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COMPLEX BUILT ENVIRONMENT SYSTEMS

Stakeholder-based Multi-Criteria Decision Analysis: Introduction

5th June 2013, London

Evelina Trutnevyte (UCL Energy Institute)

Zaid Chalabi (London School of Hygiene and Tropical Medicine, The Bartlett School of Graduate Studies at UCL)

The aims of the stakeholder-based Multi-Criteria Decision Analysis (MCDA)

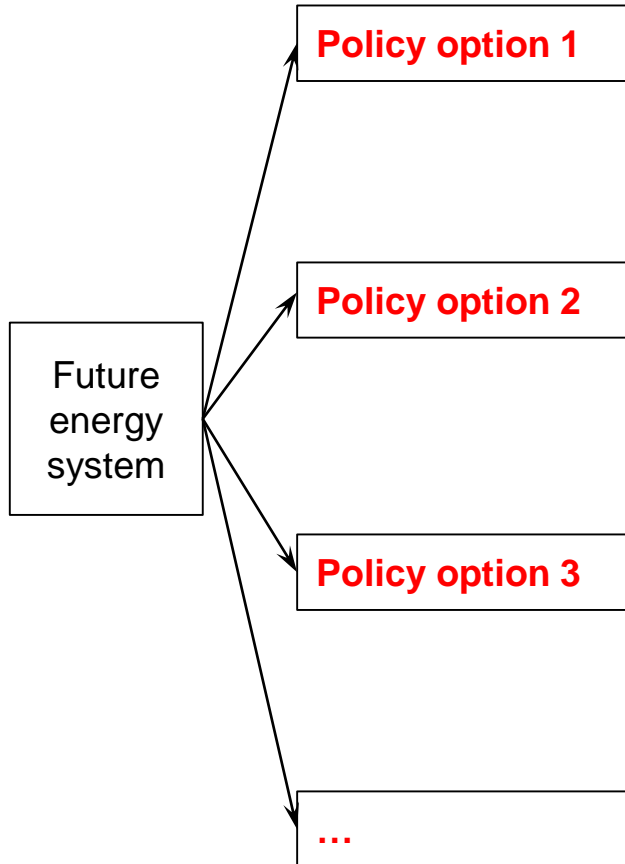
- System dynamics exercise will result in a simulation model of policy options for the UK housing
- The aims of the stakeholder-based MCDA:
 - Assess the policy options
 - Combine the stakeholder priorities and the modeling outcomes
 - Acknowledge the existence of multiple criteria

Example

Assessing the energy policy options for a Swiss region

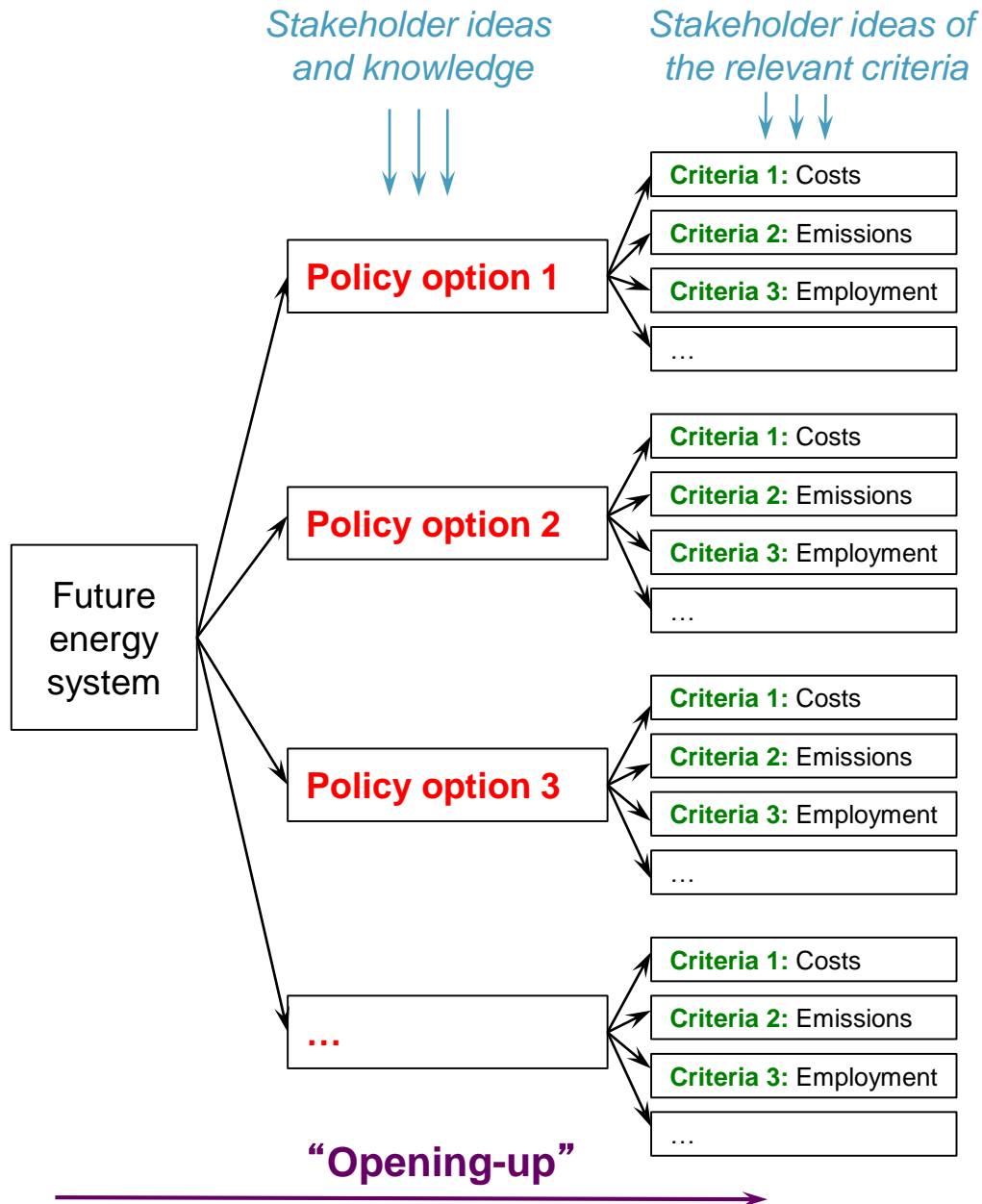


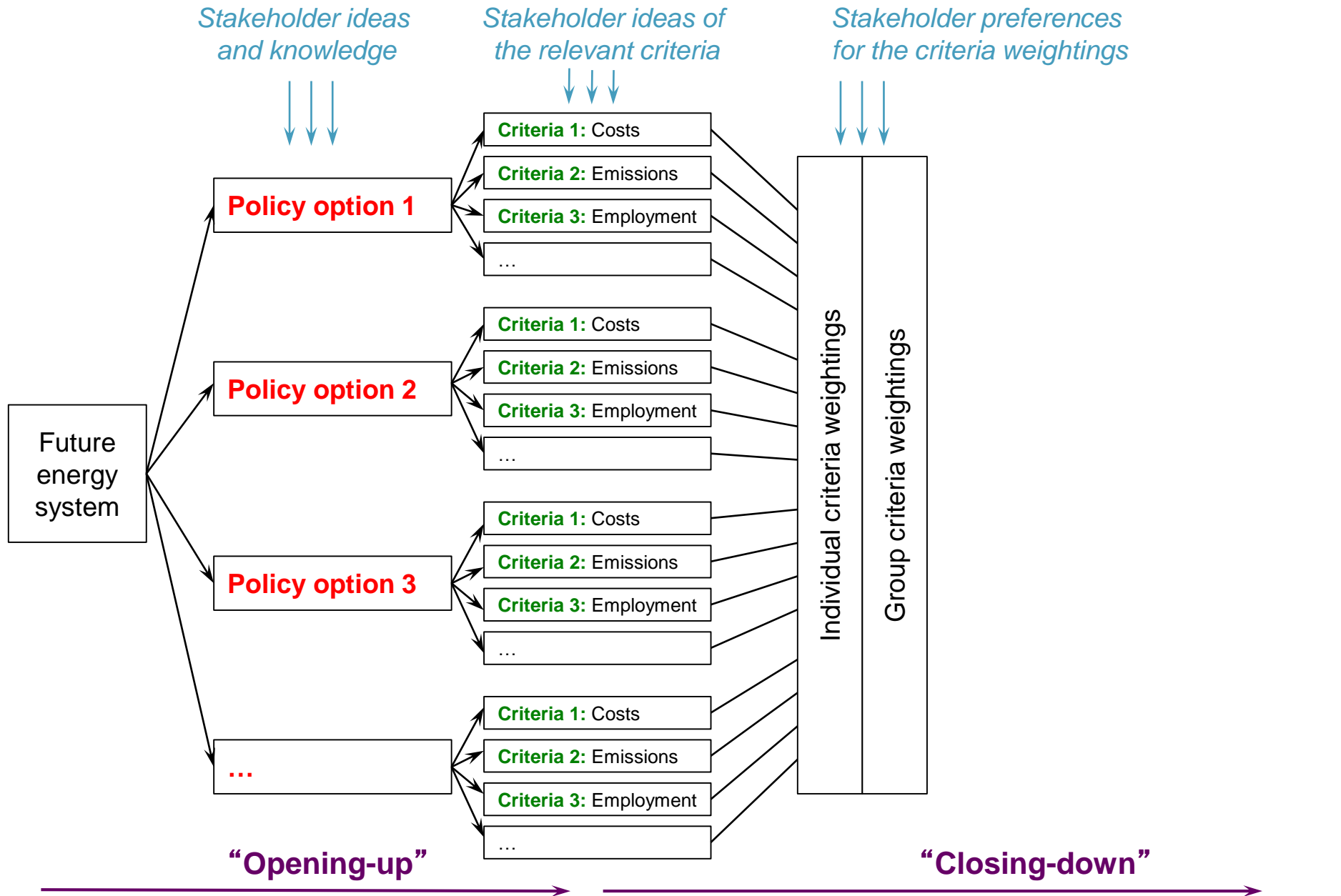
*Stakeholder ideas
and knowledge*

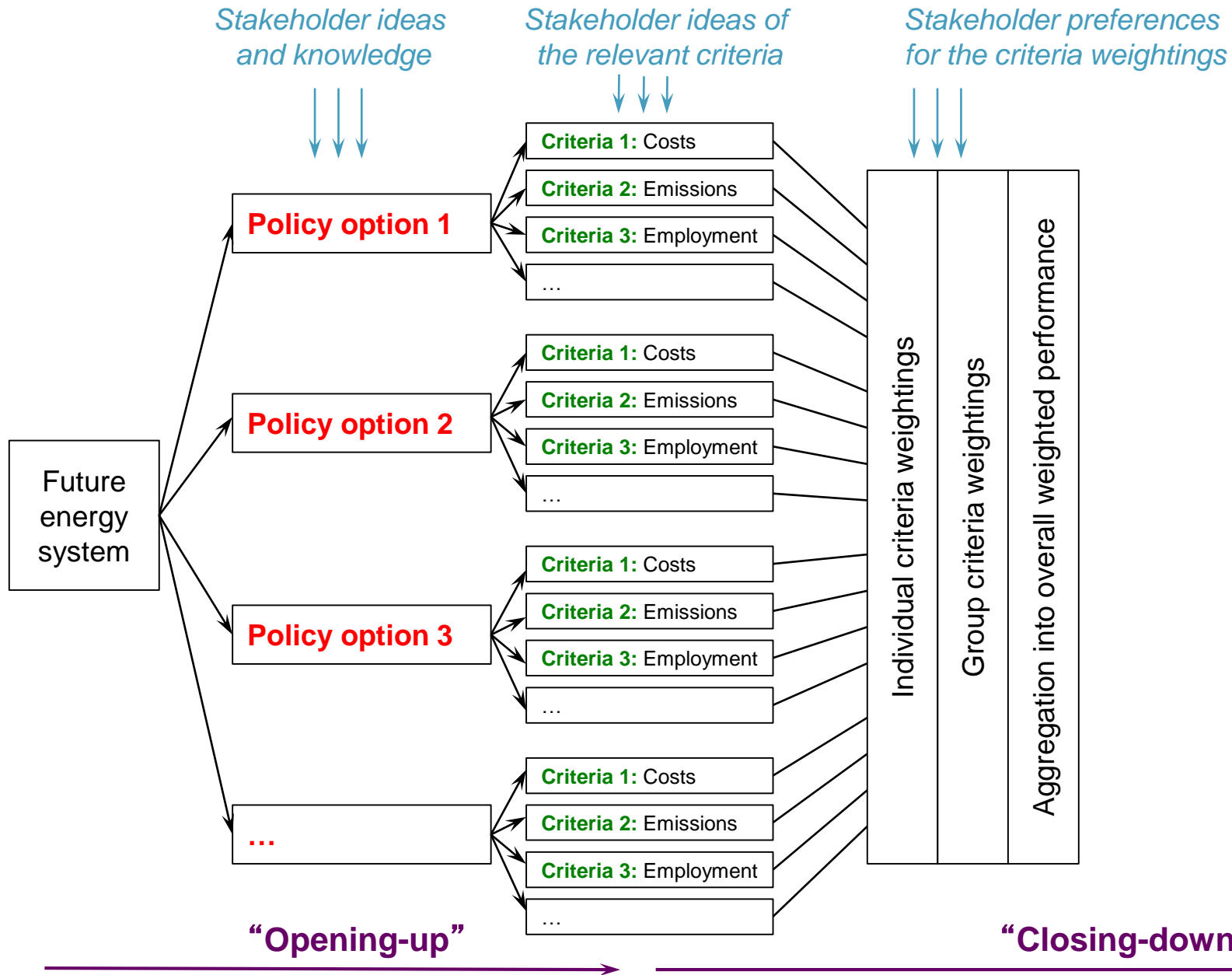


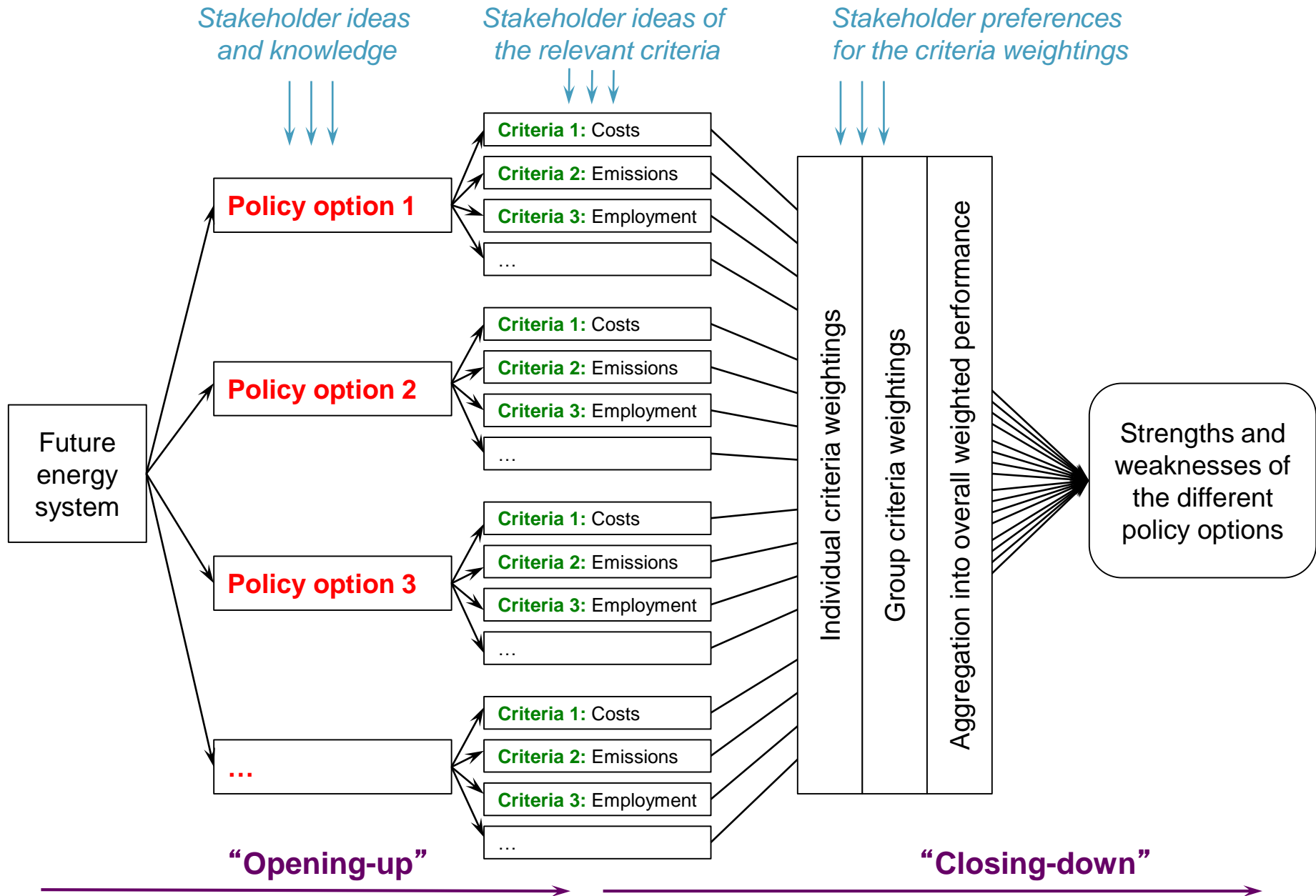
“Opening-up”



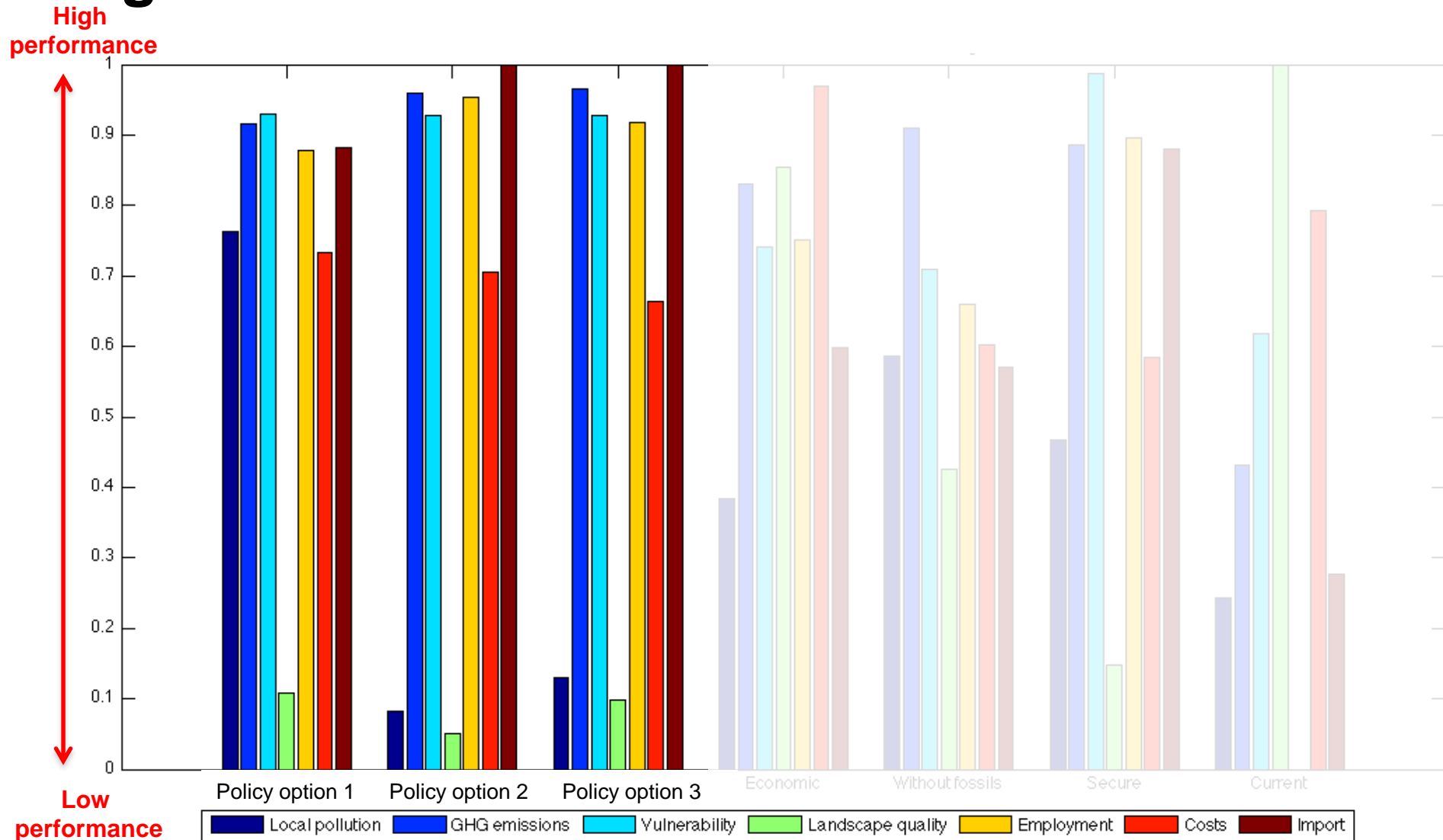




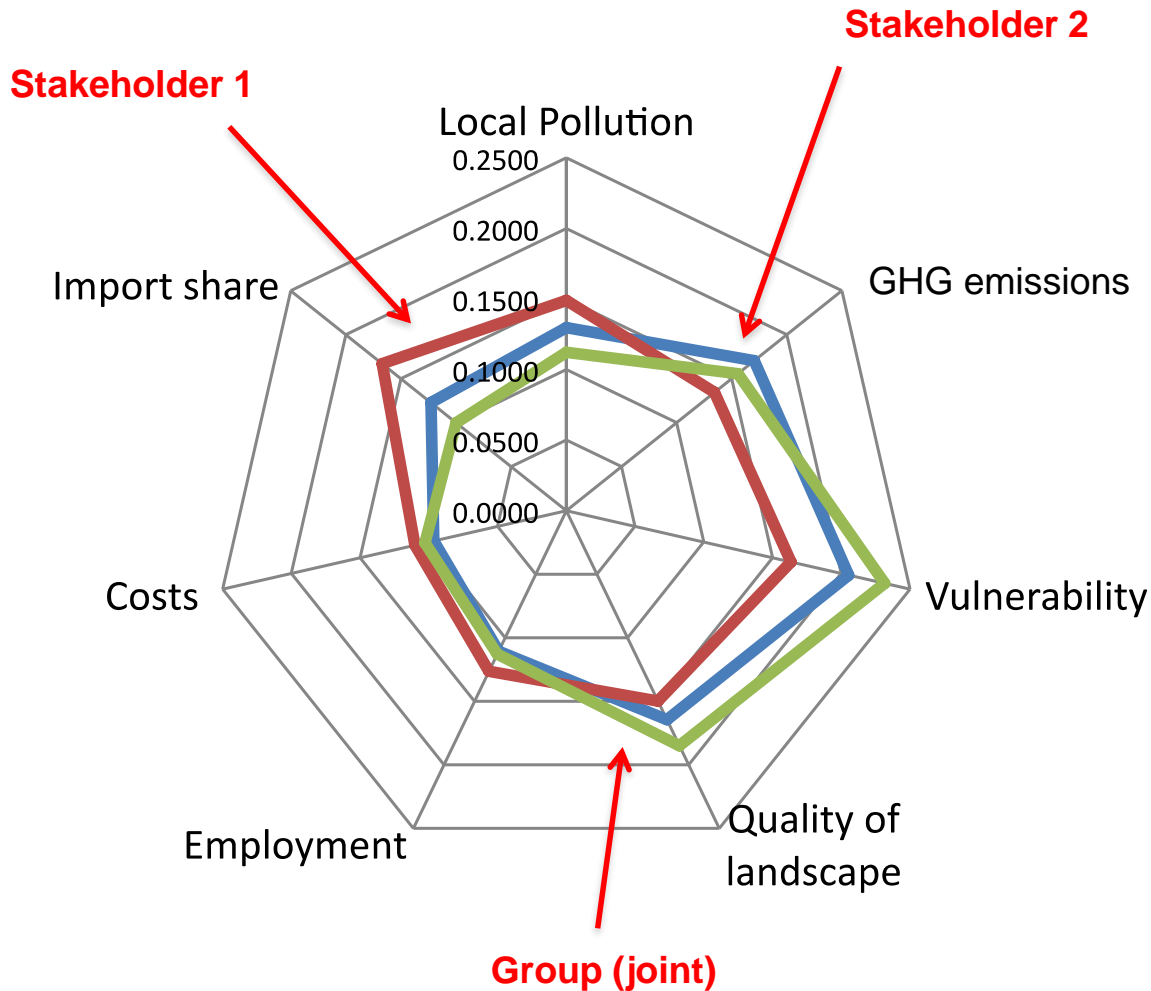




Example: performance of each policy option against each criterion

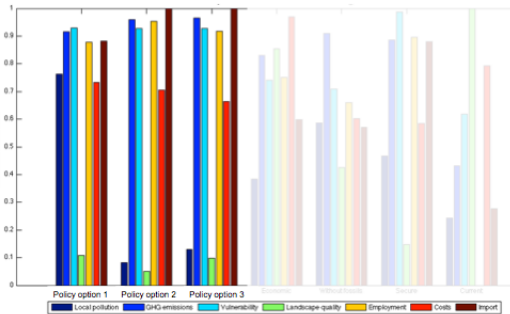


Example: Criteria weightings

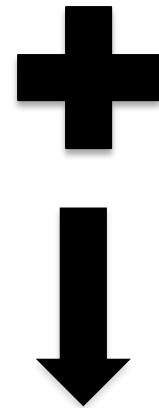
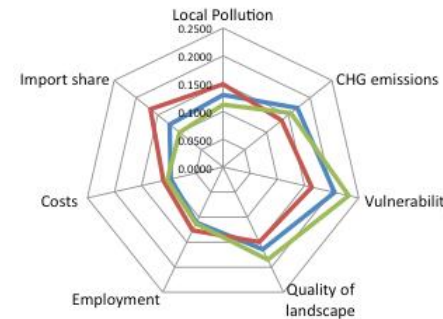


Example: Overall weighted performance

Policy performance



Criteria weightings



Individual stakeholder

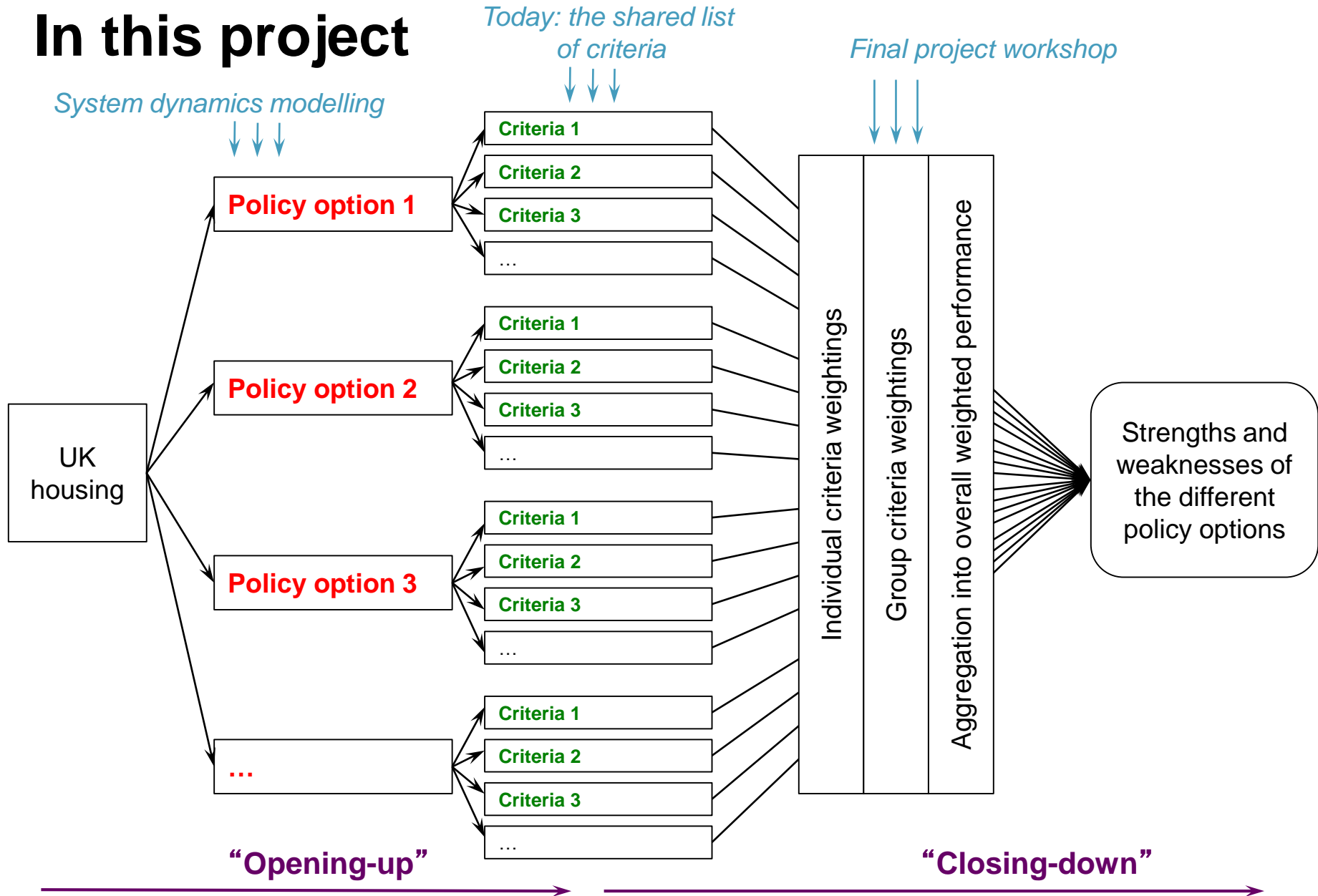
- Policy option 2
- Policy option 5
- Policy option 3
- Policy option 1
- Policy option 4

Group result

- Policy option 3
- Policy option 1
- Policy option 5
- Policy option 2
- Policy option 4

Overall weighted performance

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Interactive MCDA workshop (planned for early 2014)





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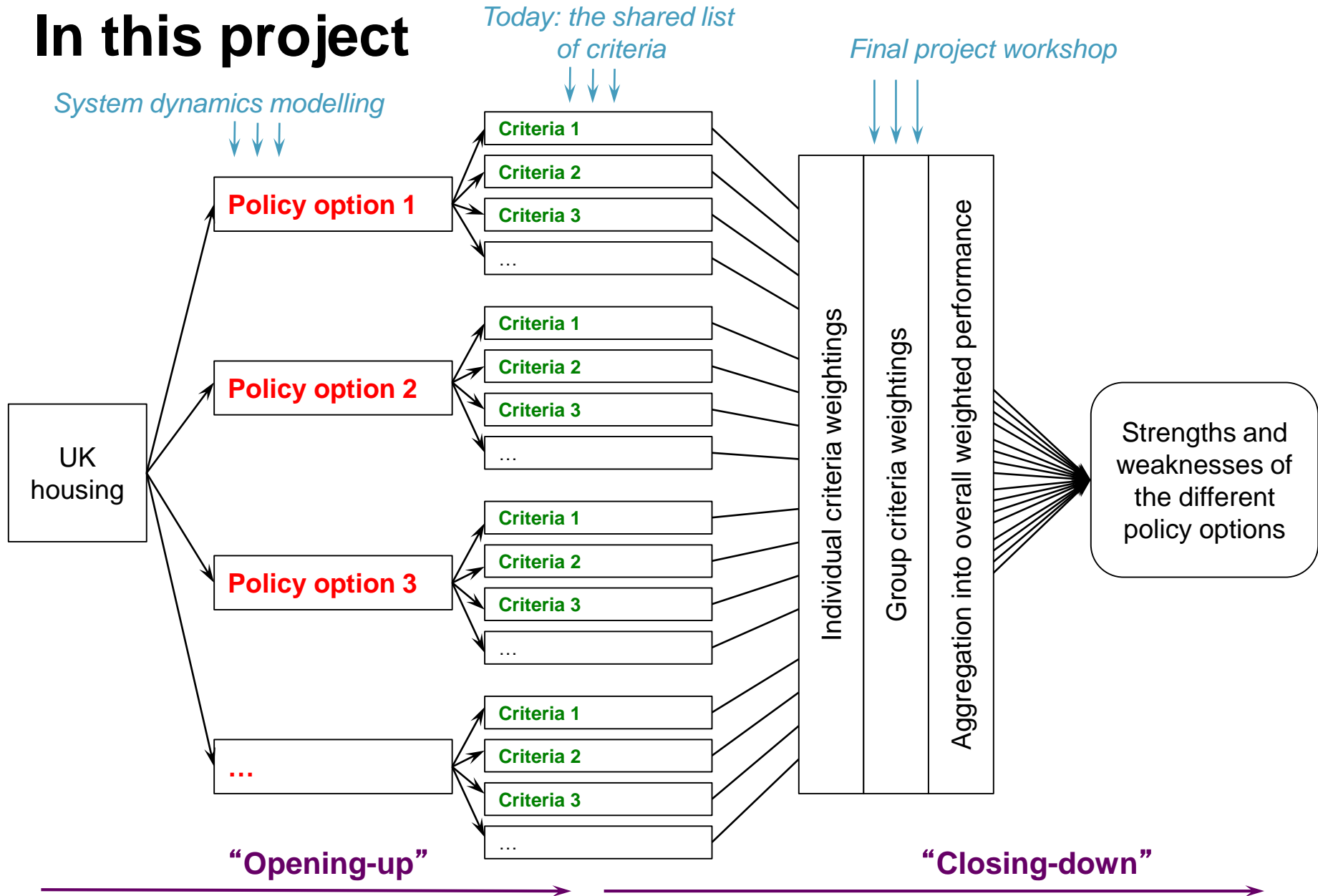
Stakeholder-based Multi-Criteria Decision Analysis: Developing the shared list of criteria

5th June 2013, London

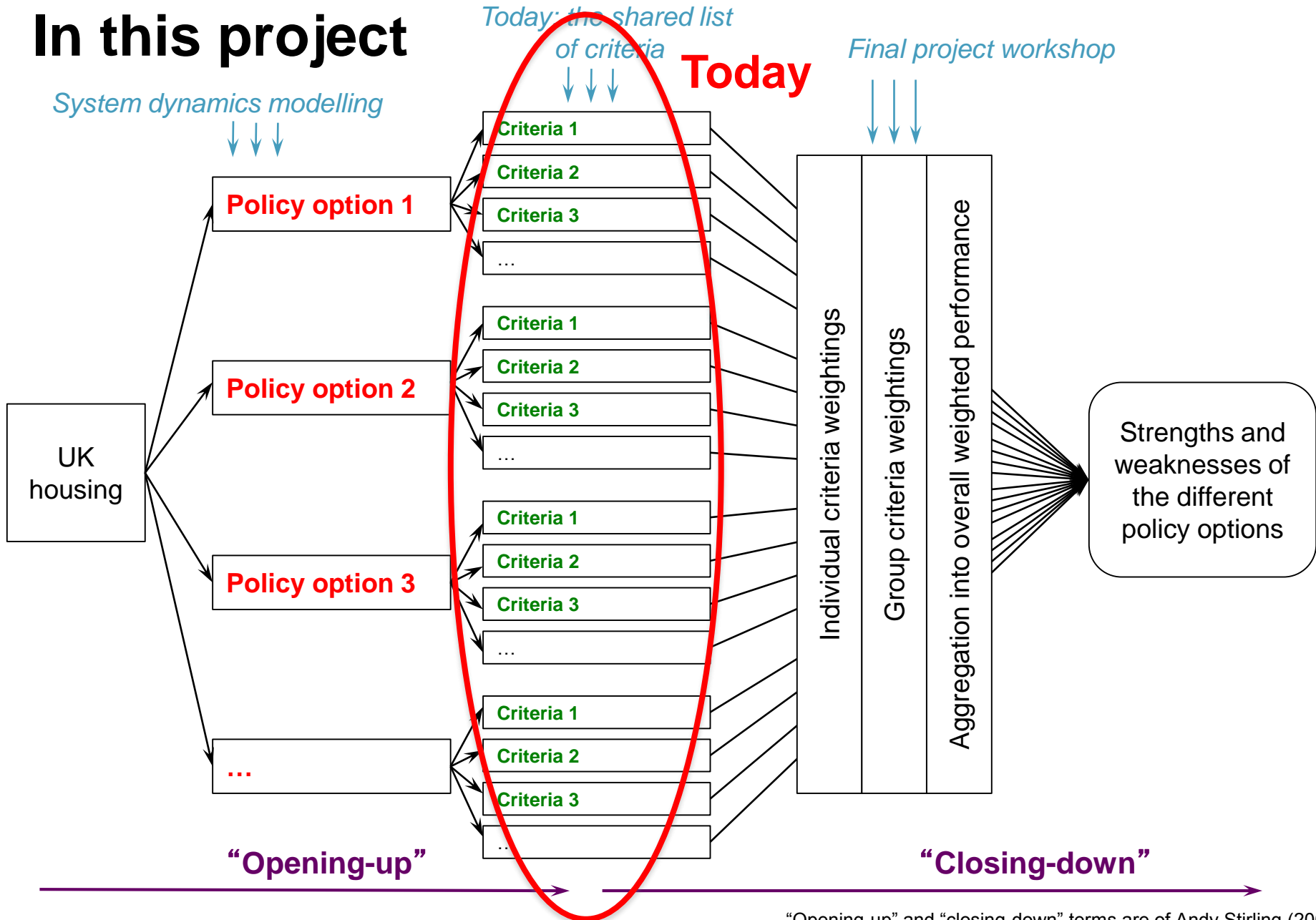
Evelina Trutnevyte (UCL Energy Institute)

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The aim and the method

- Derive a list of ≤ 10 core criteria for assessing the policy options
 - These criteria will be used in the interactive MCDA workshop
 - After this exercise the criteria weightings will not matter
- The card game
 - Based on an adapted silent negotiation (Pictet and Bollinger, 2005)

The initial list of criteria

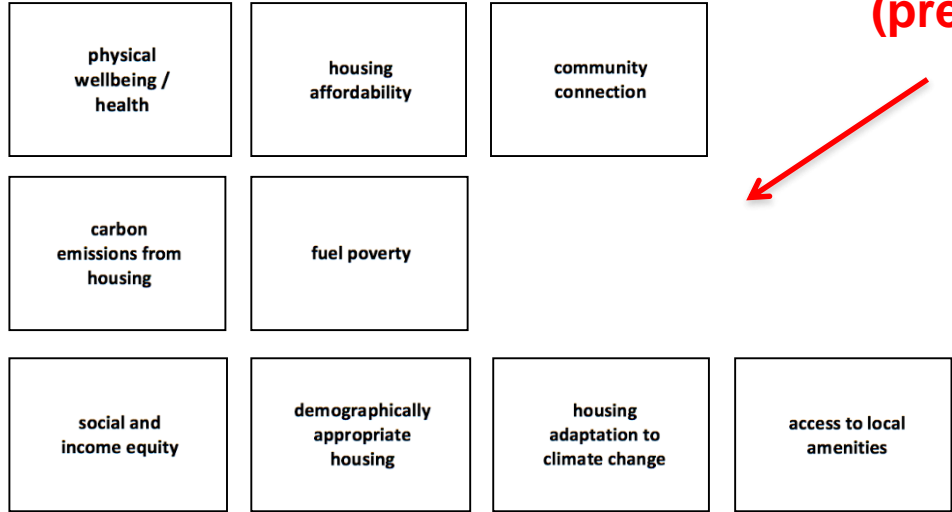
- The criteria come from the individual interviews
- We merged and refined the list into criteria that:
 - Eliminate repetition and mutual dependence
 - Enable distinction between policy options
 - Balanced level of aggregation
- Suggested detailed descriptions

The initial list of criteria

- In total, there are 27 criteria that were at least once mentioned as one's 1st or 2nd priority in the interviews
- Among these criteria, there are 9 criteria that were often ranked high
- These 9 criteria form our suggested initial list (≤ 10)
- This list shall be revised today

Please have a look at this initial list and mark your personal 5 most important criteria

More important



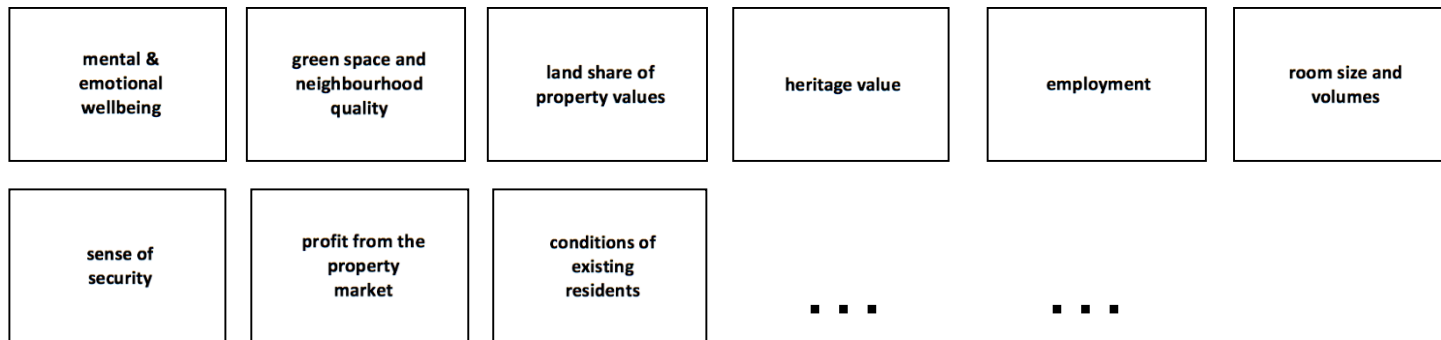
The initial list of 9 criteria (pre-ranked)



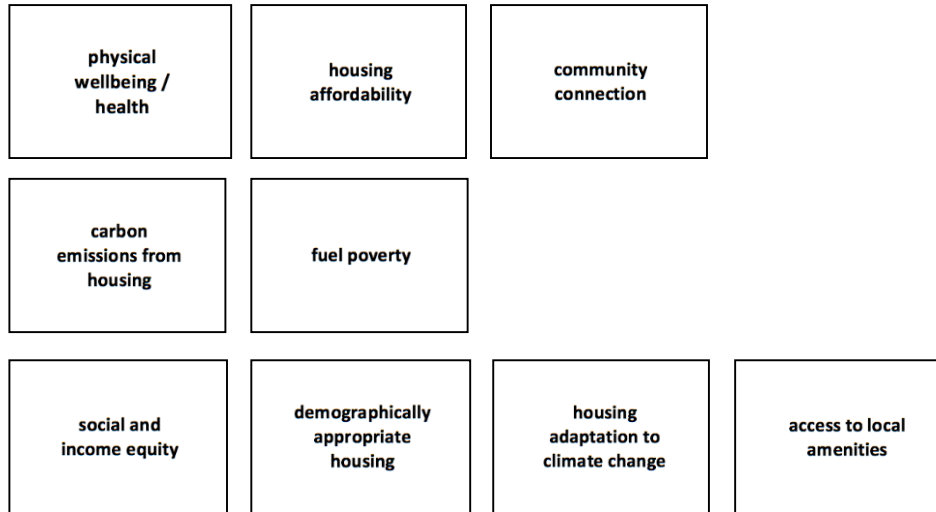
The list of 18 other criteria



Less important

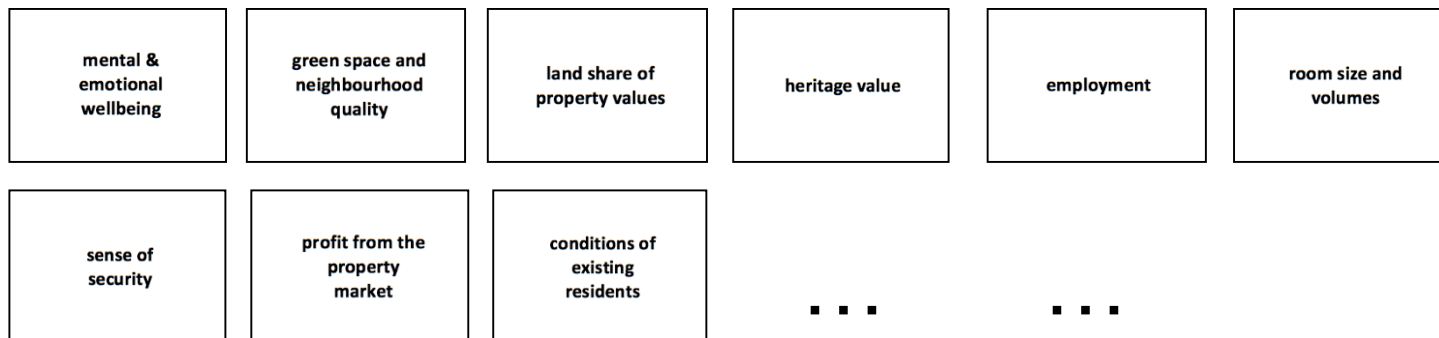


More important

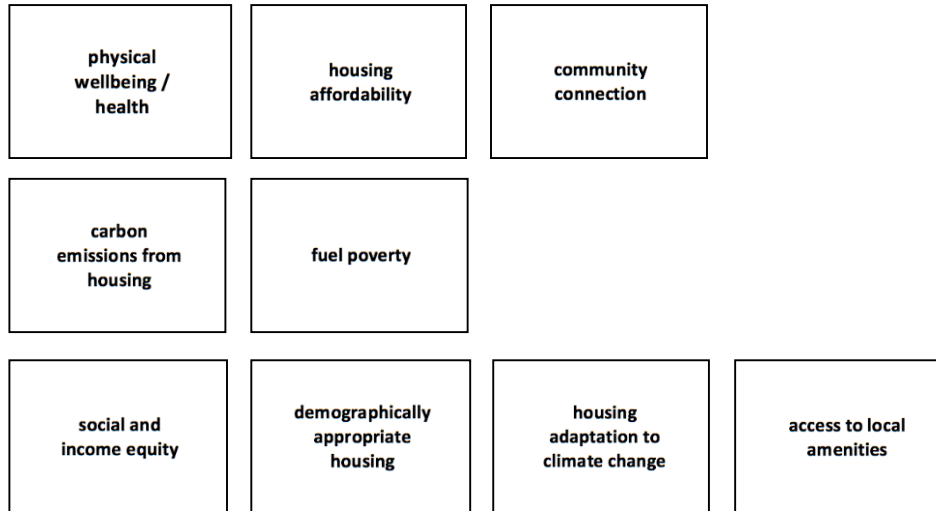


- Please express your individual priorities, while building a shared list of criteria
- It's a silent negotiation!

Less important



More important

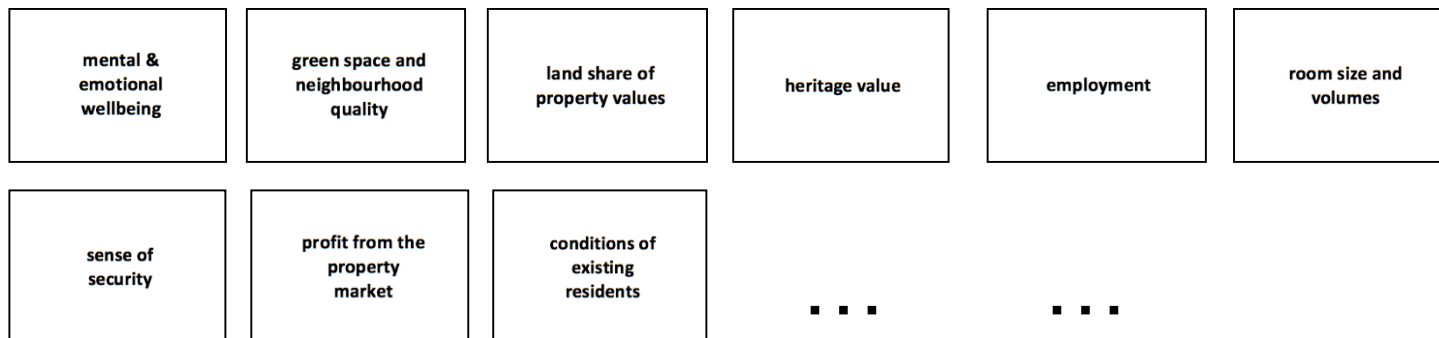


- Please draw a card with a number

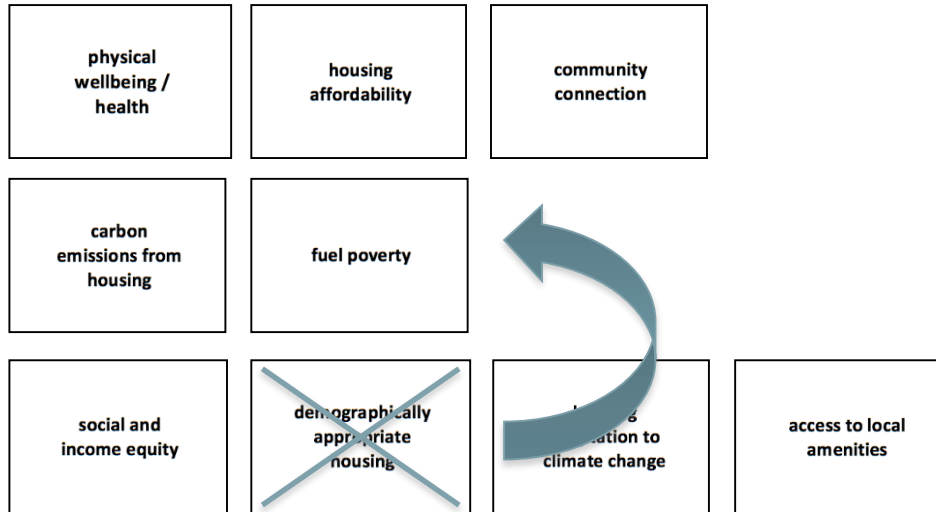
- Please make **TWO** moves, when it is your turn

- There shall not be more than 4 cards in one row

Less important

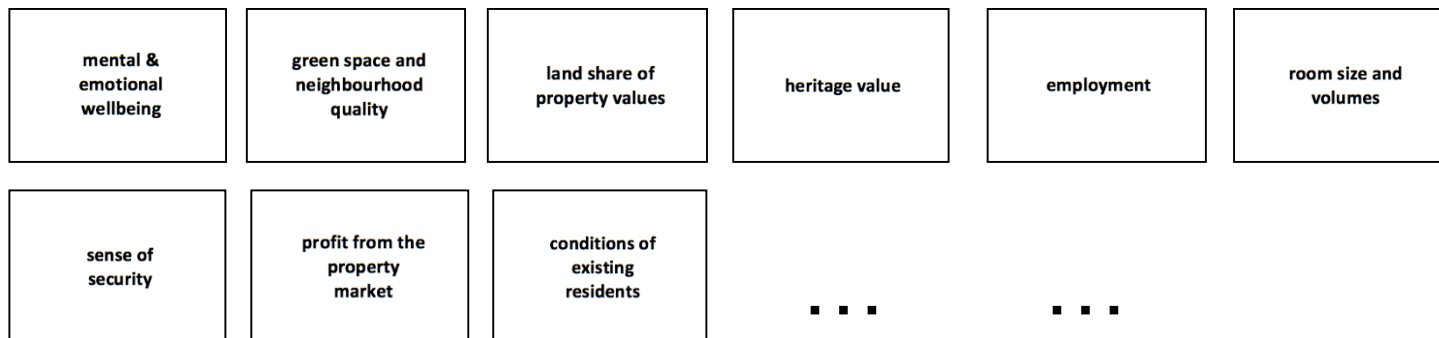


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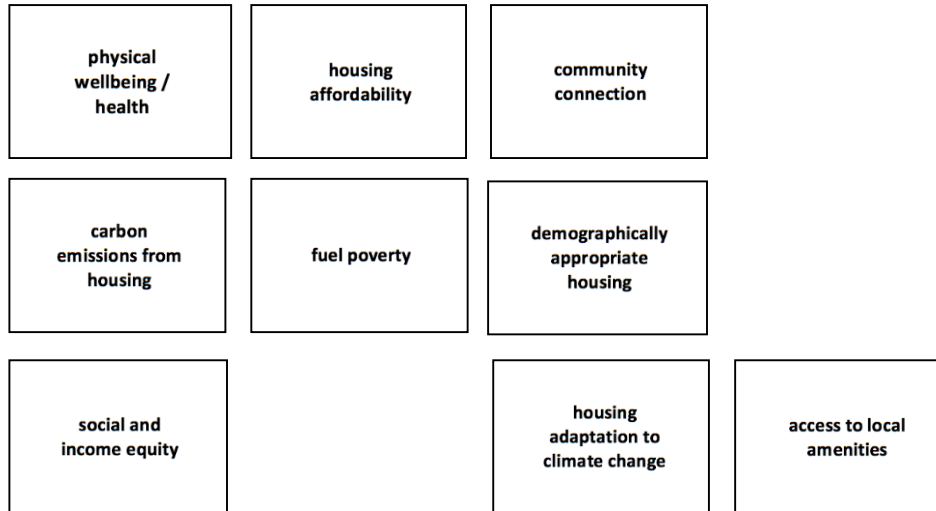


What counts as **ONE** move:
 1. Move one card **one line up or down** in the core list (horizontal move is not a move!)

Less important

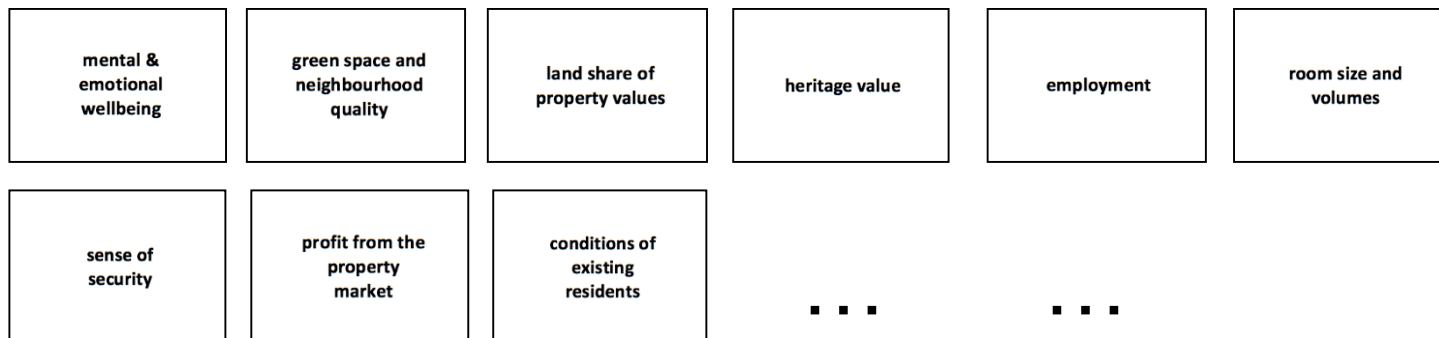


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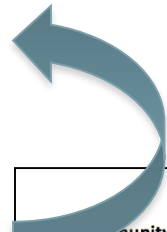
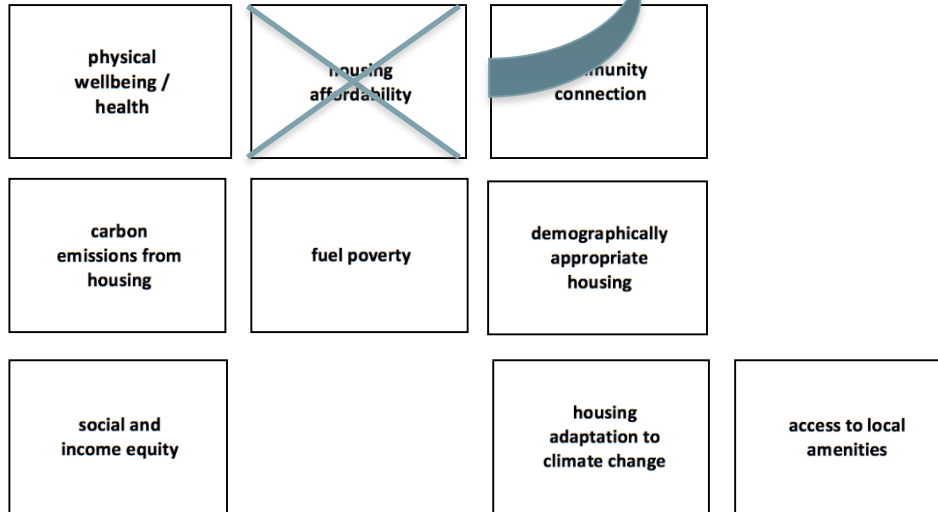


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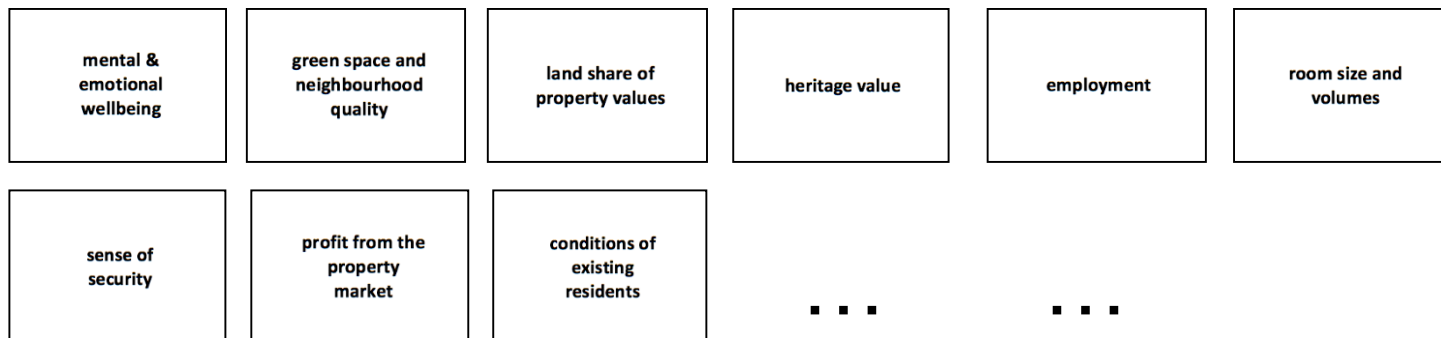


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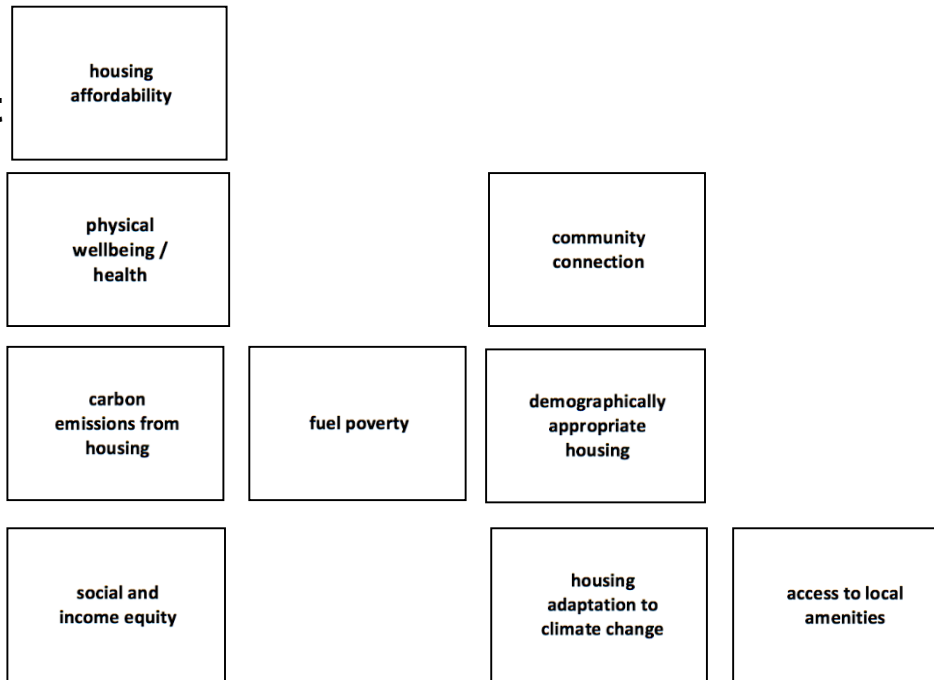


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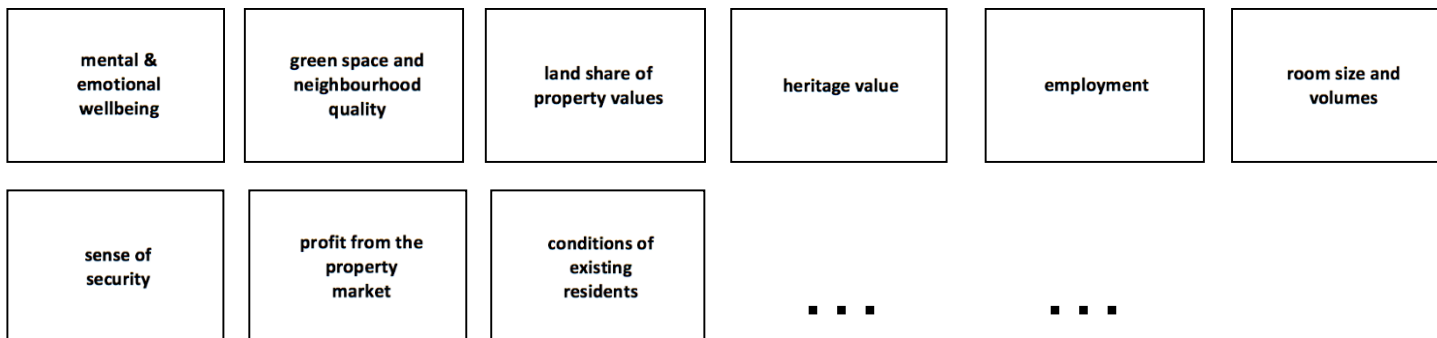


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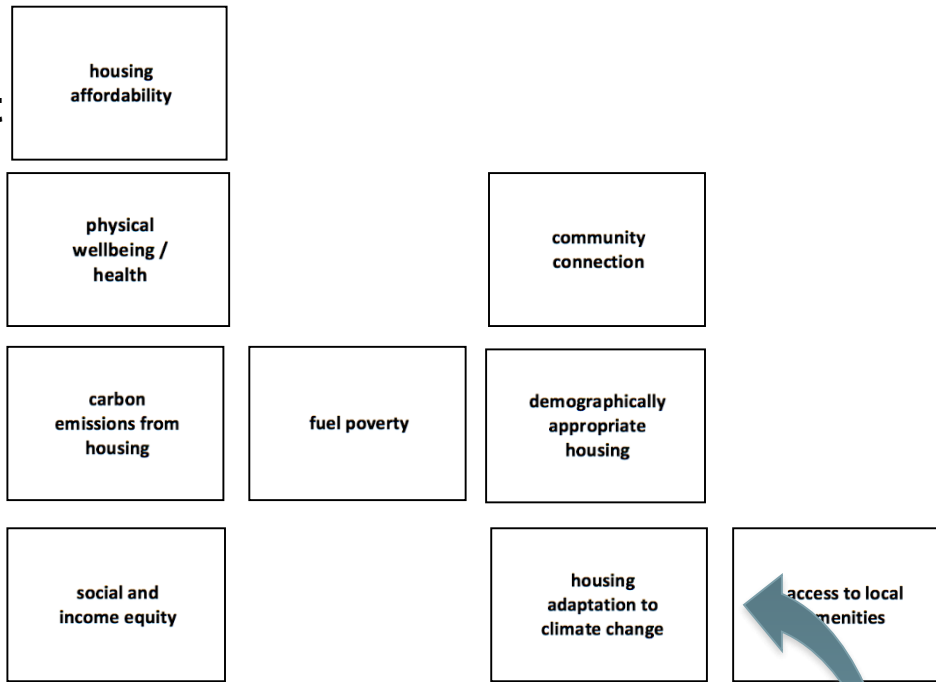


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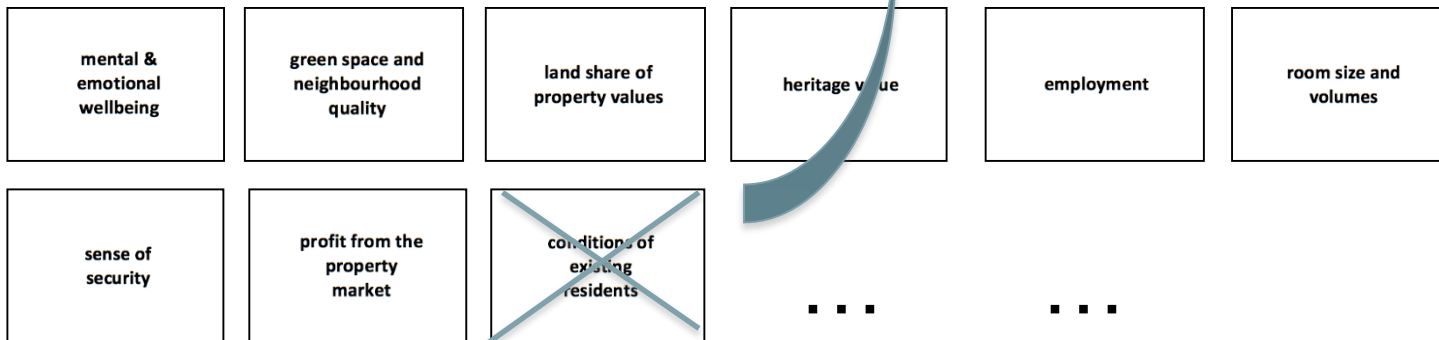
More important



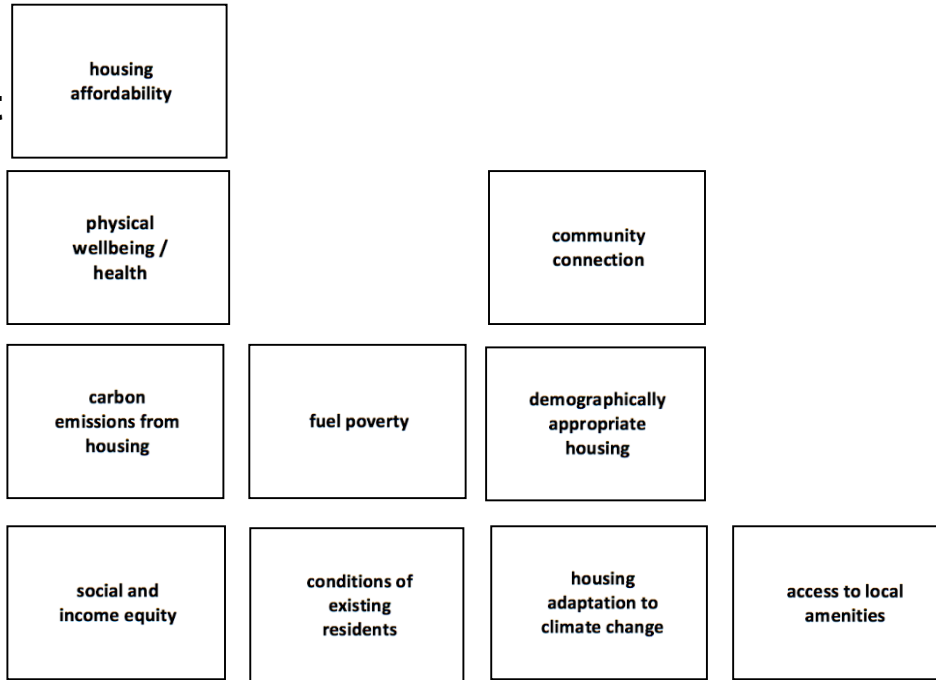
What counts as **ONE** move:

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2. Move one card from the second list **to the bottom** of the core list

Less important



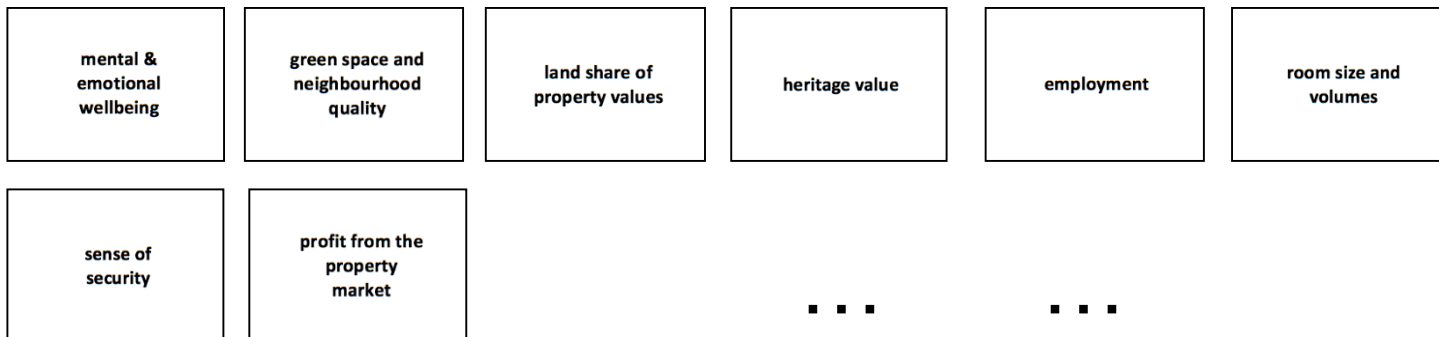
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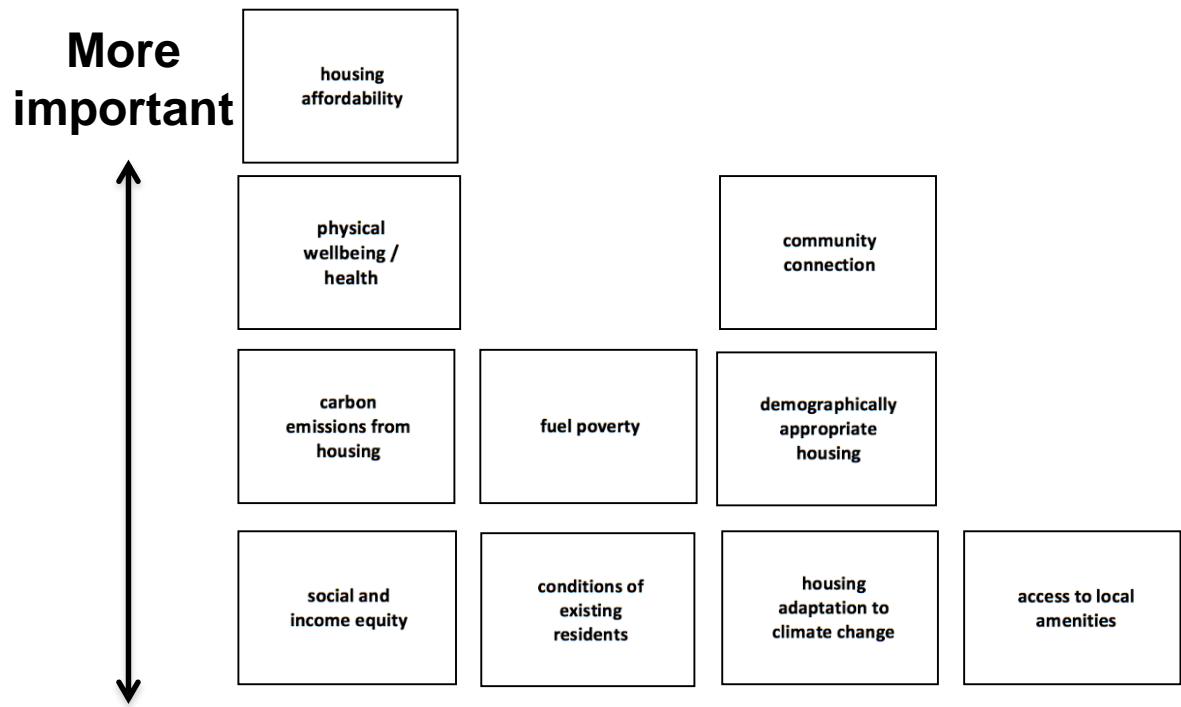


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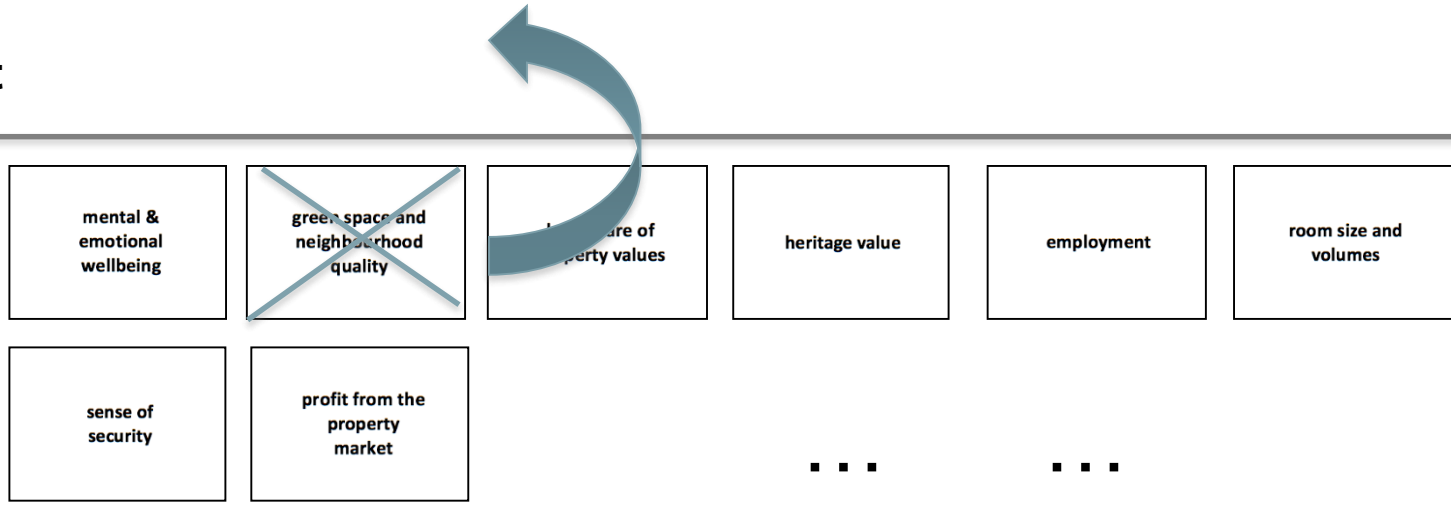




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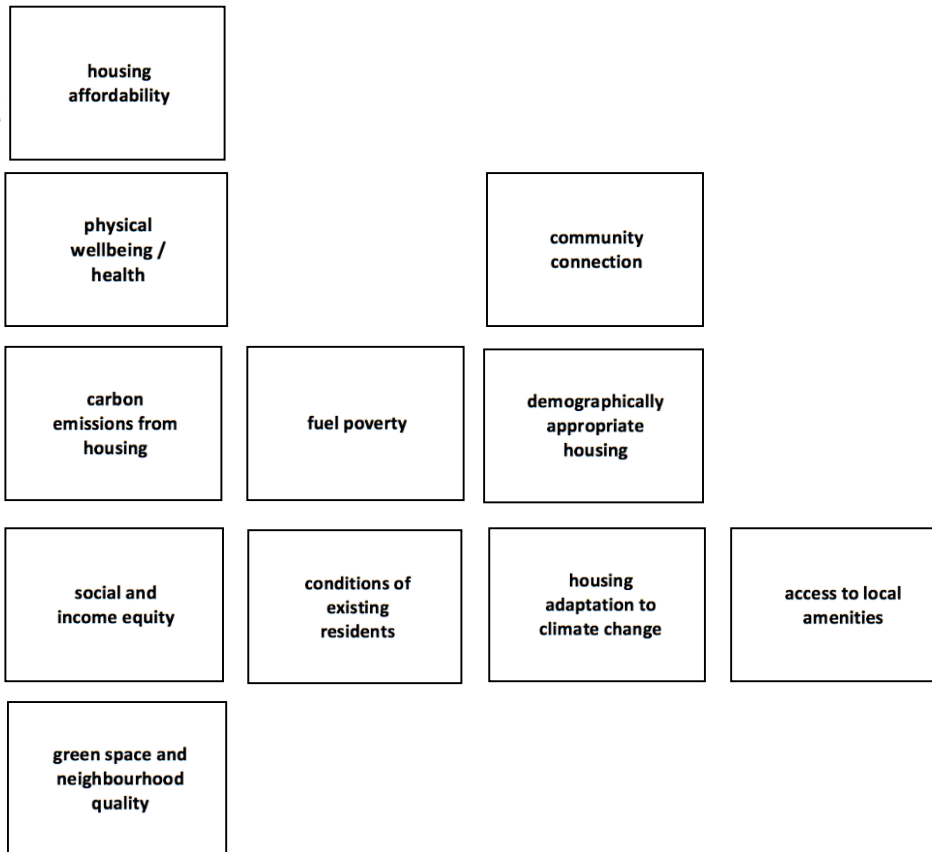
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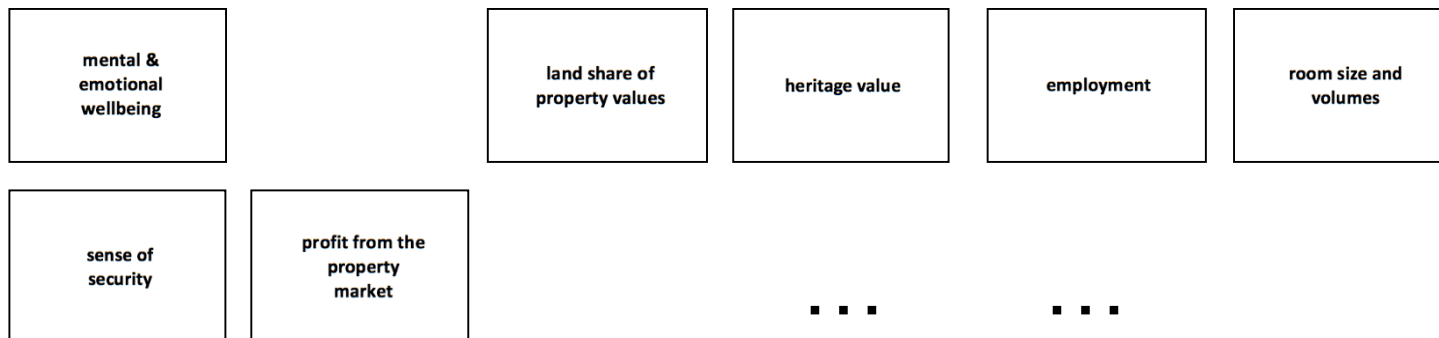


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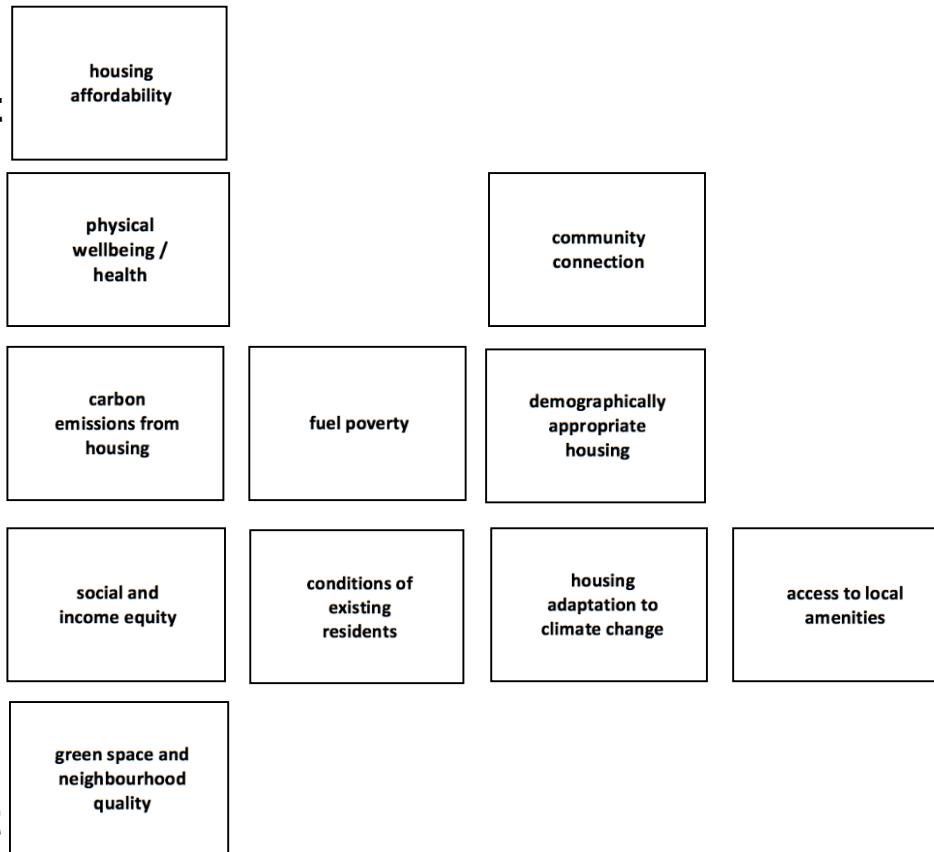
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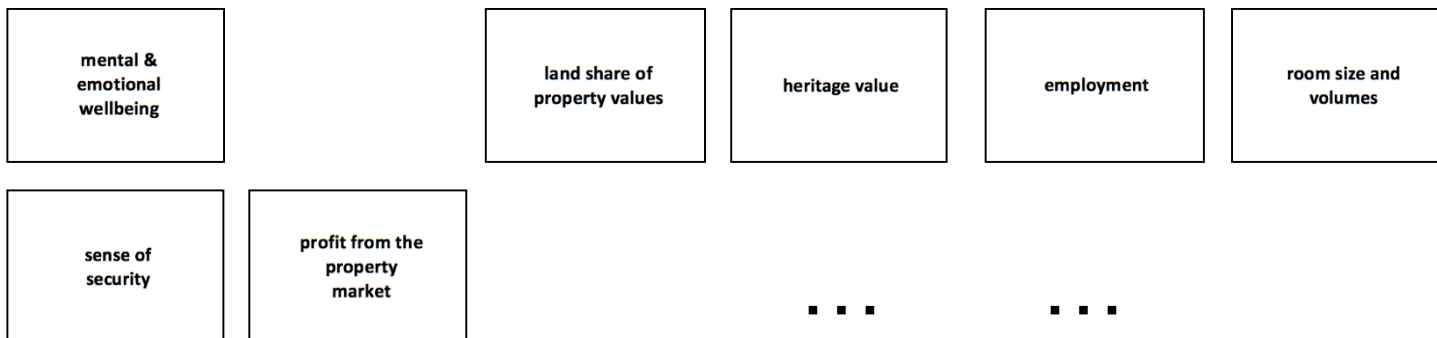
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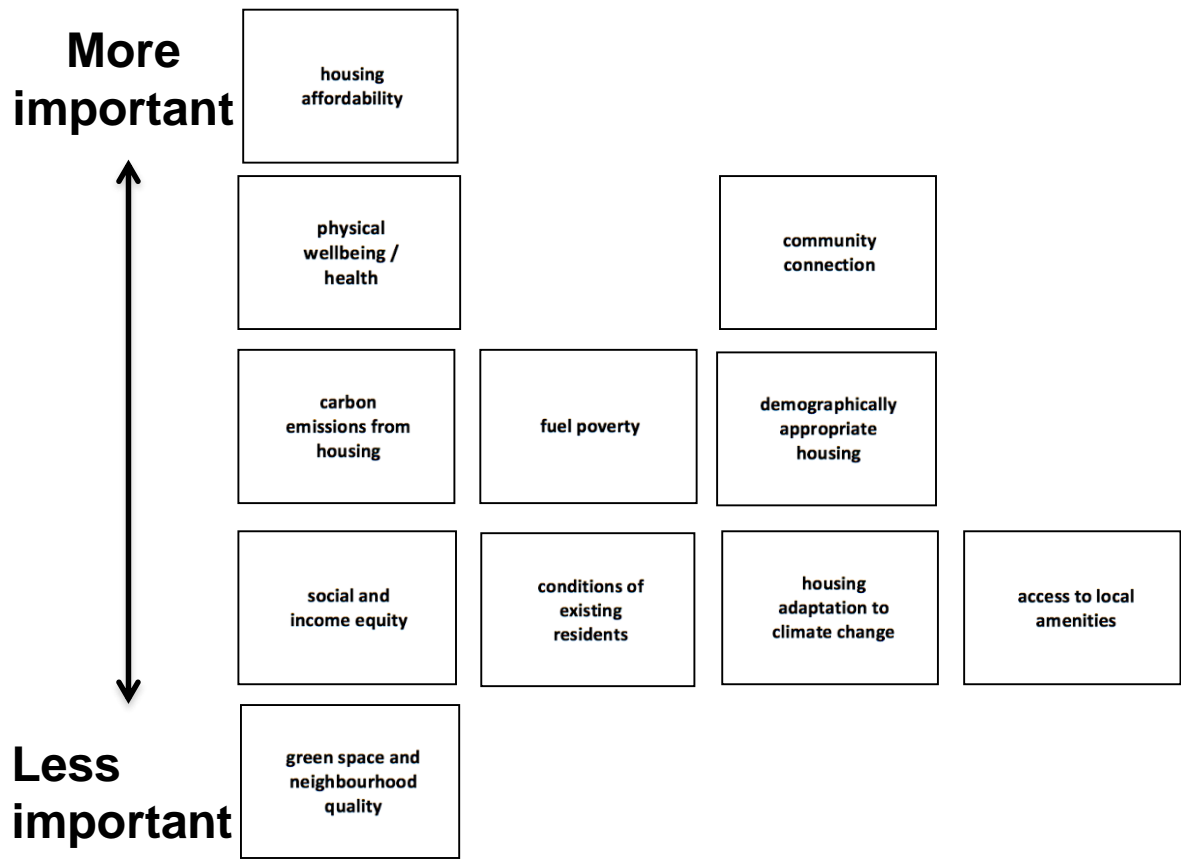


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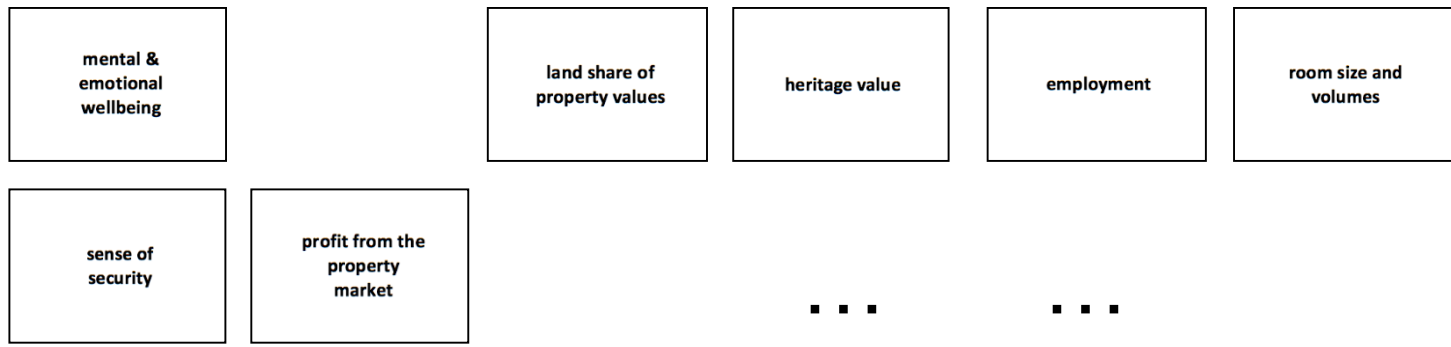
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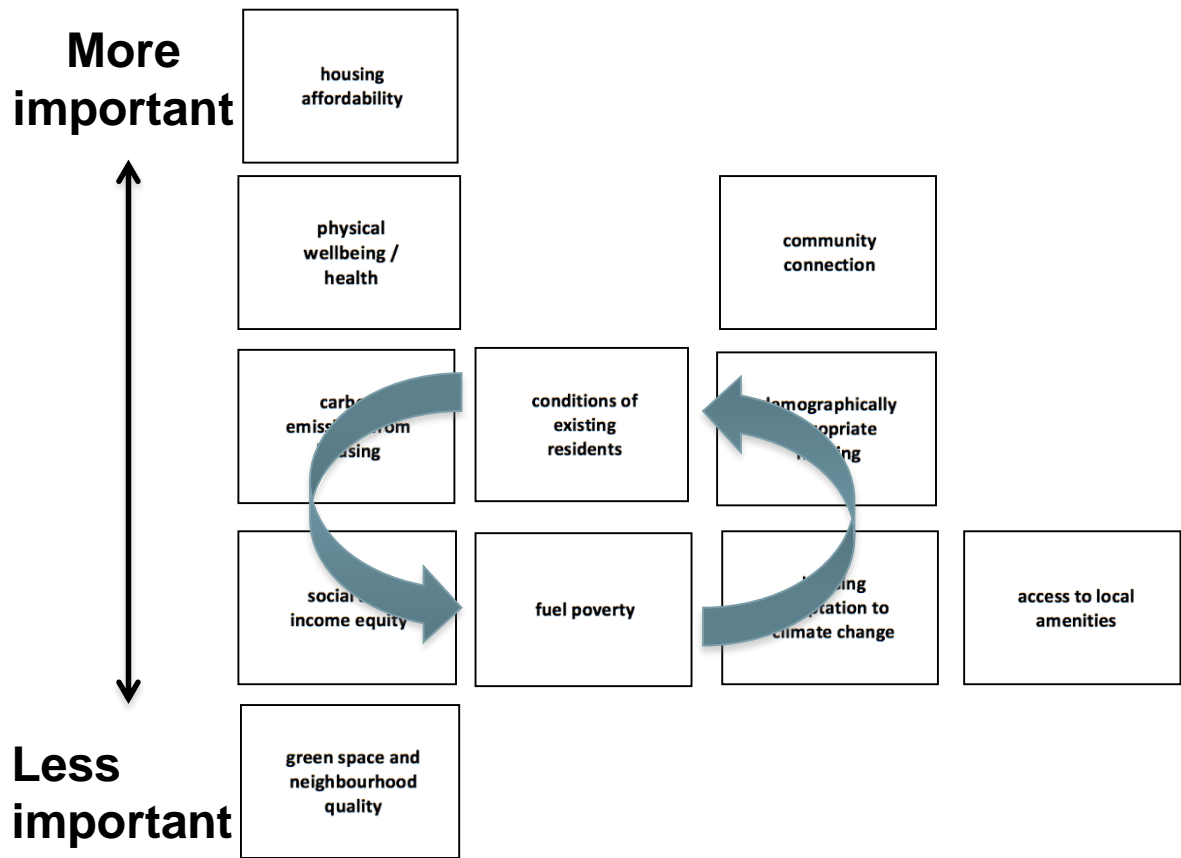




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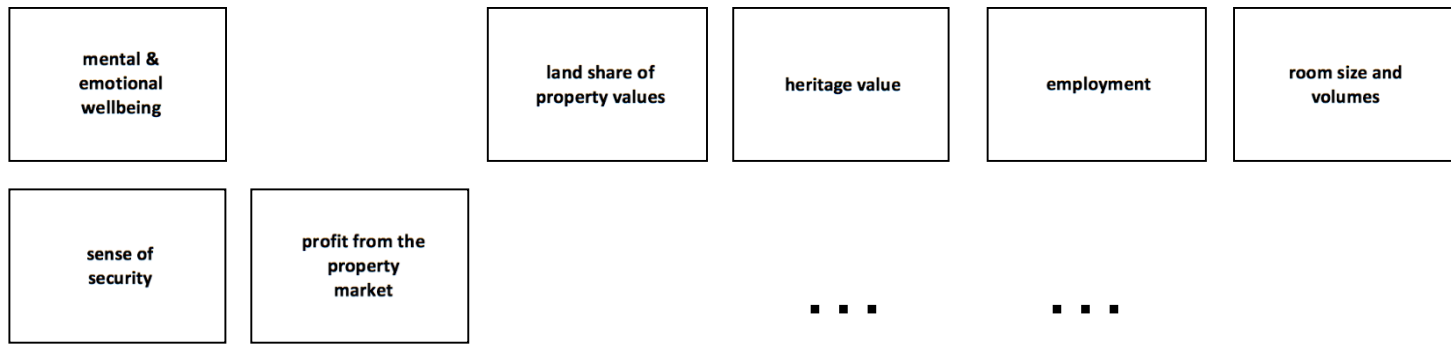
4-cards rule: There shall not be more than 4 cards in on line (use 2 moves for interchanging)





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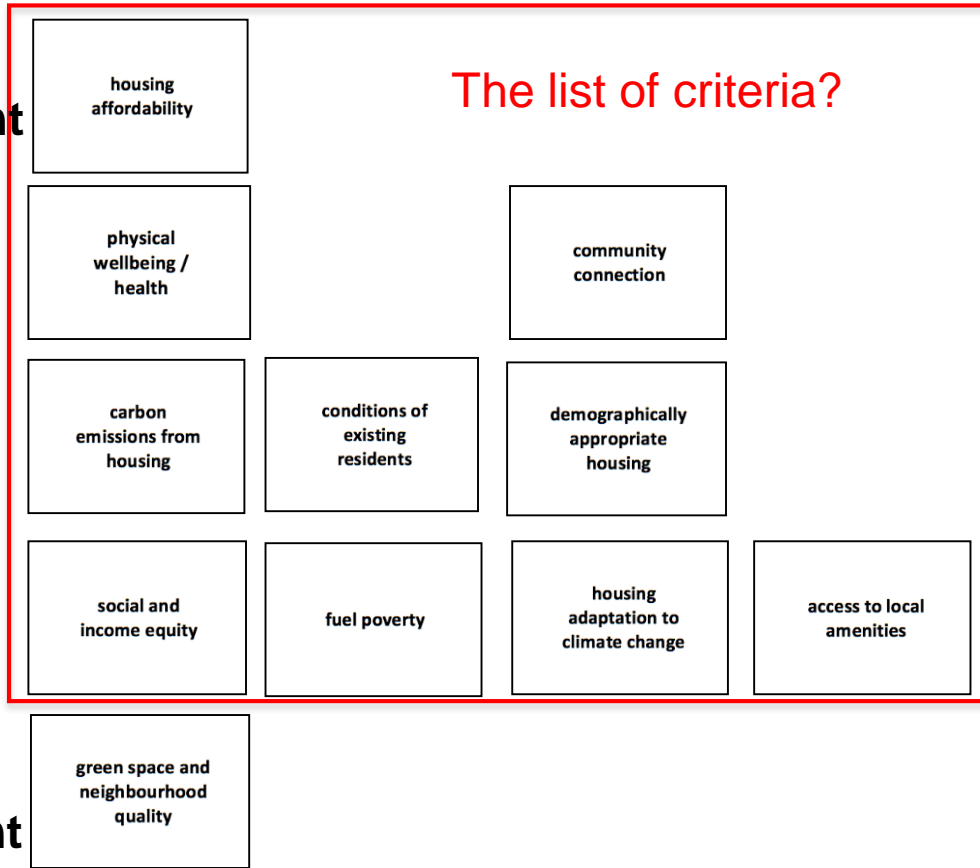
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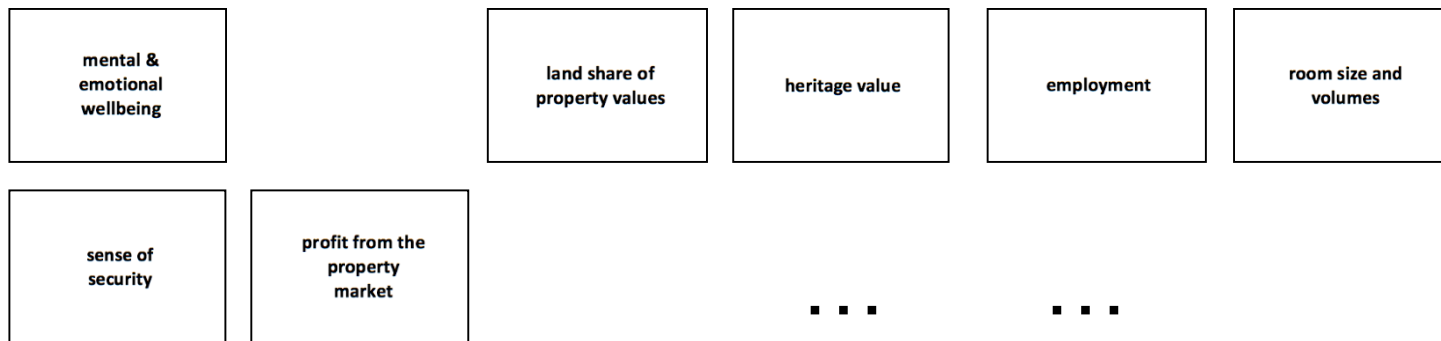
More important



Less important



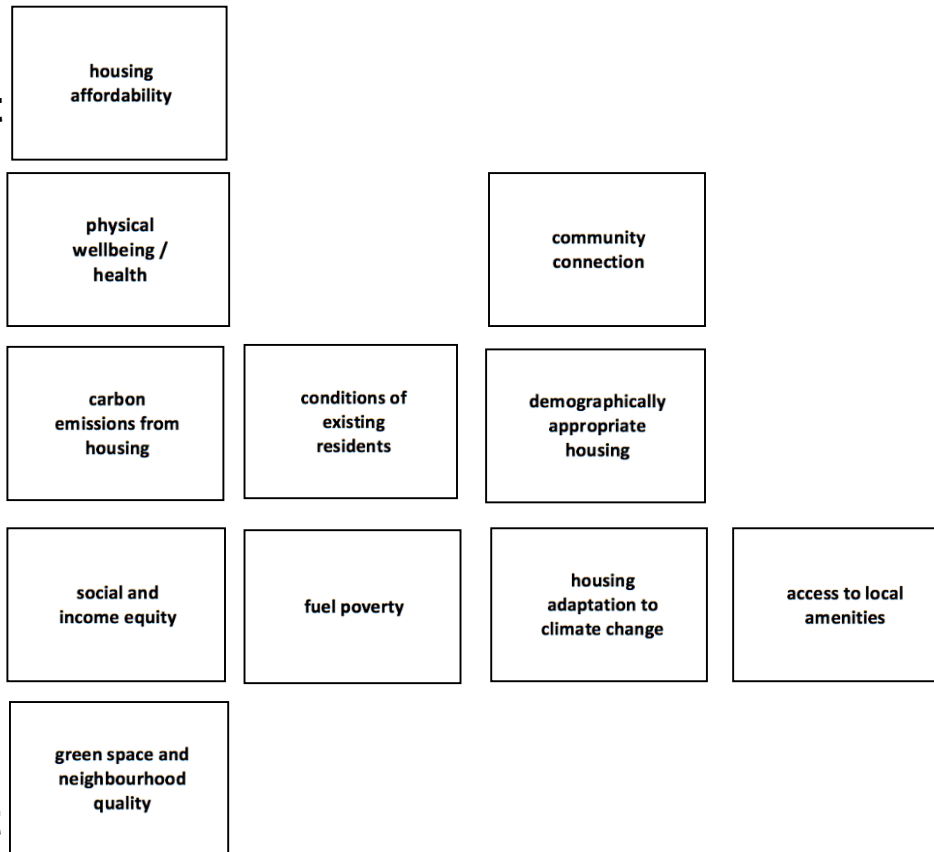
- Please iterate the process twice
- We will draw a line after up to 10 criteria
- Vote



More important



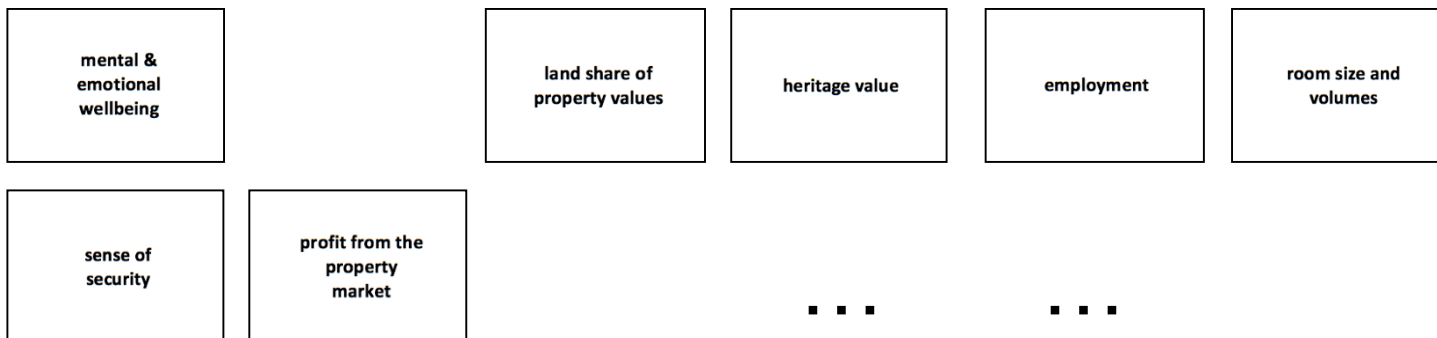
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Group 1

1. Carbon emissions from housing
2. Community connection
3. Fuel poverty
4. Housing adaptation to climate change
5. Housing affordability
6. Mental & emotional wellbeing
7. Physical wellbeing/health
8. Policy coherence
9. Social and income equity

Group 2

1. Carbon emissions from housing
2. Community connection
3. Fuel poverty
4. Green space and neighbourhood
5. Housing affordability
6. Mental
7. Physical wellbeing/health
8. Social and income equity

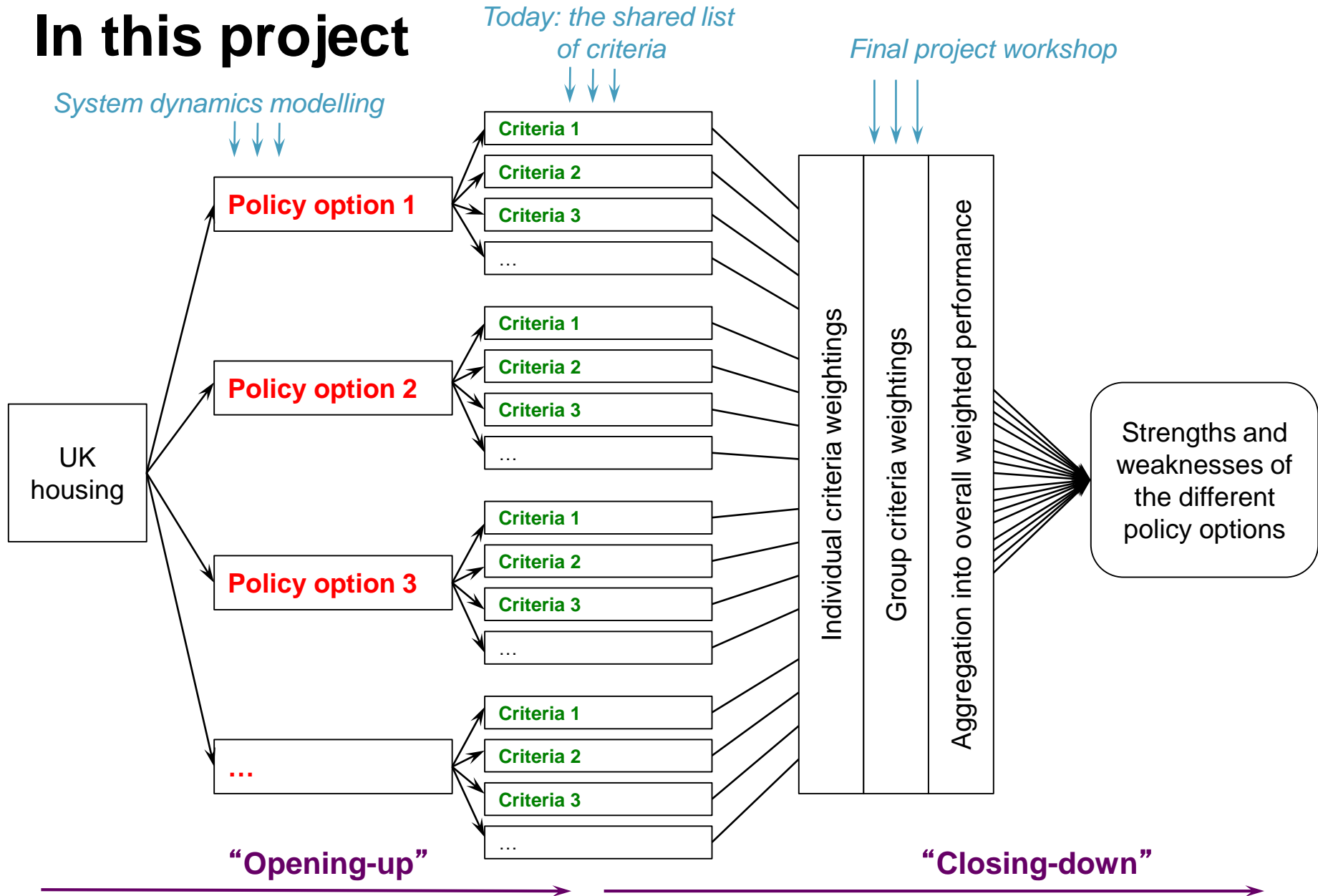
Group 3

1. Carbon emissions from housing
2. Community connection
3. Employment
4. Fuel poverty
5. Green spaces and neighbourhood quality
6. Housing adaptation to climate change
7. Housing affordability
8. Physical wellbeing/health

Next steps

- This is the revised list of criteria for the interactive MCDA
- Next steps:
 - Your inputs for developing measurable indicators for these criteria
 - The policy performance will be assessed against these criteria in the SD simulation modelling
 - Interactive MCDA workshop in early 2014

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