The Fairness Factor: Winning Public Support for Europe's Energy Transition

Assessing participation, cost distribution, and opportunities to strengthen Appliance Efficiency Policies

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Outline

- About me
- Why fairness matters
- Why EE appliance policy matters
- Procedural justice
- Distributional justice
- Summary and conclusions

- Independent consultant
- Working in policy support – research, evaluation - mostly on appliance policy
- Self fund research on several topics and occasionally present results at conferences
- This work presented at British Institute of Energy Economics Research conference September 2025

Why fairness matters (intrinsic)

Me

Why fairness matters (intrinsic)

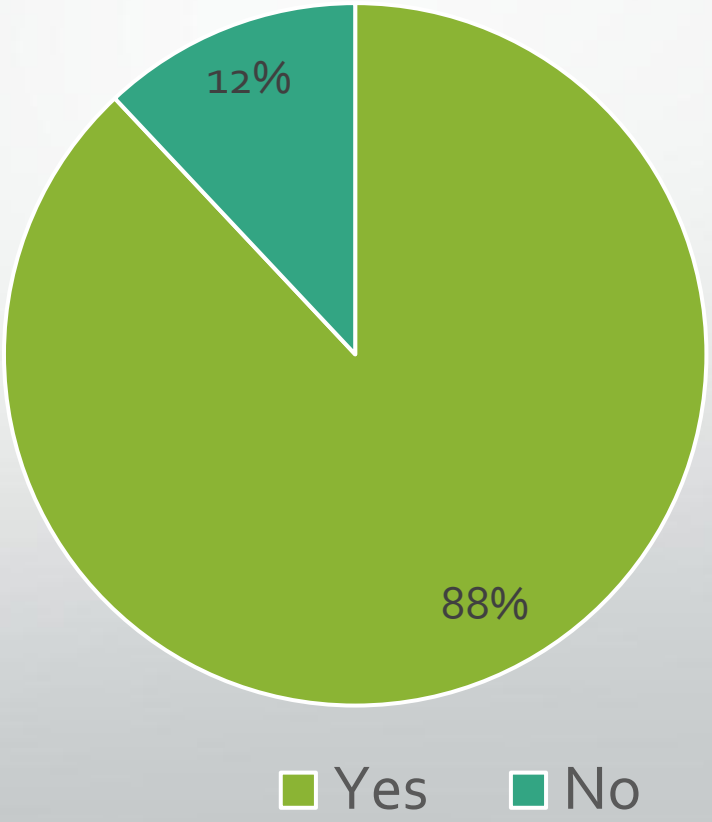
"It's not fair!!"

Why fairness matters (in the wider world)

"Fairness isn't just the right approach economically, legally and morally.
It is also the foundation of political legitimacy.
If the climate plan is unfair – or feels unfair – it will fail."
Friends of the Earth 2025

Backed up by survey data
(Eurobarometer 2022 survey results)

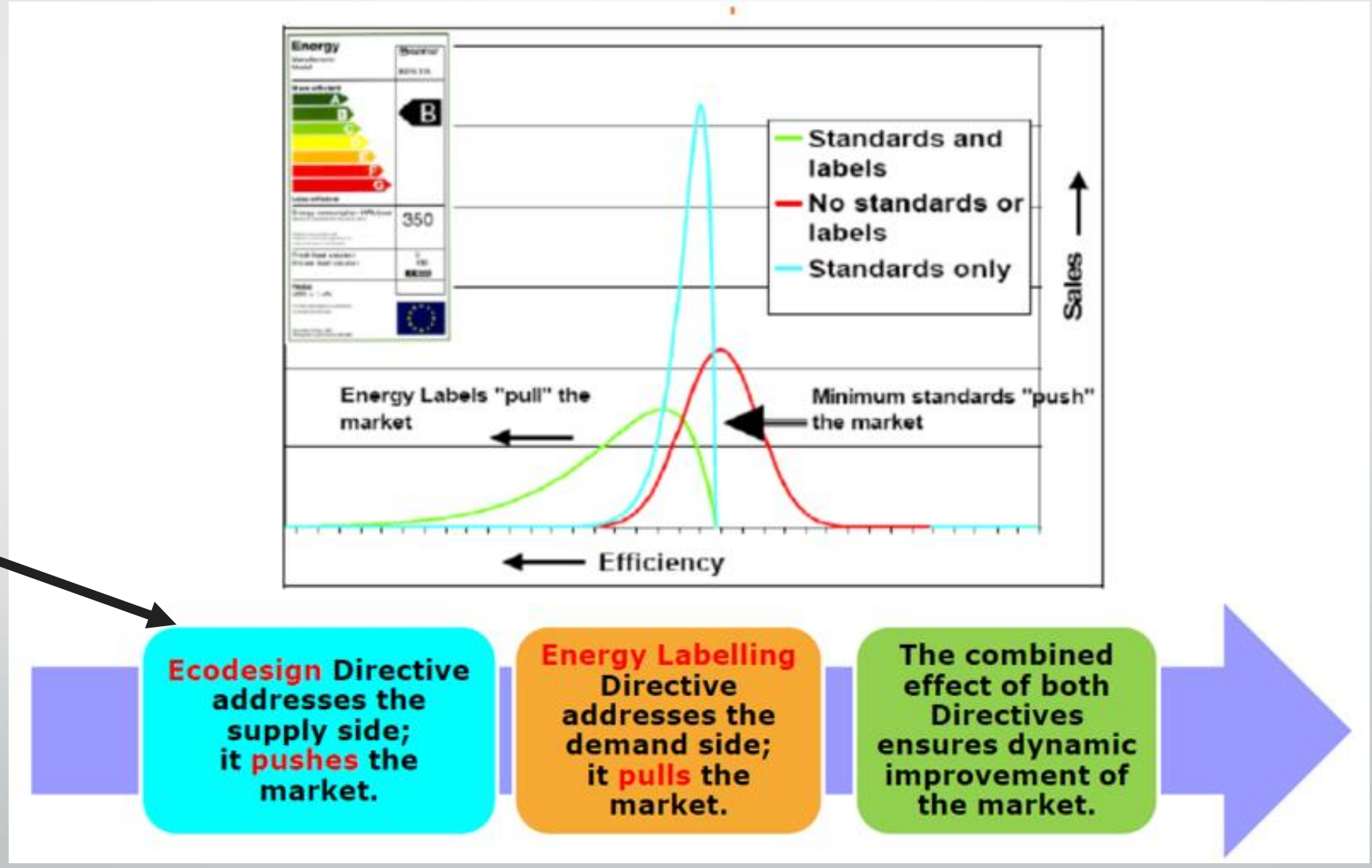
Do you support a green transition that leaves no one behind?



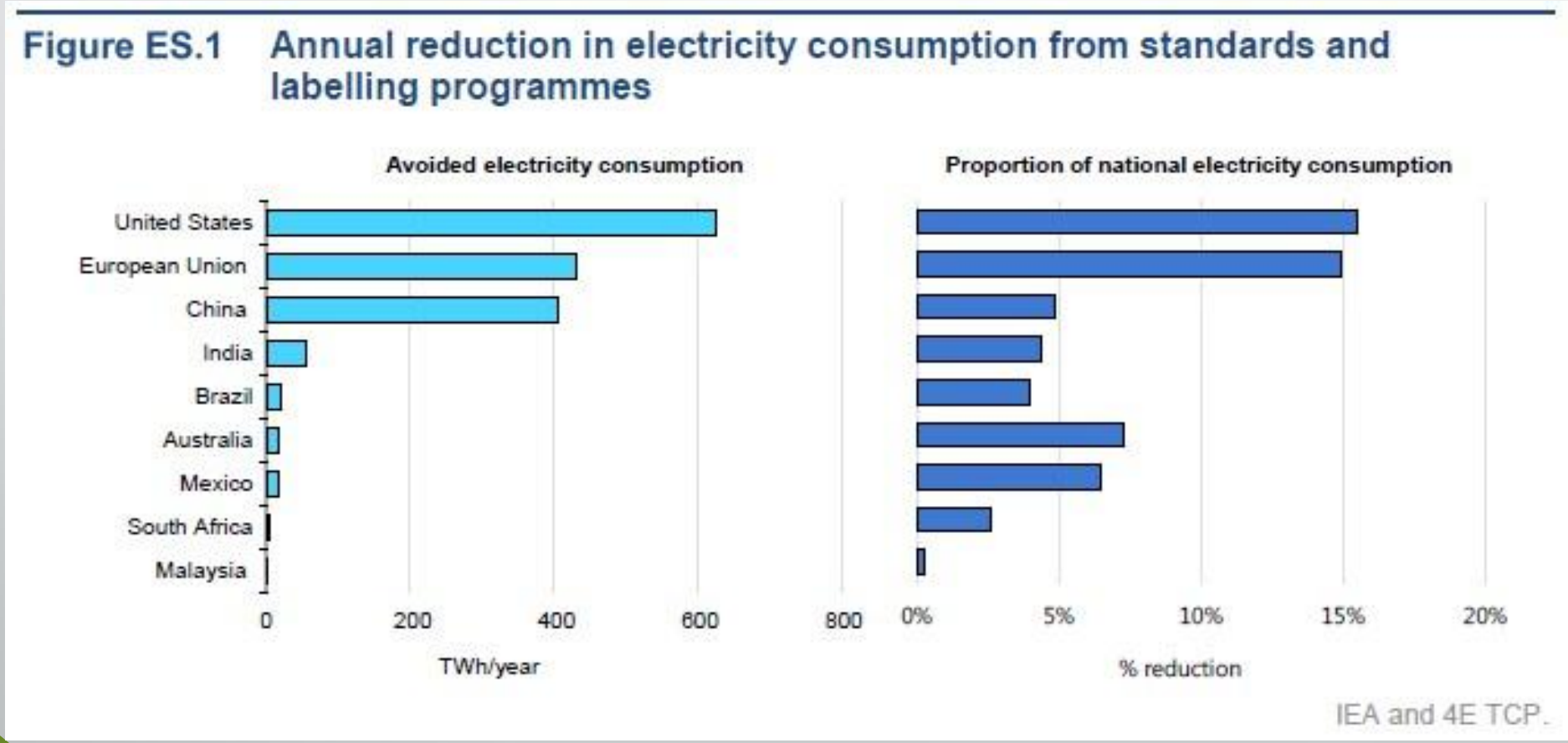
Why EU appliance policy?

What is EU appliance policy?

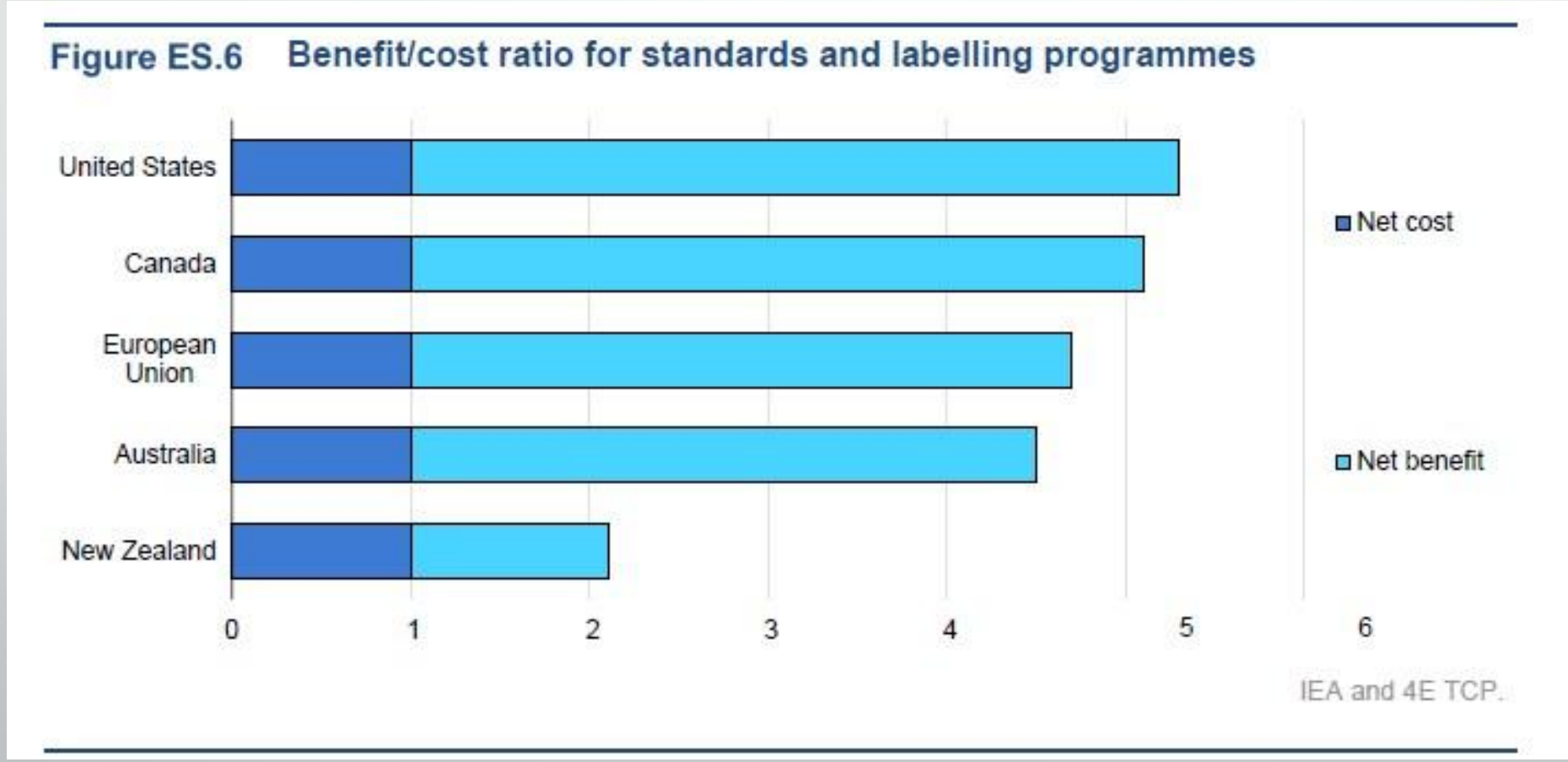
Minimum Energy Performance Standard MEPS



Why are EU appliance policies important?



Why are EU appliance policies important?



Regulate many consumer products

Domestic Ovens

Ecodesign | Energy Label

Range Hoods

Ecodesign | Energy Label

Hobs

Ecodesign

Dishwashers

Ecodesign | Energy Label

Washing Machines

Ecodesign | Energy Label

Washer Dryers

Ecodesign | Energy Label

Tumble Dryers

Ecodesign | Energy Label

Vacuum Cleaners

Ecodesign

Fridges and Freezers

Ecodesign | Energy Label

Air Conditioners and Comfort Fans

Ecodesign | Energy Label

Local Space Heaters

Ecodesign | Energy Label

Light Sources

Ecodesign | Energy Label

Electronic Displays

Ecodesign | Energy Label

Smartphones and Tablets

Ecodesign | Energy Label

Computers

Ecodesign

Solid Fuel Boilers

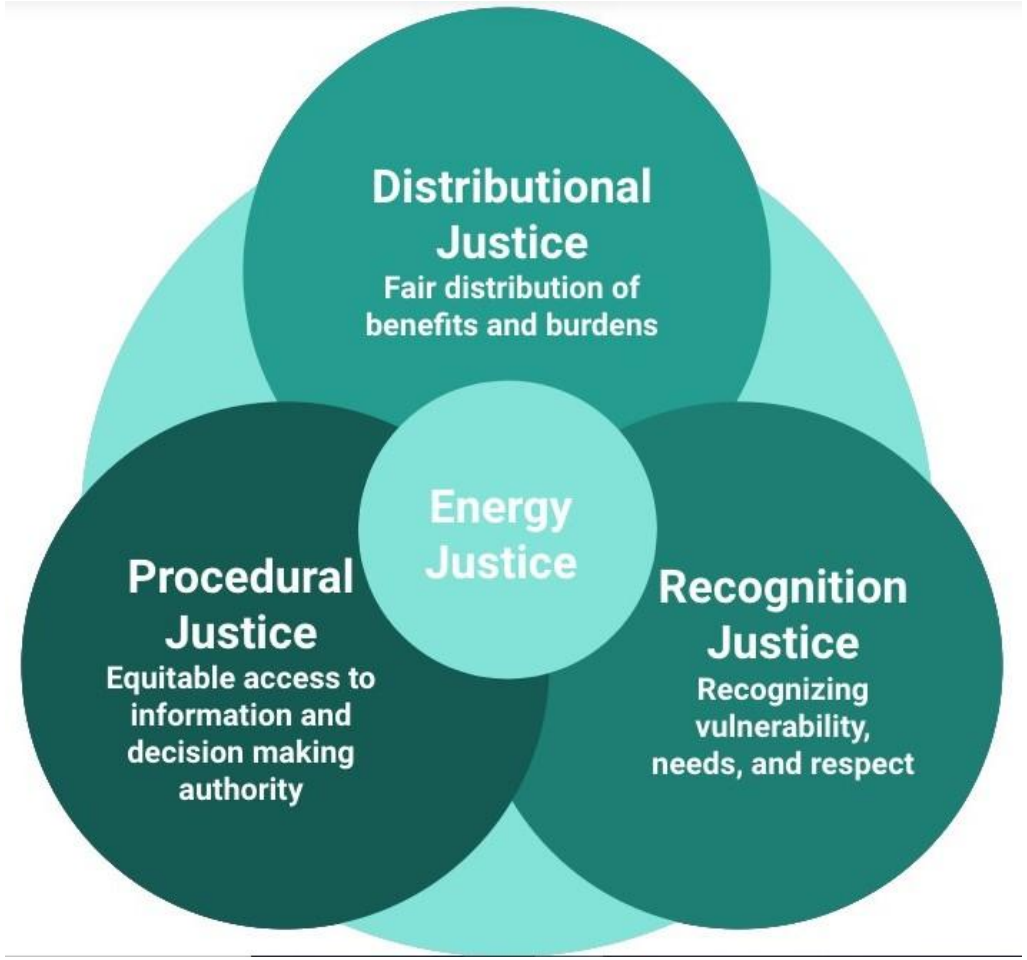
Ecodesign | Energy Label

Space Heaters

Ecodesign | Energy Label

Water Heaters

Ecodesign | Energy Label



Types of energy justice

Procedural justice:
Stage zero: Test standard development

Test standard

- You need to have this before you can set…

MEPS

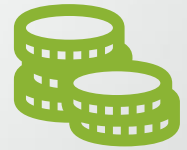
- Ecodesign (in EU) (Minimum Energy Performance Standard)

Developing test standards takes resources

Time

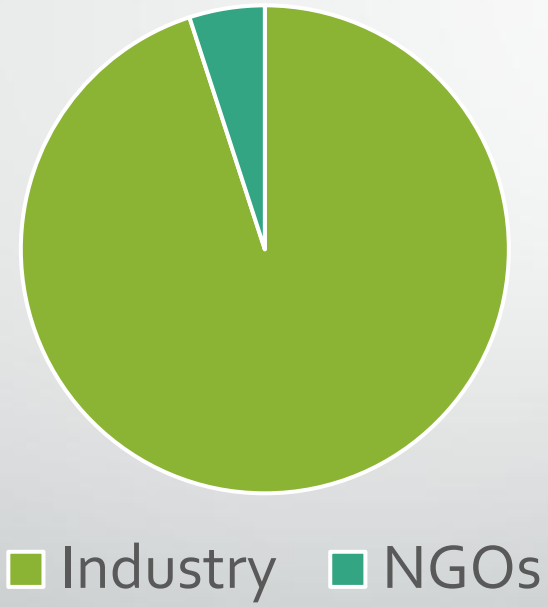
- Attending meetings
- Collating and analysing data

Other resources



- Market data
- Finding new solutions
- Running tests with new conditions
- Funding/undertaking round robin tests to check robustness and repeatability of test standards

Consumer representation on test standard working groups



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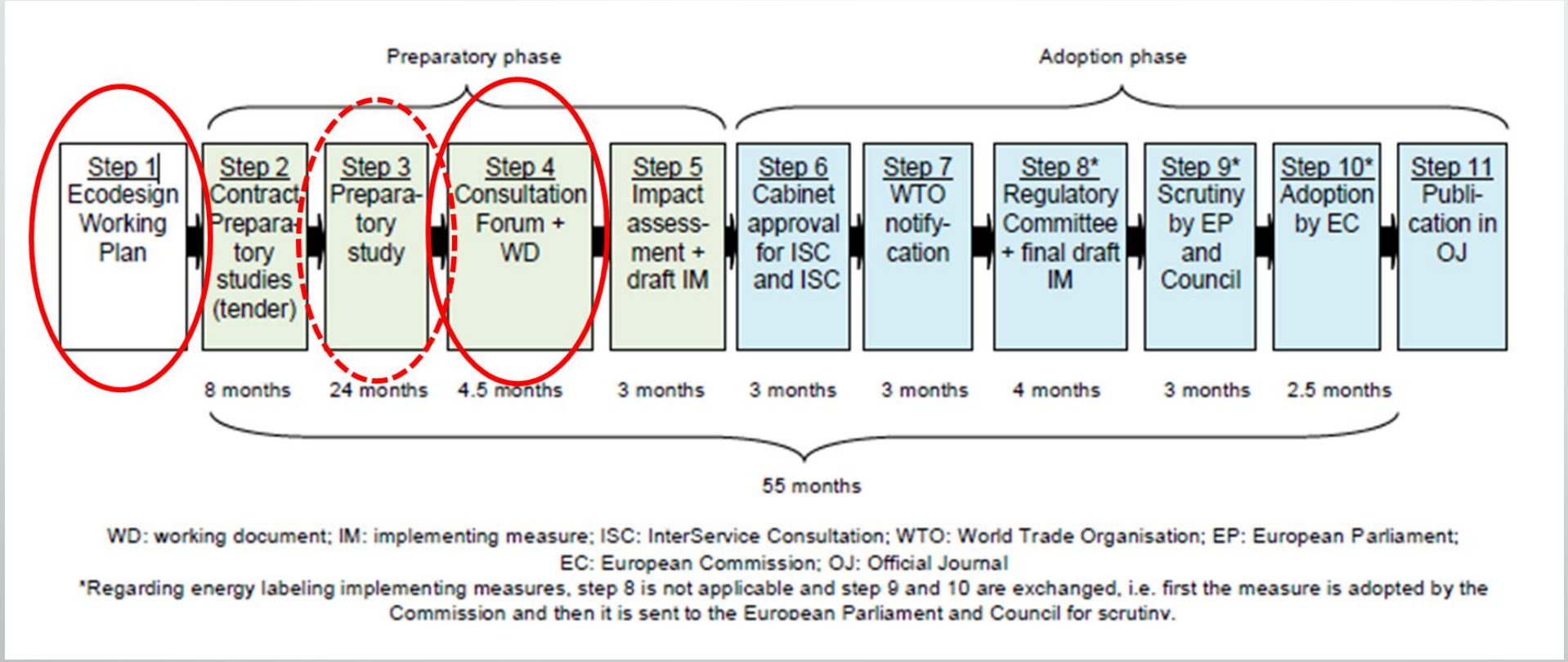
Procedural justice

Process to develop ecodesign and energy label regulations

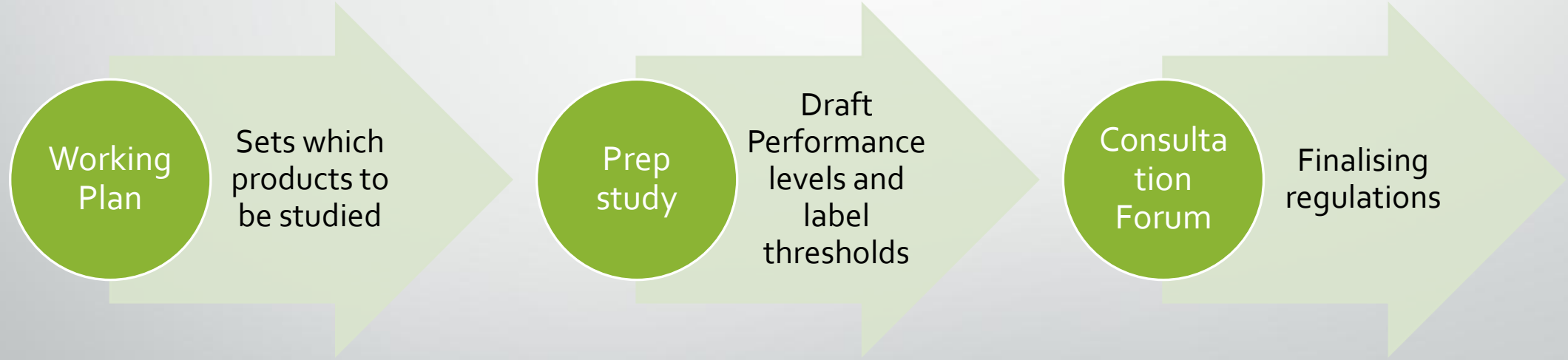


WD: working document; IM: implementing measure; ISC: InterService Consultation; WTO: World Trade Organisation; EP: European Parliament; EC: European Commission; OJ: Official Journal

*Regarding energy labeling implementing measures, step 8 is not applicable and step 9 and 10 are exchanged, i.e. first the measure is adopted by the Commission and then it is sent to the European Parliament and Council for scrutiny.

Procedural justice

Points of stakeholder involvement



Ecodesign consultation forum

ANEC

€ from the European Commission

Ecodesign preparatory studies best opportunity to affect regulations

Calls for evidence

Stakeholder meetings

Other consultation channel

European Commission | Have your say

- Calls for evidence
- Opportunity to give feedback on draft regulations

Issues with consumer involvement: many, complex products

Domestic Ovens

Ecodesign | Energy Label

Range Hoods

Ecodesign | Energy Label

Hobs

Ecodesign

Dishwashers

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Computers

Ecodesign

Solid Fuel Boilers

Ecodesign | Energy Label

Space Heaters

Ecodesign | Energy Label

Water Heaters

Ecodesign | Energy Label

So how just is procedure?

✓

- Consumers represented in process by NGOs who are funded to do this
- Possible for individuals and other organisations to express views

X

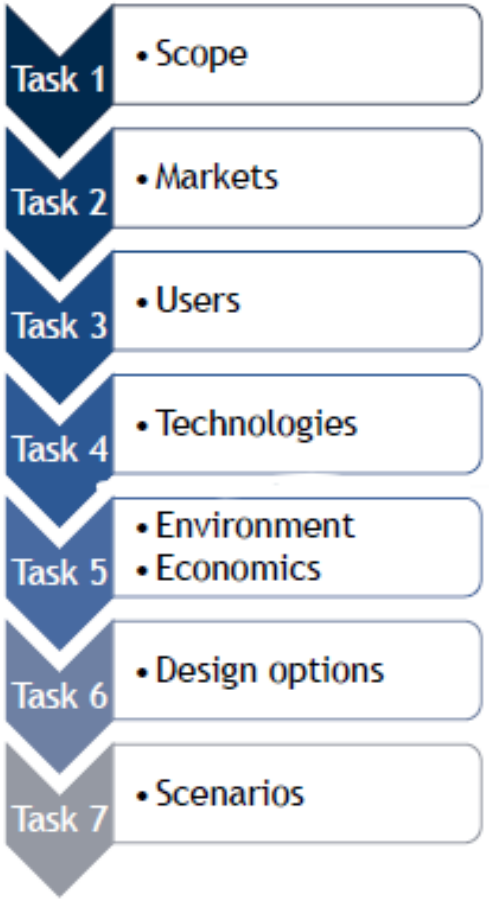
- Complex products and regulation
- Many products
- Preparatory studies not publicised

Distributional justice

Ex-ante assessments:
Ecodesign preparatory studies

Preparatory study: Methodology

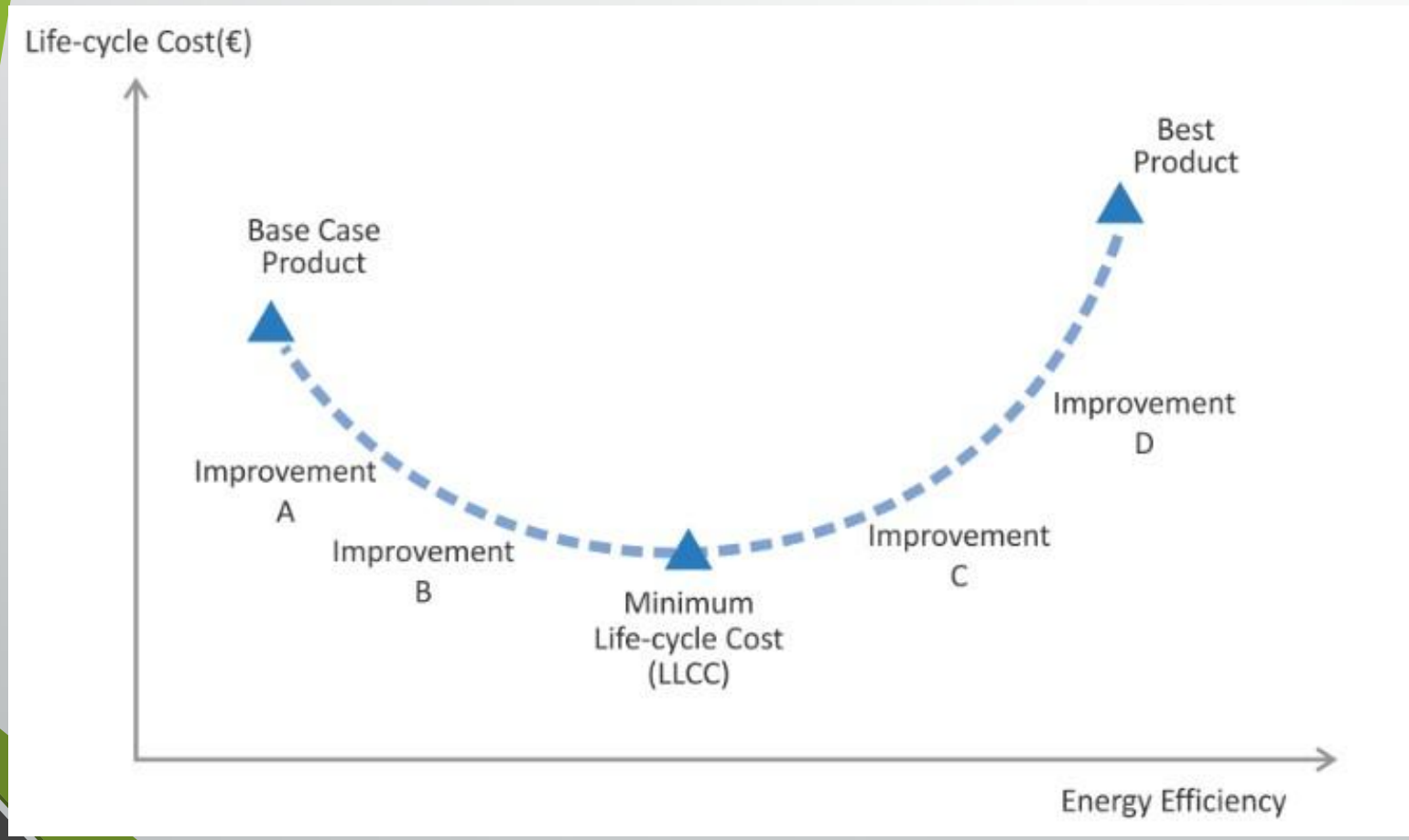
MEErP: OVERVIEW



- Task 1 - Scope
  (definitions, standards and legislation, 1st screening)
- Task 2 – Markets
  (volumes and prices)
- Task 3 – User
  (product demand side)
- Task 4 - Technologies
  (product supply side, includes both Best Available Technology (BAT) and Best Not Yet Available Technology (BNAT)
- Task 5 – Environment & Economics
  (Life Cycle Analysis (LCA) & Life Cycle Costing (LCC) of the Base Cases)
- Task 6 – Design options
  to improve LCA + LCC;
- Task 7 – Scenarios
  (Policy, scenario, impact and sensitivity analysis)

Assess LCC of options

Distributional justice:
Ex-ante – designed to benefit all



Select MEPS so minimum life-cycle cost (total cost of ownership)
Generally predict initial, purchase, cost will be higher but lower running costs.

Ex-post assessments of costs and markets

- US study of nine products 2000-2010 found mean decrease in purchase cost of $12 vs predicted mean increase of $148

- Separate US study of clothes washers found purchase prices decreased

- Australian study (fridges) found number and of range models increased
- 40% energy reduction **combined with** 20% to 50% price reduction.

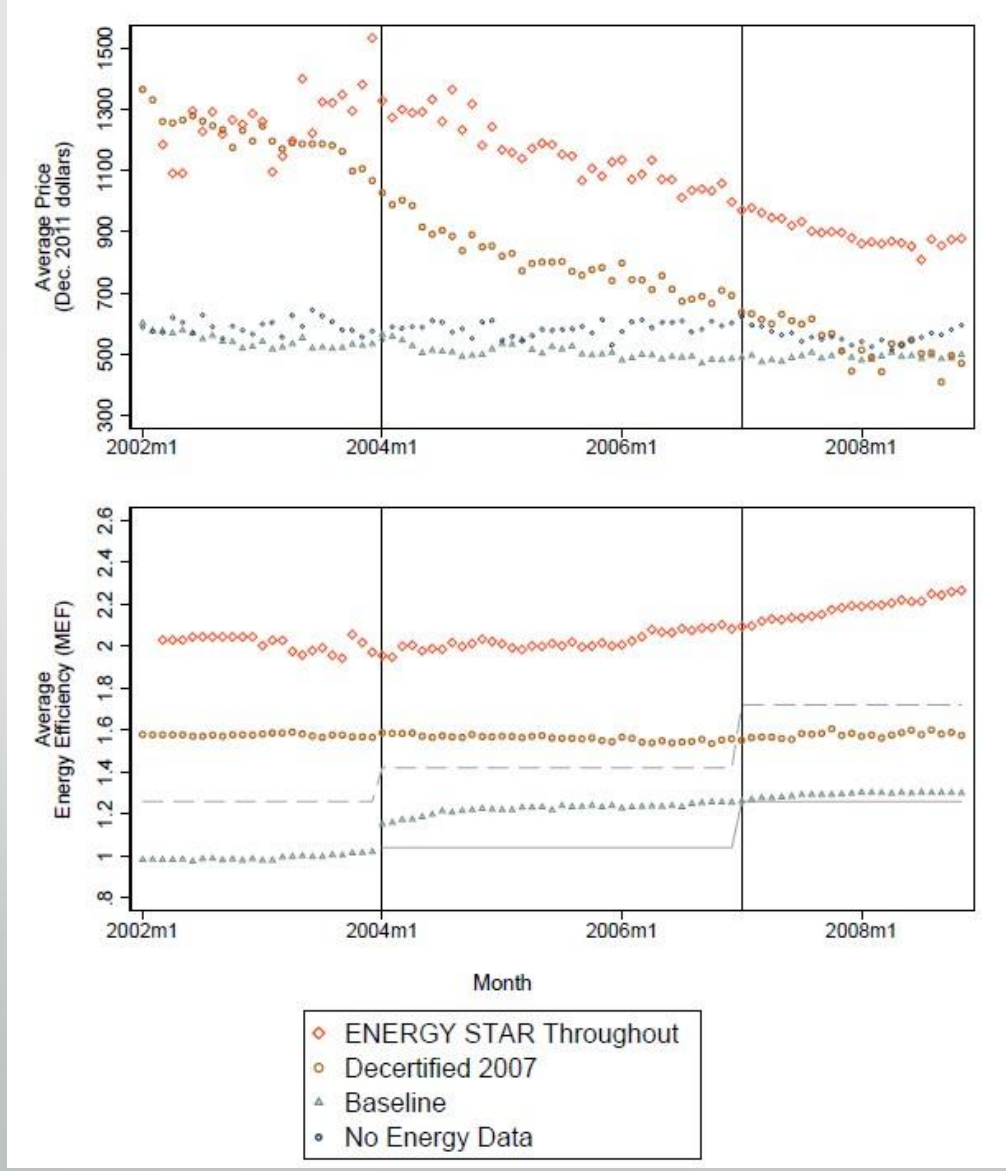
No EU studies

That's the overall effect but what about variation with different income levels?

- One MEPS study:
- Effect of 2007 US Washing Machine MEPS on efficiency and price by different market segments

Distributive effects of MEPS?

US washing machines study



Baseline model prices constant
Medium efficiency models became more affordable

+

Efficiency of baseline models increased significantly

=

Lower income consumers get greater efficiency and more choice with no increase In upfront cost

Study of effect of EU energy labels on washing machines

- Found strong reaction from manufacturers to changes in label boundaries
- Competition meant no green premia – high efficiency machines available at all price points
- Good for low income consumers – can afford high efficiency machines

BUT different regulations for products with same function but different users

Foster Porter, Cutforth, Dunbar, Olson and Denkenberger 2022

Domestic washing machines and tumble dryers

- In dwelling – used by medium and high income households
- MEPS for WMs for 35 years
- MEPS more stringent

Machines used in launderettes

(or apartment buildings)

- Used by low income households (based on evidence)
- MEPS for WMs for only 15 years and less stringent
- No MEPS for large capacity WMs and tumble dryers

Results in….

Low income households paying more per kg for washing and drying

Clothes washing in EU?

Domestic washing machines and tumble dryers regulation

- Domestic washing machines and tumble dryers have had energy labels since 1996
- Ecodesign regulations (MEPS) since 2010

Regulation of machines used in Laundrettes

- No MEPS or labels for commercial washing machines or dryers – under development (take effect 2030?)
- (worked started in 2013 but stalled due to lack of test standards)

No data on washing machine and dryer use segmented by income.
Anecdotal evidence suggests same pattern as US. If so

Results in….

Low income households paying more per kg for washing and drying

Uneven benefit re heating and cooling in US

Foster Porter, Ringeisen, Dunbar, Cutforth, Fulbright and Denkenberger (2024)

Structural difference in housing market:- low income families more likely to rent than to own their own home and more low-income renters living in multi-family and manufactured homes

Multi family and manufactured

- Electric resistance zonal heating – no MEPS
- Electric resistance furnaces - MEPS last updated 30 years ago
- Wall and window mounted AC - MEPS introduced 10 years later than central

Own home, single dwelling

- Central AC – MEPS introduced 10 years earlier and regularly updated
- Gas furnaces (boilers), MEPS introduced 1987 and regularly updated.

Results in….

Low income households paying more for heating and cooling, or inadequate heating and cooling resulting in health issues

Heating and cooling in EU?

Regulations more likely to cover several products providing same function

For example: gas and electric space heaters in same regulation

Regulations reviewed and updated more often

Generally a 5 year cycle

(Although some very delayed)

So fewer disparities in regulation by product type

Use of housing and heating type by income more complex than in US. Varies widely by country.

Overall effect??

So how just is distribution?

- Designed so that all consumers benefit
- US and Australian studies find benefit greater than predicted
- US study of WMs found lower income consumers benefited more
- EU study of WM label found no low income benefitted

- No ex-post studies of effect of **EU** MEPS – overall or distribution
- US study found MEPS **coverage** of WMs, TDs and HVAC disadvantaged low income consumers
- Reason to believe EU WM +TD regs also regressive. No studies

Recognitional justice

Most difficult aspect to get hold of

When writing paper found only two examples in Energy Efficiency literature, one largely about income effects (back to distribution?). None on MEPS and labels.
Difficult to know which groups being disadvantaged by appliance policies–
Roma and other travelling communities? (low voltage appliances not covered)

Conclusions and recommendations

1. More research needed!
To generate evidence on:

- Effect of **EU** MEPS and energy labels on the market – on average and by cost segment and for as many different product groups as possible.
- Are there product groups, like WMs and TDs in the US, where usage is split by income and regulation differs and so benefits not evenly distributed?
- What groups' needs are not being recognised and represented by current regulations and how could this be addressed?

Conclusions and recommendations

2. Change EU procedures

- Consider possible distributional effects of product coverage when setting product priorities (Working Plan)
- Make process for developing and revising regulations more transparent. Publicise preparatory studies and require contractors to actively engage civil society.

Conclusions and recommendations

3. Introduce MEPS and energy labels for second-hand goods

- Bought mostly by low income consumers
- Can be very inefficient
- Tie in to circular economy thinking – encourage repair but without energy waste

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Extra slides

Change in regulation

- Ecodesign regulation (energy related products) replaced by
- Ecodesign for Sustainable Products Regulation (ESPR) – entered force 2024
  - Much wider scope - any consumer product excluding food and medicines (e.g. textiles and furniture,)
  - Digital Product Passport
  - First regulations take effect from 2030?
  - Ecodesign Consultation Forum replaced by Ecodesign Forum – broadened membership