USING DATA IN STORYTELLING

Case study & practical exercise

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COLD@HOME Case Study

- Cold at Home – documentary film / www.coldathome.today
- Using data in storytelling on COLD@HOME package
- The potential of multimedia content
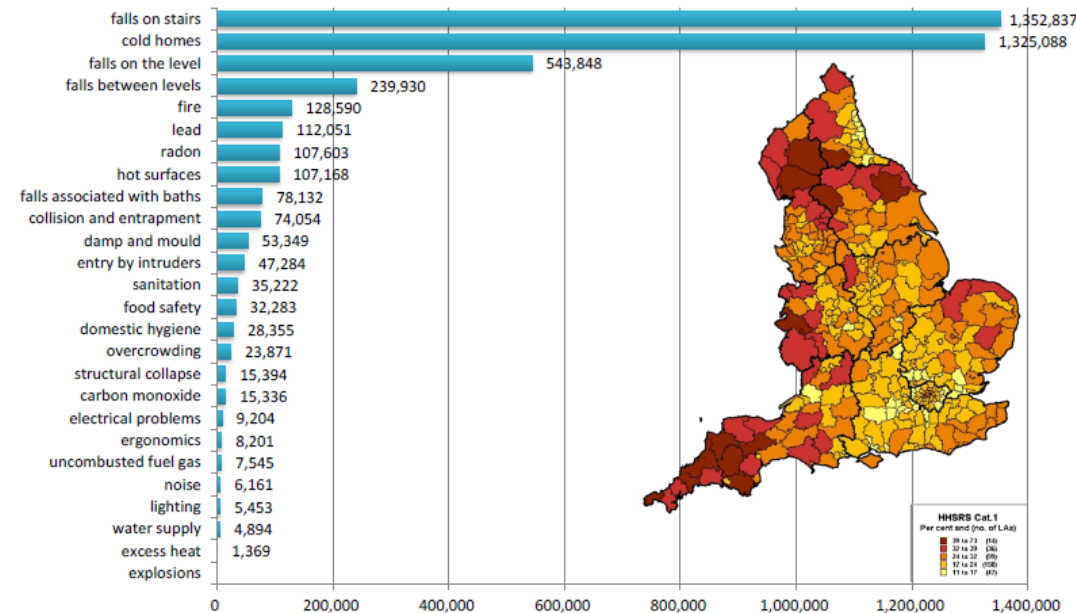
The key figure: 280%

- **What does that mean for the main character?**
  - Film format allows you to 'show' rather than 'tell'.
- **Why did it happen?**
  - Too complex to explain in film; feature article is better option.
  - 25% of EU gas is from Russia; most transits through Ukraine,
  - Ukraine earns €3 bln annually from transit fees; low gas prices to 'share the wealth.'
  - Political/economic crisis in 2014; sought loan from the IMF – 'Get rid of your gas subsidies!'

What do cold homes cost a country?

bre

HHSRS Category 1 hazards (EHS 2011)

3.4 million (15%) of English homes have a Category 1 HHSRS hazard

Hazard	Value
falls on stairs	1,352,837
cold homes	1,325,088
falls on the level	543,848
falls between levels	239,930
fire	128,590
lead	112,051
radon	107,603
hot surfaces	107,168
falls associated with baths	78,132
collision and entrapment	74,054
damp and mould	53,349
entry by intruders	47,284
sanitation	35,222
food safety	32,283
domestic hygiene	28,355
overcrowding	23,871
structural collapse	15,394
carbon monoxide	15,336
electrical problems	9,204
ergonomics	8,201
uncombusted fuel gas	7,545
noise	6,161
lighting	5,453
water supply	4,894
excess heat	1,369
explosions	

HHSRS Cat.1
Per cent and (no. of LAs)

Buildings Research Establishment

Data on

- What household risks end up having NHS costs?

- What regions are those risks most likely to occur?

- **How can we show this in a meaningful way?**

What is the message in these data?

3.4 million (15%) of UK homes have at least one Category 1 HHSRS hazard

01	**FALLS ON STAIRS**	1 352 837
02	**COLD HOMES**	1 325 088
03	**FALLS ON LEVEL**	543 848
04	**FALLS BETWEEN LEVELS**	239 930
05	**FIRE**	128 590

- **4/5 risks are 'accidents'**

- Cold homes are known to cause a steady decline in occupant health.
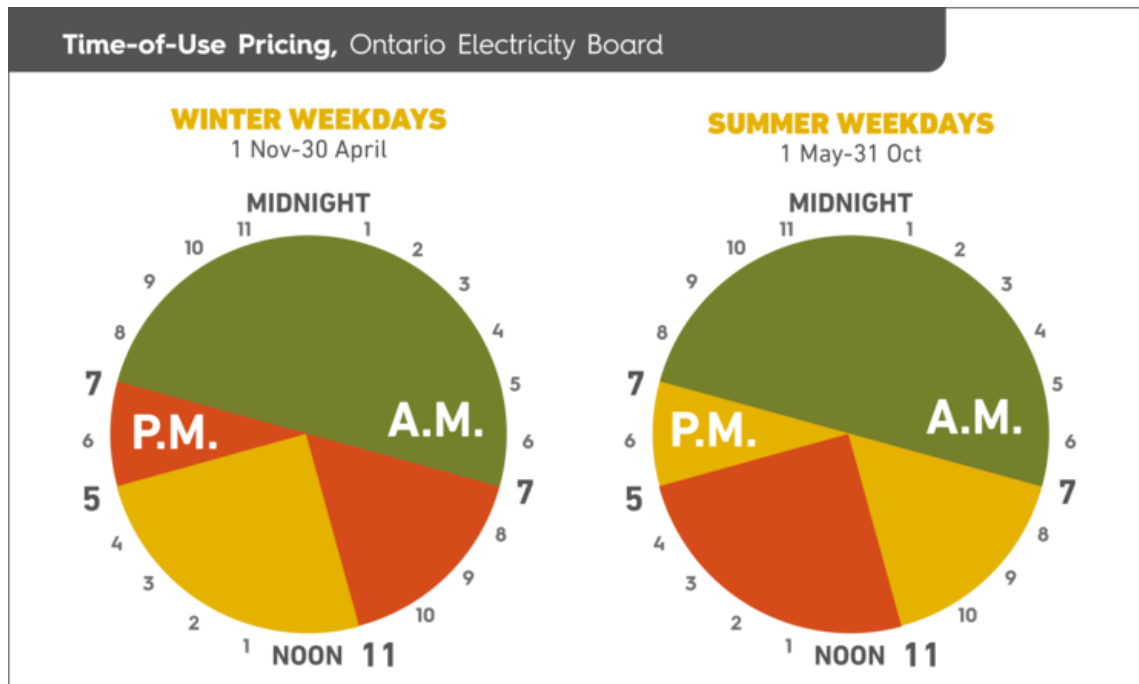
- Arguably, taking steps to avoid this risk should be a high priority.

Why is cold so costly?

Typical HHSRS outcomes and cost of 1st year treatment				
	HHSRS OUTCOME			
HAZARD	**Class 1**	**Class 2**	**Class 3**	**Class 4**
Damp and mould growth	Not applicable -	Type 1 allergy £2034	Severe asthma £1027	Mild asthma £242
Excess cold	Heart attack, care, death £19851	Heart attack £22295*	Respiratory condition £519	Mild pneumonia £84
Fire	Burn ,smoke, care, death £14662*	Burn, smoke, Care £7435*	Serious burn to hand £1 879	Burn to hand £123
Hot surfaces and materials	Not applicable -	Serious burns £7378	Minor burn £1822	Treated very minor burn £123

Cold and fire have the highest costs; risk of fire is about 10% of being cold.

Pricing scheme for demand reduction

Time-of-Use Pricing, Ontario Electricity Board

WINTER WEEKDAYS
1 Nov-30 April

SUMMER WEEKDAYS
1 May-31 Oct

- **Hydro One** introduced 'Time-of-Use' pricing.

- Customers can 'self-manage' by moving high energy demand activities (e.g. laundry) to non-peak hours.

- Rolled out to 90% of households.

Confluence of data points

- Many First Nations communities in Ontario (Canada) live in the far north; winters are cold and days are short; many use electricity for heating.
- Hydro One found it would be too costly to manage data for TOU pricing in remote areas; FN communities remain on tiered pricing.

Hydro One delivery charges, tiered pricing

DELIVERY RATES	URBAN HIGH DENSITY	MEDIUM DENSITY	LOW DENSITY
Distribution service charge ($/month)	$22.86	$30.88	$43.32
Distribution volume charge (metered usage – ¢/kWh)	1.60¢	2.98¢	4.27¢

- Communities where average income is 50% below the national median and where demand is high because of geographical factors -- pay double for distribution and almost triple per kWh.

Policy disconnects

- Family of six, modest house but poor quality.
- Husband has ALS received disability payments; electricity bill paid by Band Council.
- Received pay-out from Residential School Re-settlement Scheme; disability payments cut off; electricity bill reverted to customer; after several months, received bill for $12,645.81.
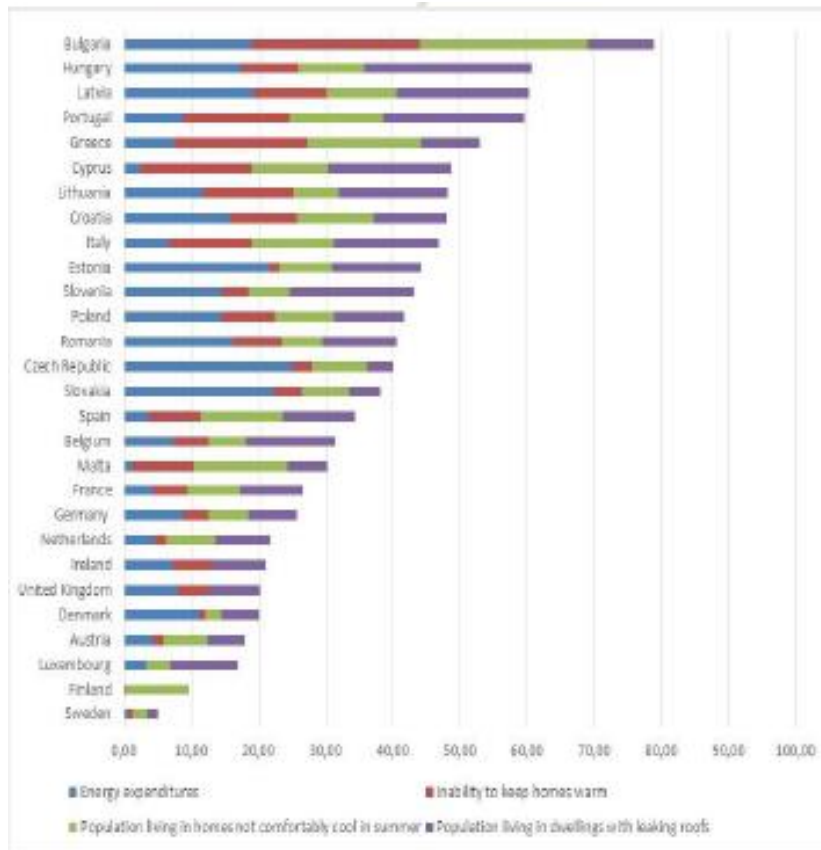
Practical exercise

- ## EU Energy Poverty Index, 2019

Mapping domestic energy poverty
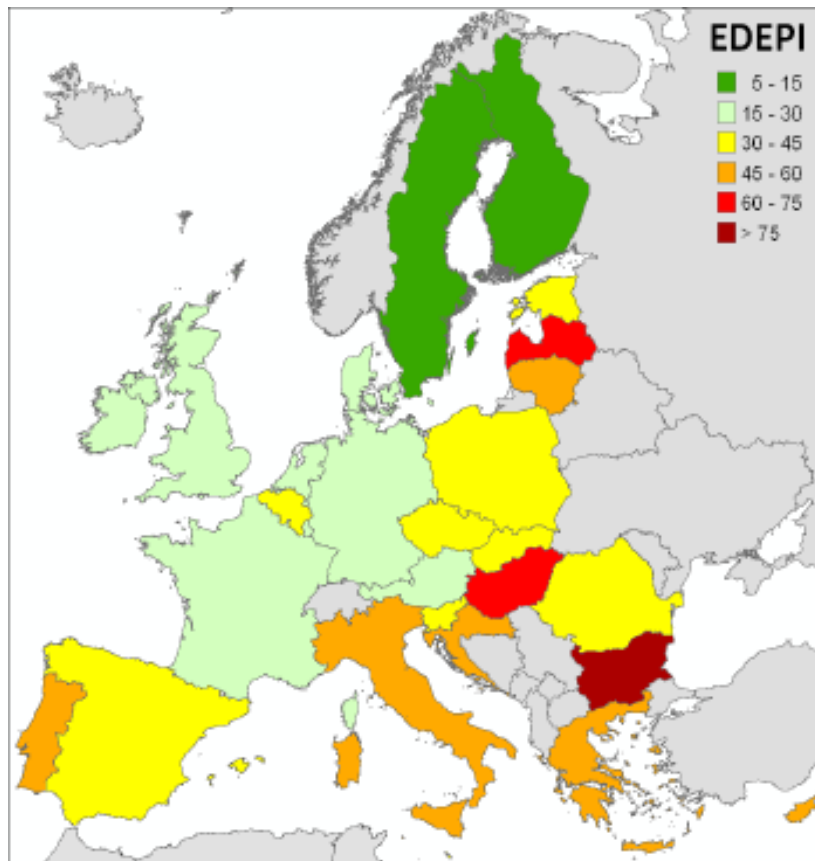
- What works?
- What doesn't?

Four contributing factors

- What works? What doesn't?
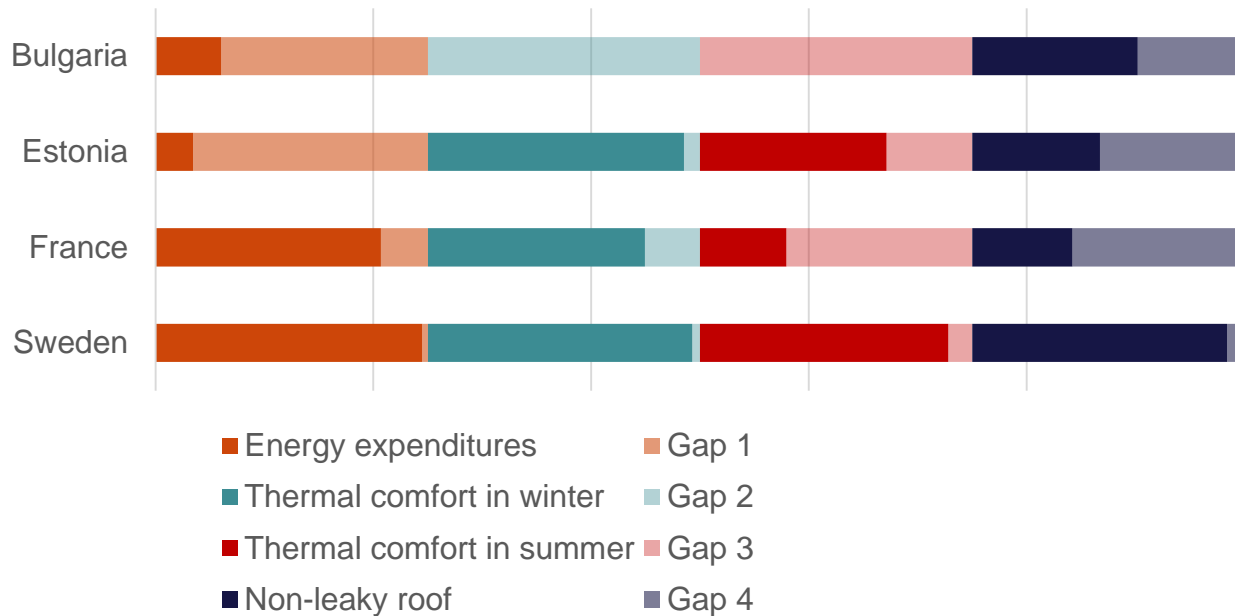
Iterations

- **What are we showing & telling?**
  - Sweden has low EP; summer cooling is main problem.
  - UK/Ireland show low EP – summer is a non-issue.
  - Estonia has almost no winter heating problem.
  - Bulgaria has high EP; low quality of housing is the least influential factor.

EC weighs in…

…wants to shift focus from measuring 'energy poverty' to showing which MS are doing well in achieving 'energy affordability'

Iterations

Showing 'Gaps' -- Darker shade is high score, implying there is little problem / light shade shows the 'gap'.

Legend:
- Energy expenditures
- Gap 1
- Thermal comfort in winter
- Gap 2
- Thermal comfort in summer
- Gap 3
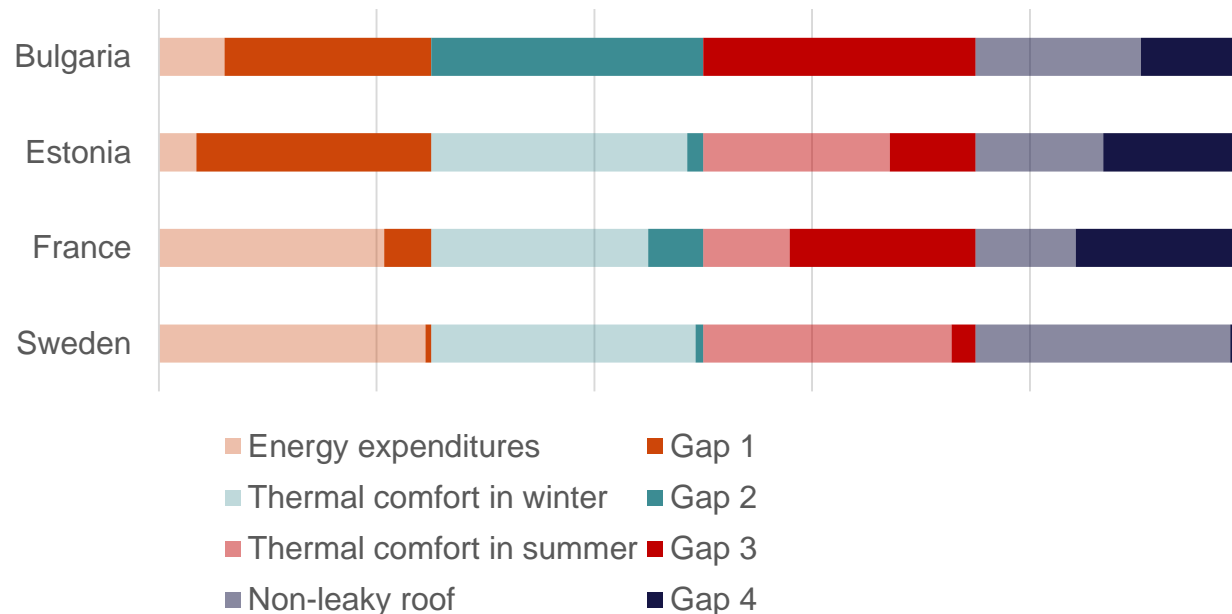- Non-leaky roof
- Gap 4

Countries shown: Bulgaria, Estonia, France, Sweden

Iterations

Showing 'Gaps' -- Darker shade is high score, implying there is little problem / light shade shows the 'gap'.

Legend:
- Energy expenditures
- Gap 1
- Thermal comfort in winter
- Gap 2
- Thermal comfort in summer
- Gap 3
- Non-leaky roof
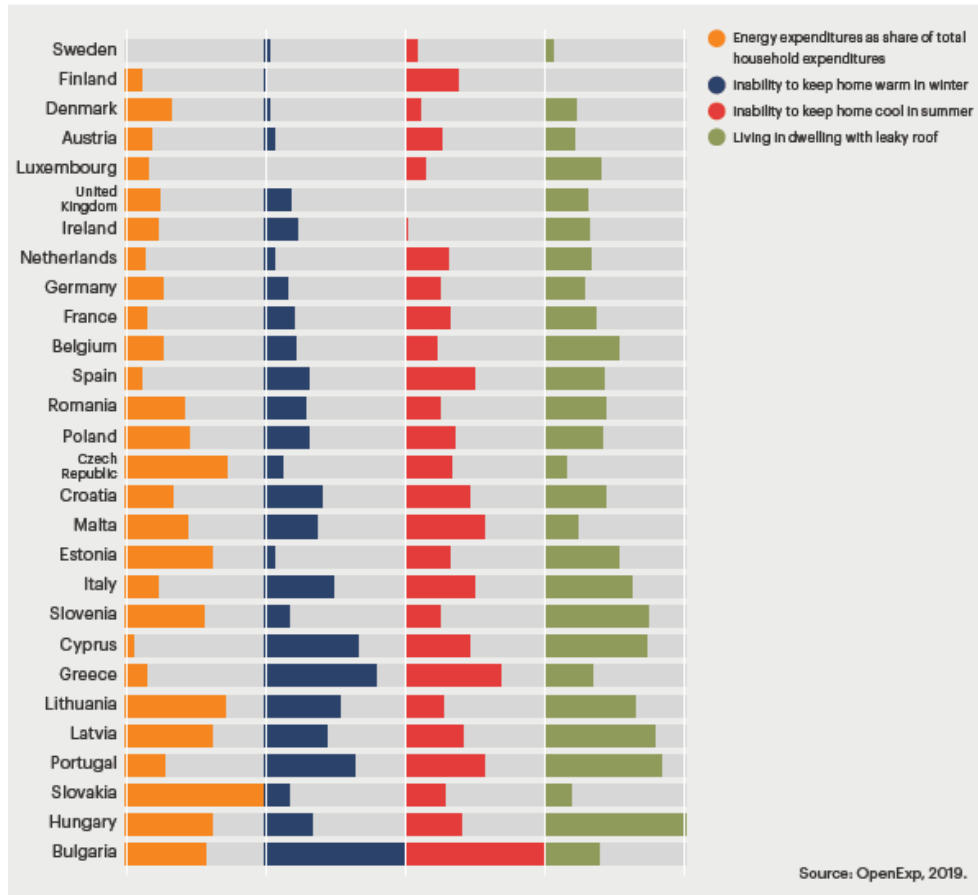- Gap 4

Iterations

Set right axis at '0' to set the target of affordable energy.
Use 'negative' numbers to show how close (or far) a country is to achieving affordable energy

Final version

Source: OpenExp, 2019.
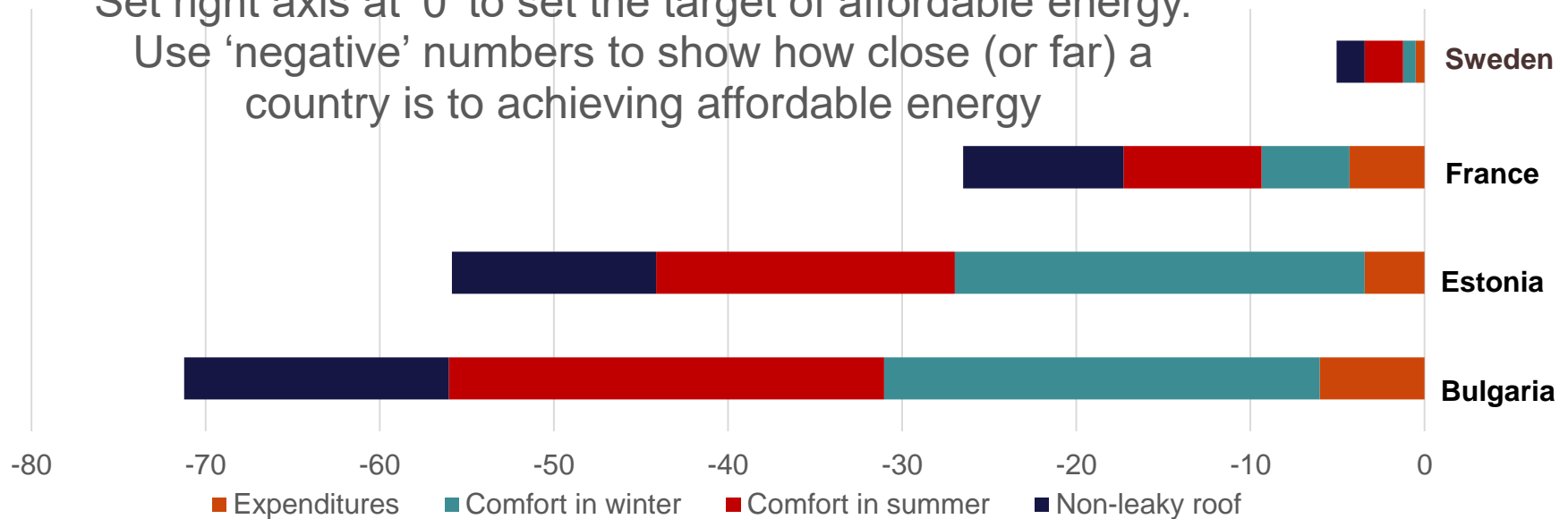
- Easier to compare a given factor; less easy to compare all 4 factors across all countries.

- Coloured area is intensity of the factor.
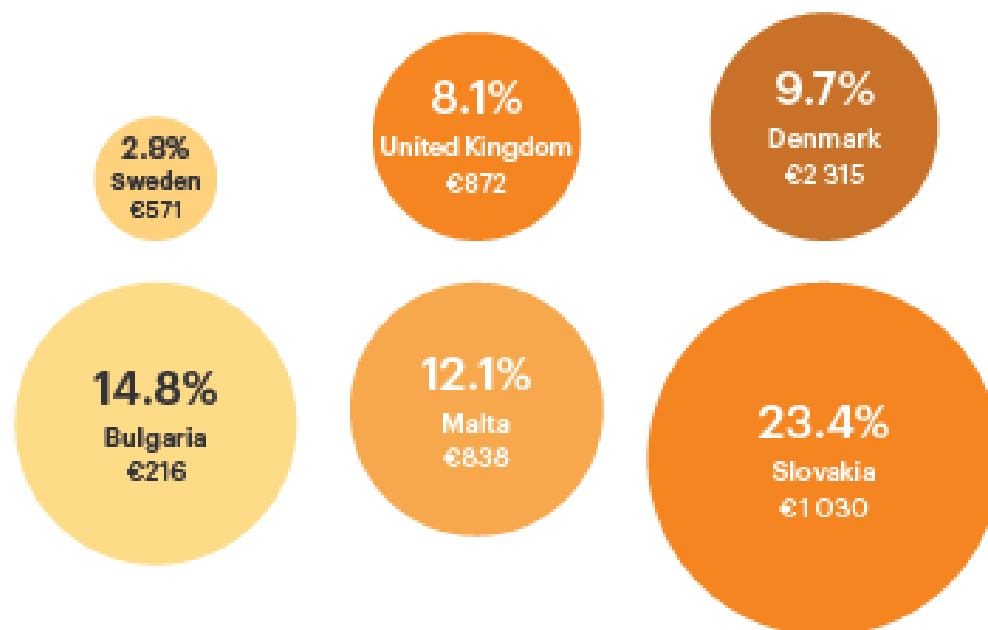
- Total 'score' is not given.

Reworked map

	Country	EDEPI Score
1	Sweden	95.4
2	Finland	85.6
3	Denmark	81.9
4	Austria	81.2
5	Luxembourg	80.9
6	United Kingdom	80.5
7	Ireland	79.3
8	Netherlands	78.1
9	Germany	75.8
10	France	73.3
11	Belgium	67.6
12	Spain	64.7
13	Romania	64.2
14	Poland	61.0
15	Czech Republic	60.2
16	Croatia	58.8
17	Malta	58.6
18	Estonia	58.0
19	Italy	52.1
20	Slovenia	51.3
21	Cyprus	46.2
22	Greece	43.7
23	Lithuania	42.4
24	Latvia	40.0
25	Portugal	36.7
26	Slovakia	8.4
27	Hungary	6.2
28	Bulgaria	0.7

Level of energy poverty:

Low Moderate Moderately high High Very high Extreme

EDEPI scores show a divide reflecting GDP per capita levels in the EU.

Source: OpenExp, 2019.

- Shading to correlate across three pieces of information:
  - Geographic distribution
  - Ranking
  - Rates of energy poverty
- Dotted line for north/south divide
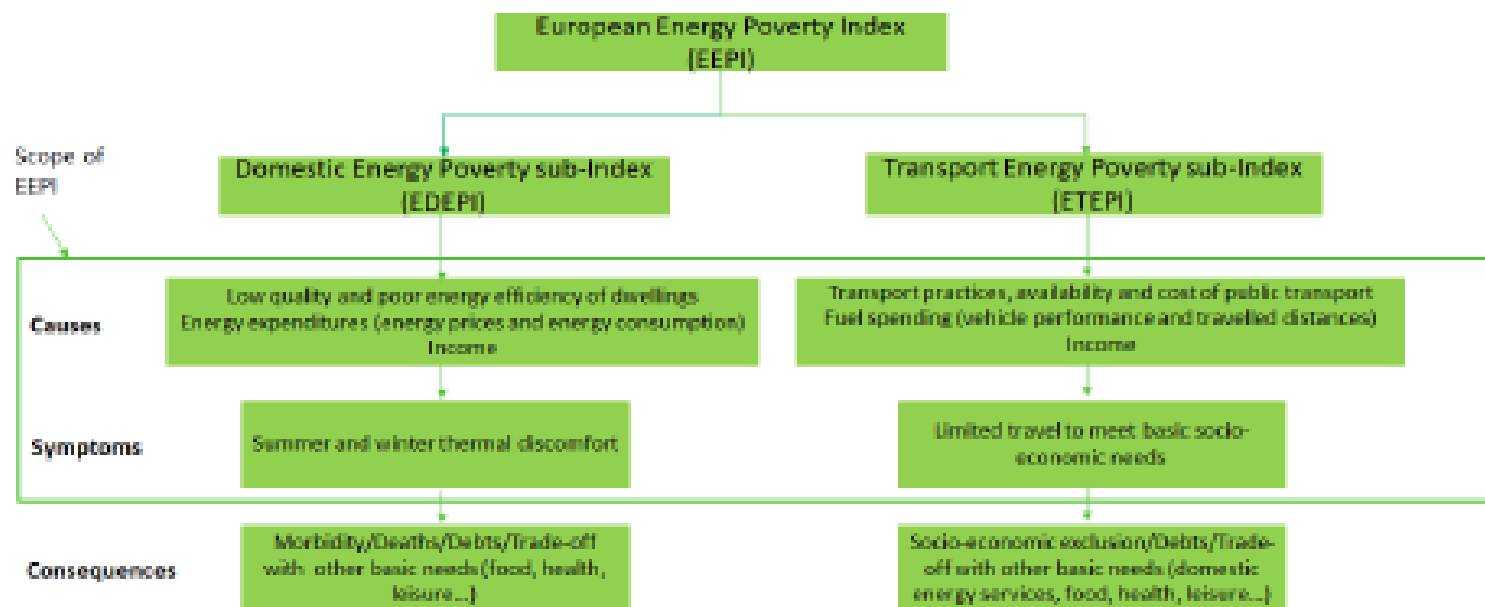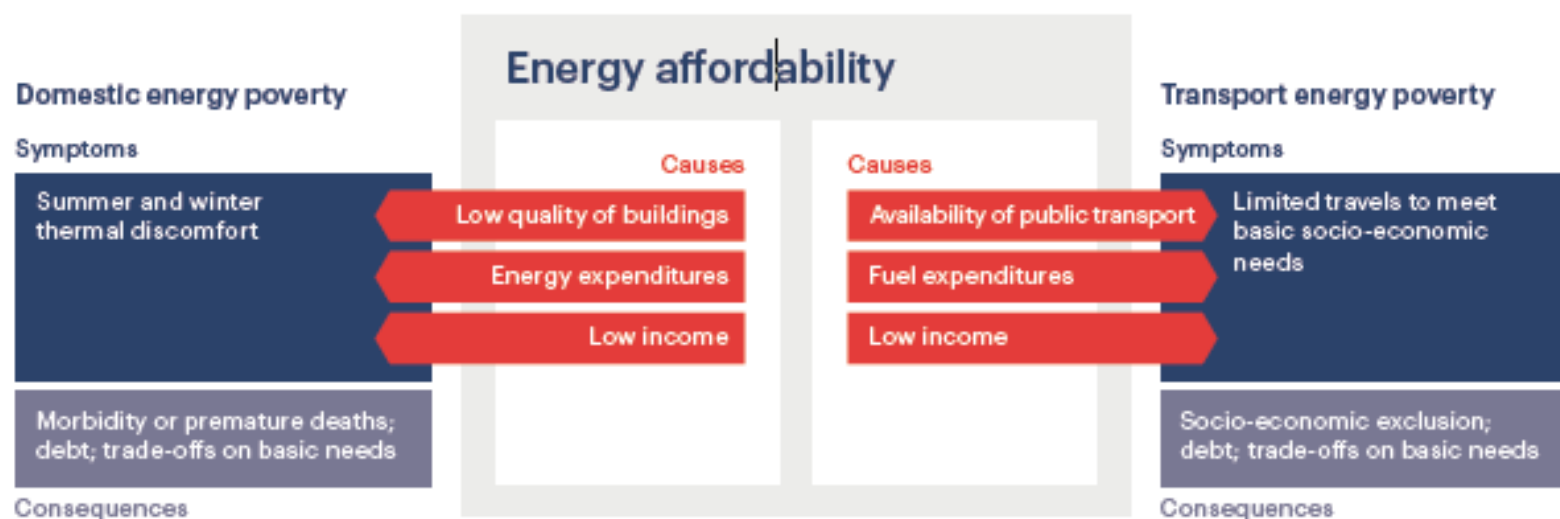- High score = low EP Low score = high EP
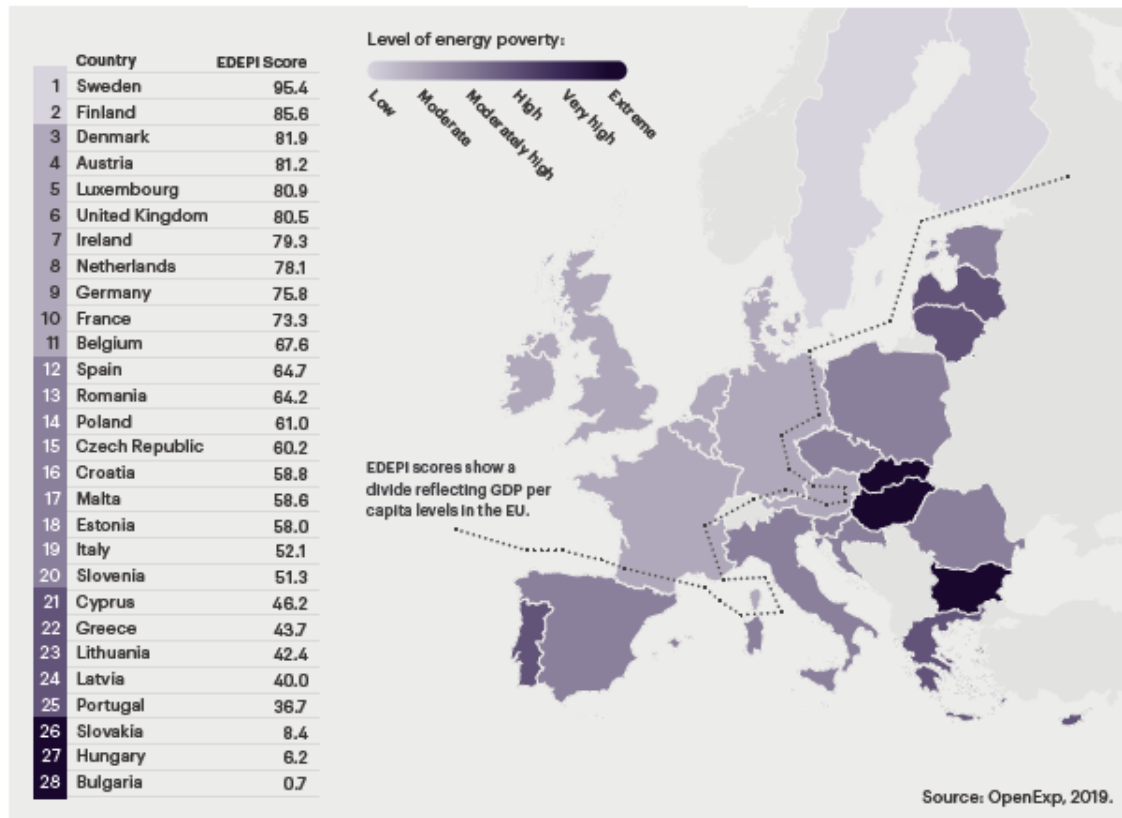
How much data to make a point?

- Energy costs as share of household income.
- Shading represents lowest to highest actual costs.
- Size of circle reflects % of household budget.

2.8%
Sweden
€571

8.1%
United Kingdom
€872

9.7%
Denmark
€2 315

14.8%
Bulgaria
€216

12.1%
Malta
€838

23.4%
Slovakia
€1 030

B.

Visualisation of the Index / OpenExp

Visualisation of energy affordability

Energy affordability

Domestic energy poverty

Symptoms

- Summer and winter thermal discomfort

Causes
- Low quality of buildings
- Energy expenditures
- Low income

Morbidity or premature deaths; debt; trade-offs on basic needs

Consequences

Transport energy poverty

Symptoms

- Limited travels to meet basic socio-economic needs

Causes
- Availability of public transport
- Fuel expenditures
- Low income

Socio-economic exclusion; debt; trade-offs on basic needs

Consequences

Exercise: A story in three tweets

Using three sources that cover the same report

OpenEXP report

- www.openexp.eu/european-energy-poverty-index-eepi

Right to Energy Coalition 'policy version'

- https://righttoenergy.org/2019/02/20/new-report-majority-of-eu-countries-unable-to-keep-citizens-warm-this-winter/

COLD@HOME:

- www.coldathome.today/overexposed-energy-poverty-in-central-eastern-europe

Exercise

- **GR1: EXP** → to academic peers

- **GR2: R2E** → policy community

- **GR3: Ireland** how adding summer factor skews your ranking

- **GR4: Romania** dispute 'high' ranking

- **GR5: Hungary** why expenditures & housing quality interrelate

- **GR6: Bulgaria** convince policy makers to pay attention

Remember 4C's

- **CLEAR** – deliver clear message

- **CONCISE** – short, but not cryptic

- **CORRECT** – data, info, spelling, etc.

- **COMPLETE** – what does each Tweet want to achieve? Also, what do you want to achieve across three Tweets?