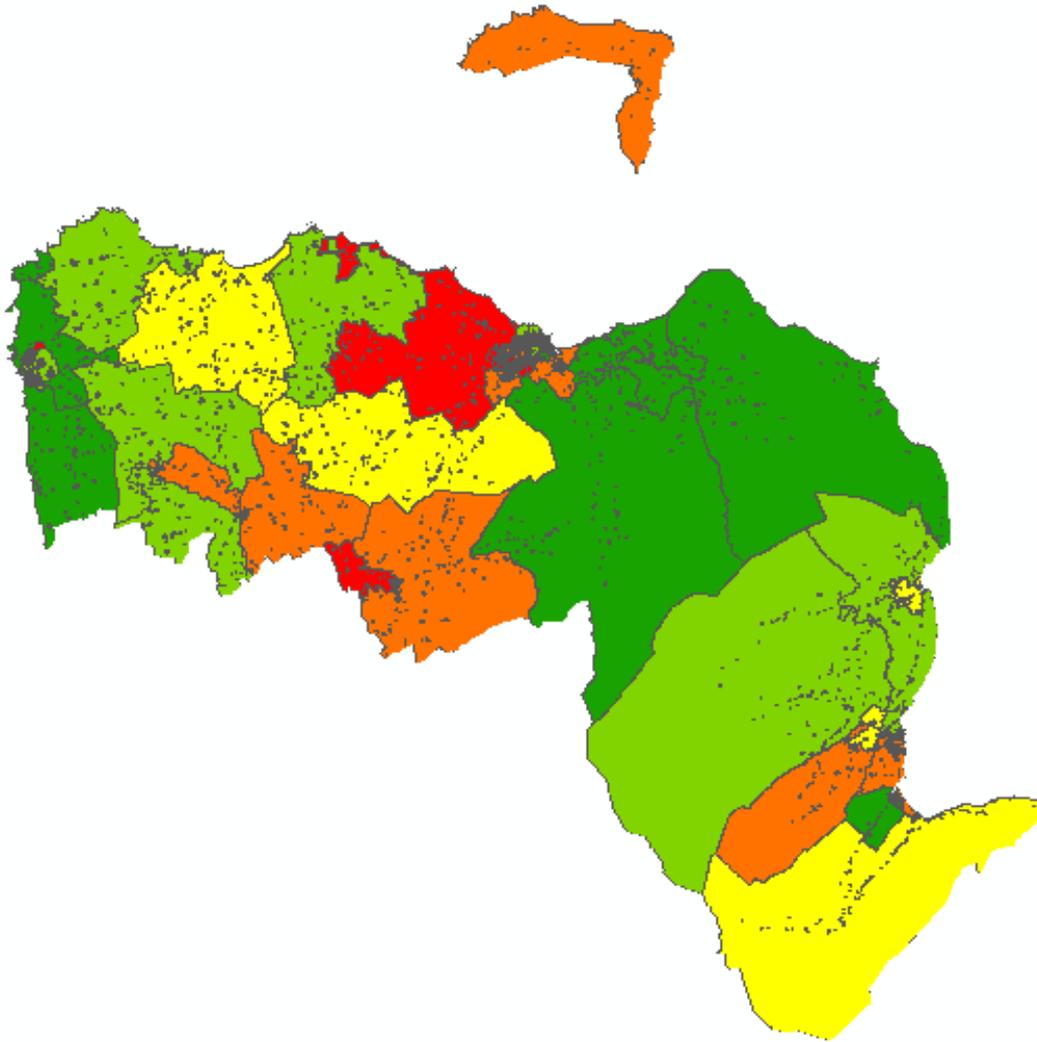
District Council Areas

% Fuel Poverty



Department for Social Development





Moyle District
Council Area



Ward level



COA level



Buildings

Oil price mapping

Prices for
13/Jan/11

| Area | 300 | 500 | 900 |
|--------------|---------|---------|---------|
| Armagh | £175.00 | £277.50 | £482.50 |
| Ballymena | £187.00 | £286.00 | £494.00 |
| Ballynahinch | £182.00 | £278.00 | £491.00 |
| Belfast | £187.60 | £289.34 | £505.30 |
| Coleraine | £187.00 | £287.50 | £497.00 |
| Cookstown | £181.00 | £280.00 | £489.00 |
| Derry | £185.00 | £278.00 | £480.00 |
| Dungannon | £182.50 | £275.50 | £475.00 |
| Enniskillen | £187.50 | £281.33 | £480.67 |
| Omagh | £175.00 | £280.00 | £479.00 |
| Newry | £181.13 | £280.71 | £490.62 |
| Tandragee | £181.00 | £285.50 | £496.00 |

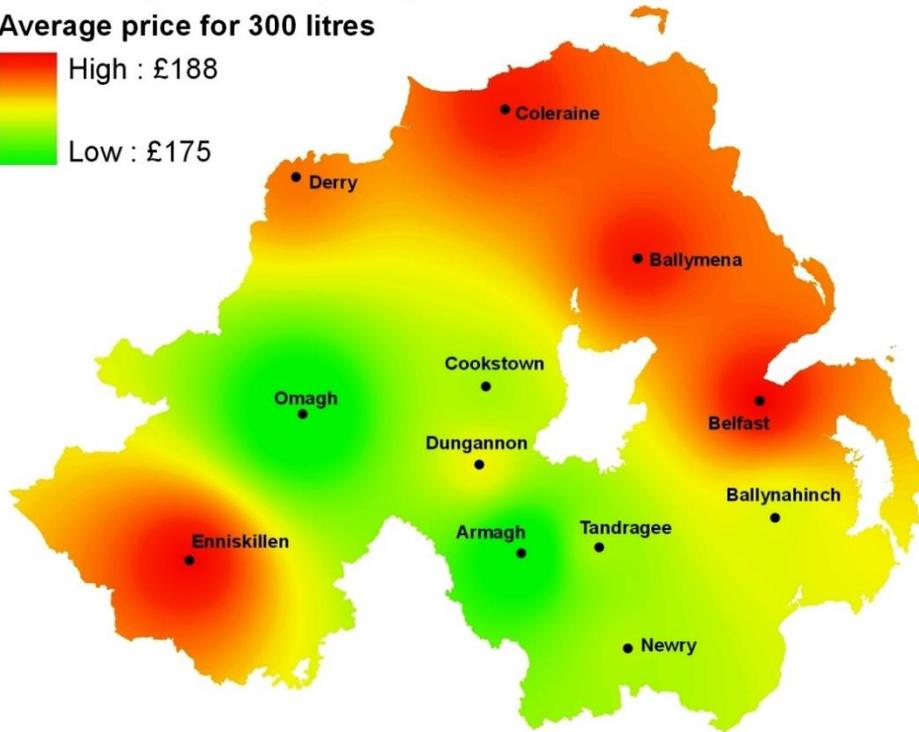


Oil price mapping

- Towns

Oil Prices (13th January 2011)

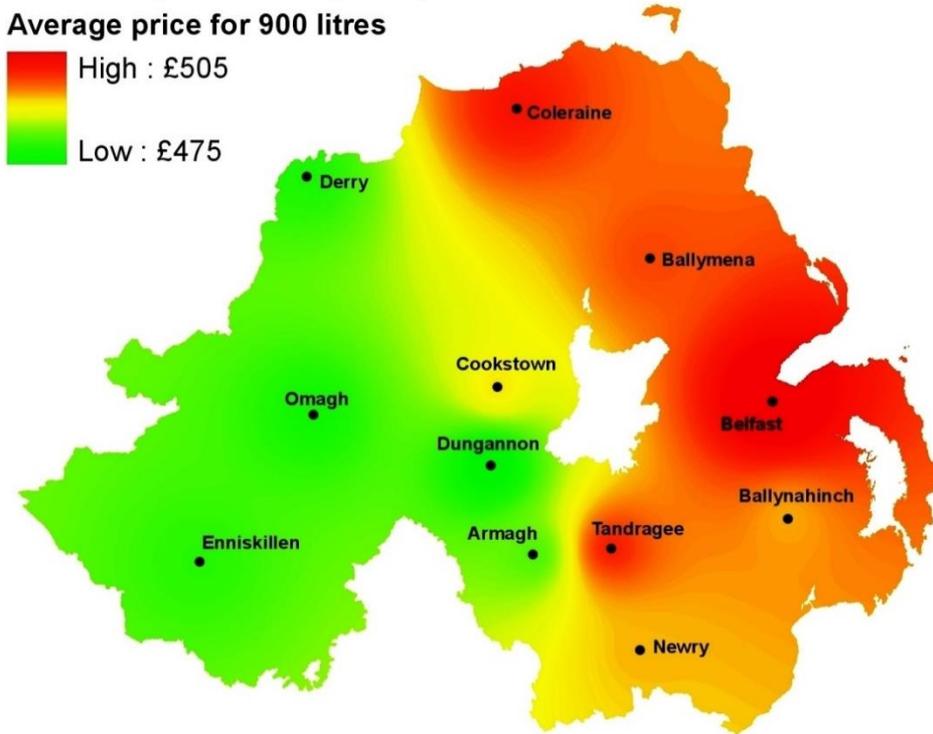
Average price for 300 litres



- Towns

Oil Prices (13th January 2011)

Average price for 900 litres



Northern Ireland Consumer Council



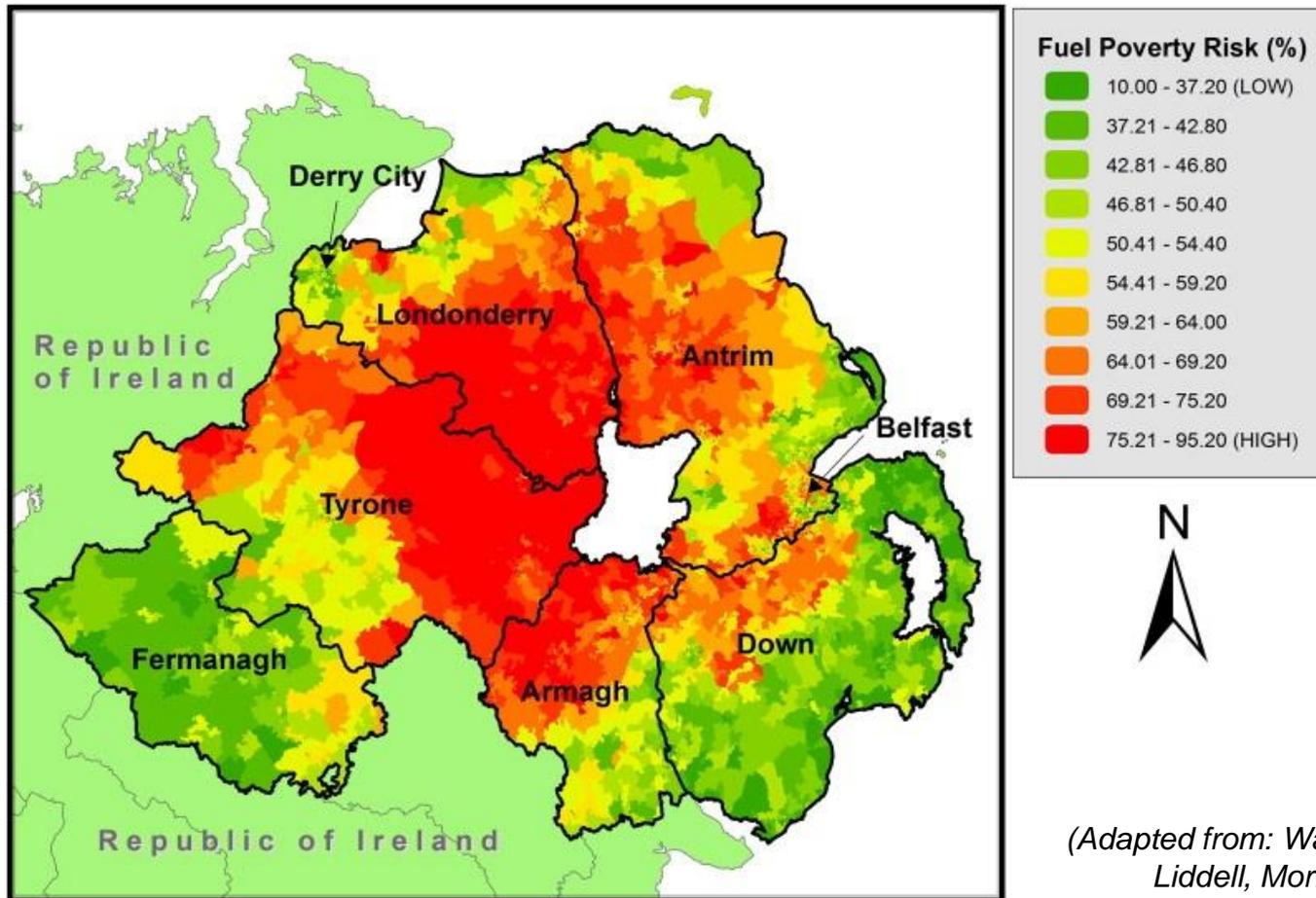


- Small village, hamlet & open countryside
- 74% of homes built > 2000
- 65% of homes are detached
- Average SAP score = 60.5
- Higher than average price of £360 per 900 litres of oil
- Gas is unavailable
- Low poverty score
- Higher temperature area
- 20% <16 and 20% >65+ (2011)

Example properties from Ballywalter Small Area



Approach



Application

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



Potential

- Area-based targeting is now being applied to *food poverty* at UU
- Access to retailers, food banks, cost of shopping basket, deprivation etc
- GIS enables a wide range of variables to be integrated, weighted and visualised to efficiently target assistance and reduce waste
- Rise of “big data” and open government fuels future research



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References

- **[1]** Isherwood, B.C., Hancock, R.M. (1979) Household Expenditure on Fuel: Distributional Aspects Economic Adviser's Office, DHSS, London
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- **[7]** Liddell, C., Morris., C. (2010) Fuel poverty and human health: A review of recent evidence. *Energy Policy*/ 38. 2987-2997





Northern Ireland
Assembly



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