

TNO - NATIONAL RESEARCH PROGRAM ENERGY POVERTY



› ENERGY POVERTY – NL 2019

- › They are not alone:
 - › 650.000 households, 8% in the Netherlands
- › They face multiple challenges:
 - › Energy bills are no priority, or are a big stressor
 - › Cannot invest in new energy save white goods
 - › Moisture and mold problems
 - › Not aware how to save energy or how to make use of subsidies



› INDICATORS OF ENERGY POVERTY

Affordability

1. Low income & high energy costs (LIHC)

Low income: a disposable (net) income that is lower than 130% of the statutory social minimum

High energy costs: energy costs that belong to the top 50% of the Netherlands

Housing quality

2. Low income & house of relatively low energy quality (LILEQ)

Low energy quality: all houses with an energy index 1.45 or lower (label G to lower half label C)

Able to participate in the energytransition

3. House of relatively low energy quality & cannot self-sustain (LEQ)

Distinction between homeowners (hLEK) and tenants (tLEK)

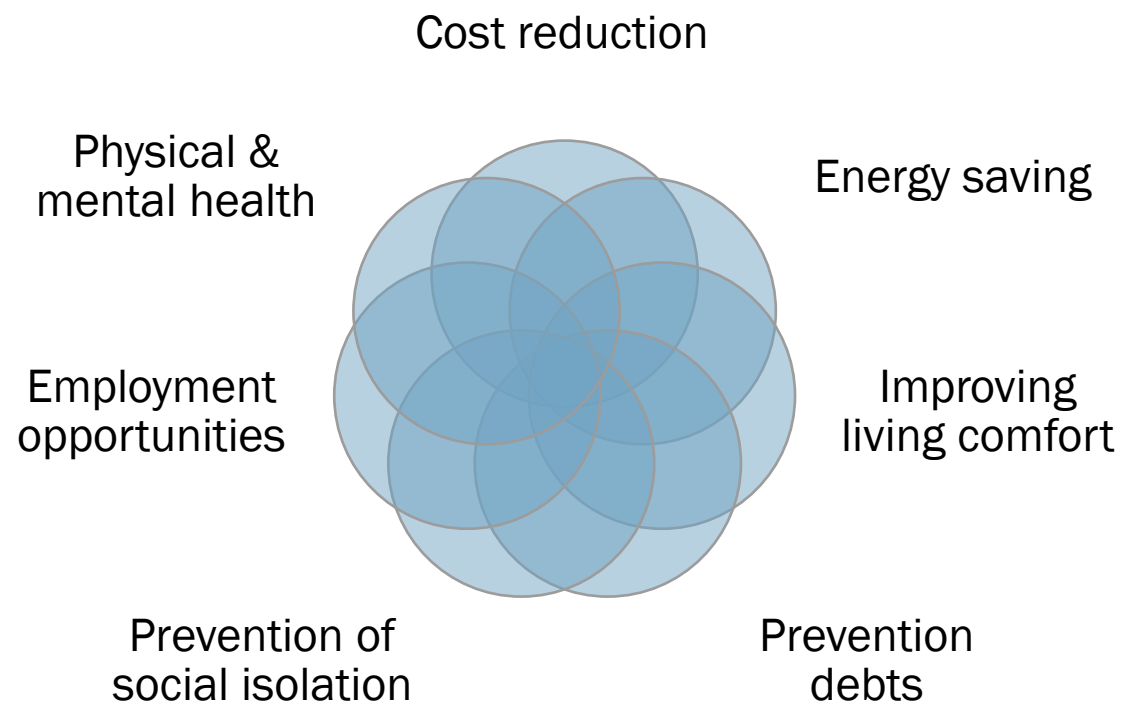
› WHAT IS THE ENERGY USAGE?

FIGURES OF ALL HOUSEHOLDS AND THOSE LIVING IN ENERGY POVERTY

	Average gas usage		Average electricity usage	
	M ³	Index	kWh	Index
All households	1177	100%	2749	100%
Low income & high energy costs (LIHC)	1555	132%	2958	108%
Low income & house of relatively low energy quality (LILEQ)	1314	112%	2400	87%
House of relatively low energy quality & cannot self-sustain (LEQ)	1296	110%	2545	93%

› BENEFITS OF REDUCING ENERGY POVERTY ARE PROBABLY HIGHER THAN THE COSTS

› Reducing energy poverty → multiple benefits



› International study: €1 investment in improving energy quality of housing of LILEQ households → €2.5 (social) benefits

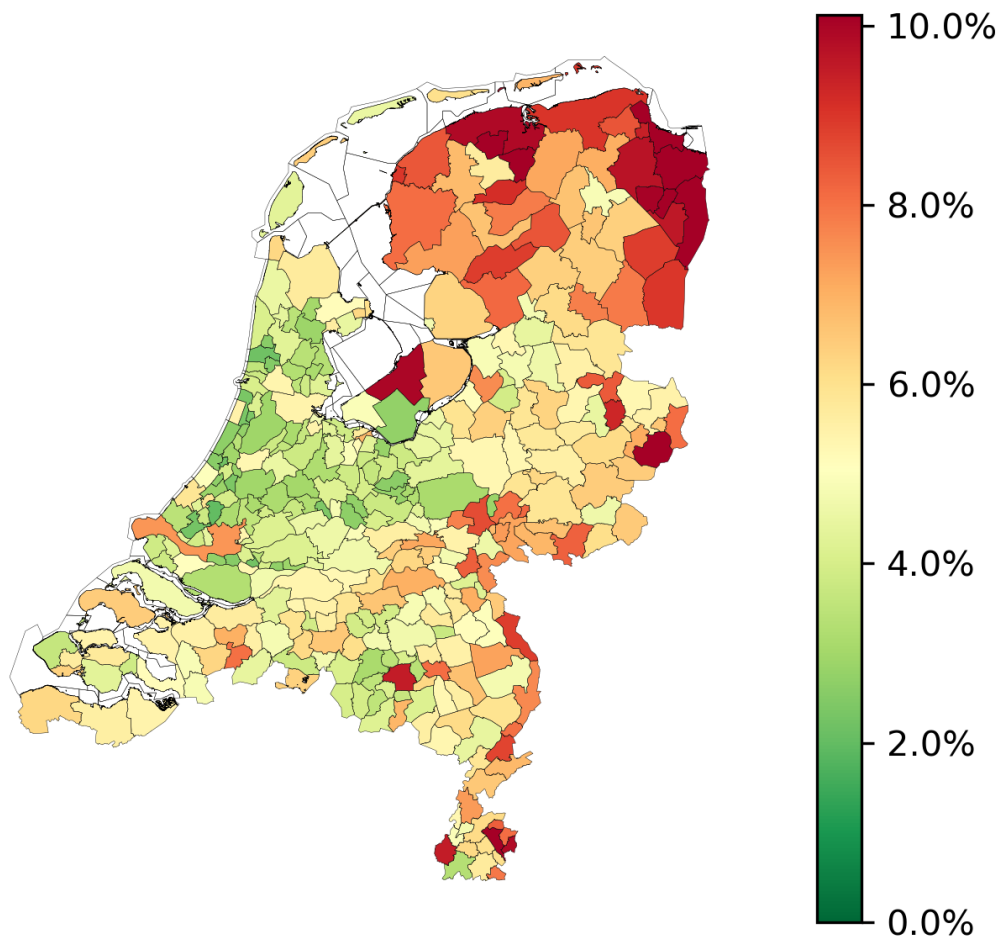
› WHO LIVES IN ENERGY POVERTY?

- ❖ Overrepresented: single-person households and, in particular, single-parent families
- ❖ Households in energy poverty spend 13-20% of their income on energy versus 5% on average for all households
- ❖ 75% live in social housing, 12% rent privately; 13% own a home
- ❖ Income: 40% social services, 40% pension



› WHERE IS ENERGY POVERTY MOST PREVALENT?

AFFORDABILITY (LIHC) & HOUSING QUALITY (LILEQ)



RESEARCH: EFFECT MEASUREMENTS OF POLICY INTERVENTIONS

Research questions

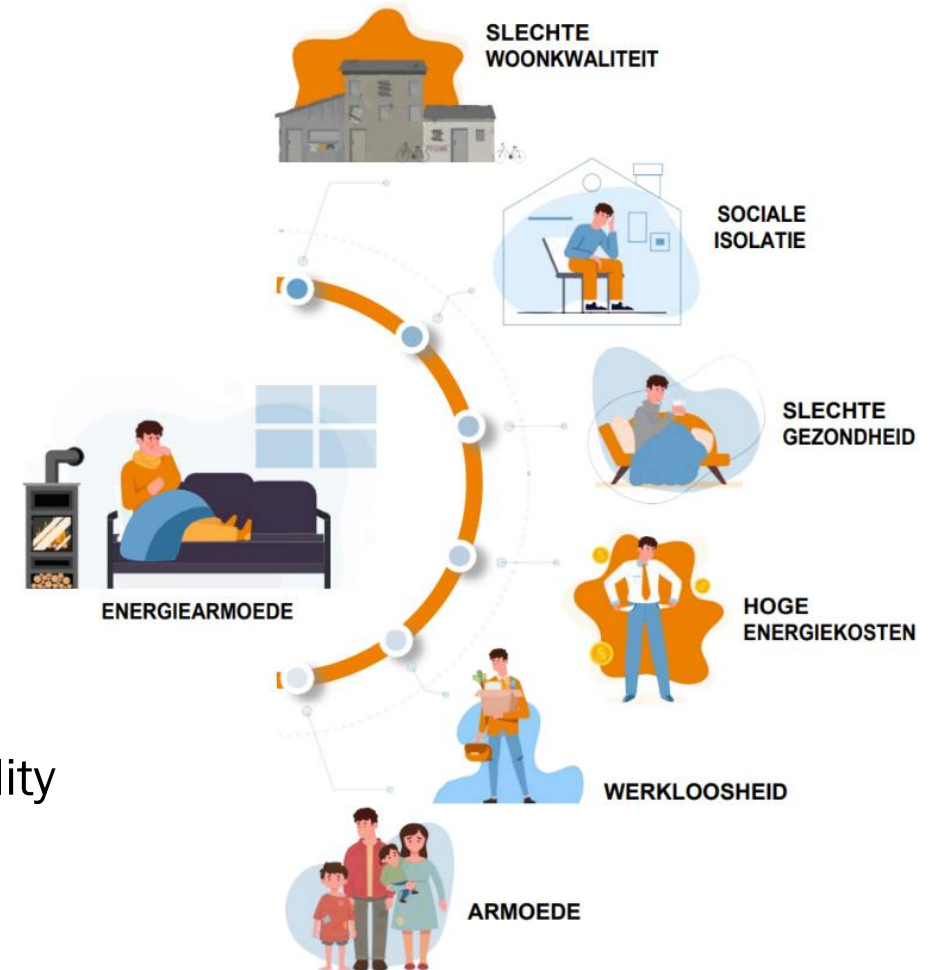
What are the effects of renovation, behavioral interventions and white goods regulation on the various facets that relate to energy poverty?

Are there differences in effectiveness and for whom which policy intervention works more/less?

HYPOTHESES

Interventions may have a positive effect on various facets related to energy poverty:

1. Improving living comfort
2. Reducing social isolation
3. Improving physical and mental health
4. Reducing energy consumption and financial stress
5. Reducing unemployment and poverty
6. Increasing knowledge and awareness about sustainability



METHOD

Quantitative

Questionnaire (resident perspective): living comfort, social isolation, mental and physical health, financial stress, energy and gas consumption, knowledge and awareness of sustainability

CBS (hard data): energy poverty indicators, income, debts, unemployment, energy and gas consumption, health costs

Qualitative

5-10 interviews per policy intervention

Repeated measures

Pre- and post intervention

RENOVATION

VESTIA

Ymere

zo wonen

volkshuisvesting
Arnhem

BEHAVIORAL INTERVENTIONS

JUNGLE
fix BRIGADE



JMA

WHITE GOODS REGULATIONS



gemeente Rheden



Leiden



Den Haag