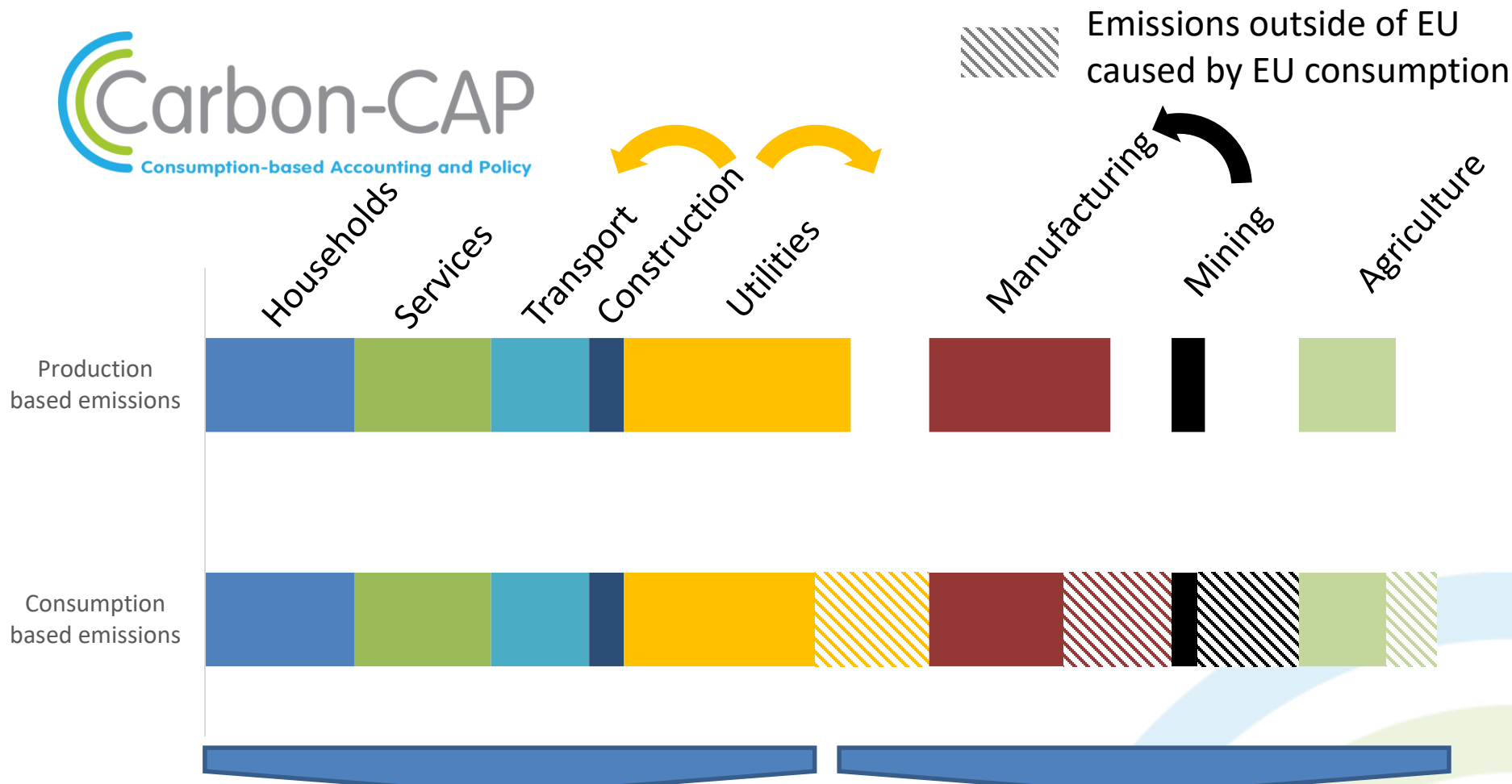


Researcher summarizing pickup rates for policy instruments and intervention options

Prof. Karsten Neuhoff

Carbon Consumption-based Accounting and Policy
Dissemination event, Brussels, 11 October 2016

A decorative graphic in the bottom right corner consisting of three concentric, partial arcs in light blue, light green, and light grey.



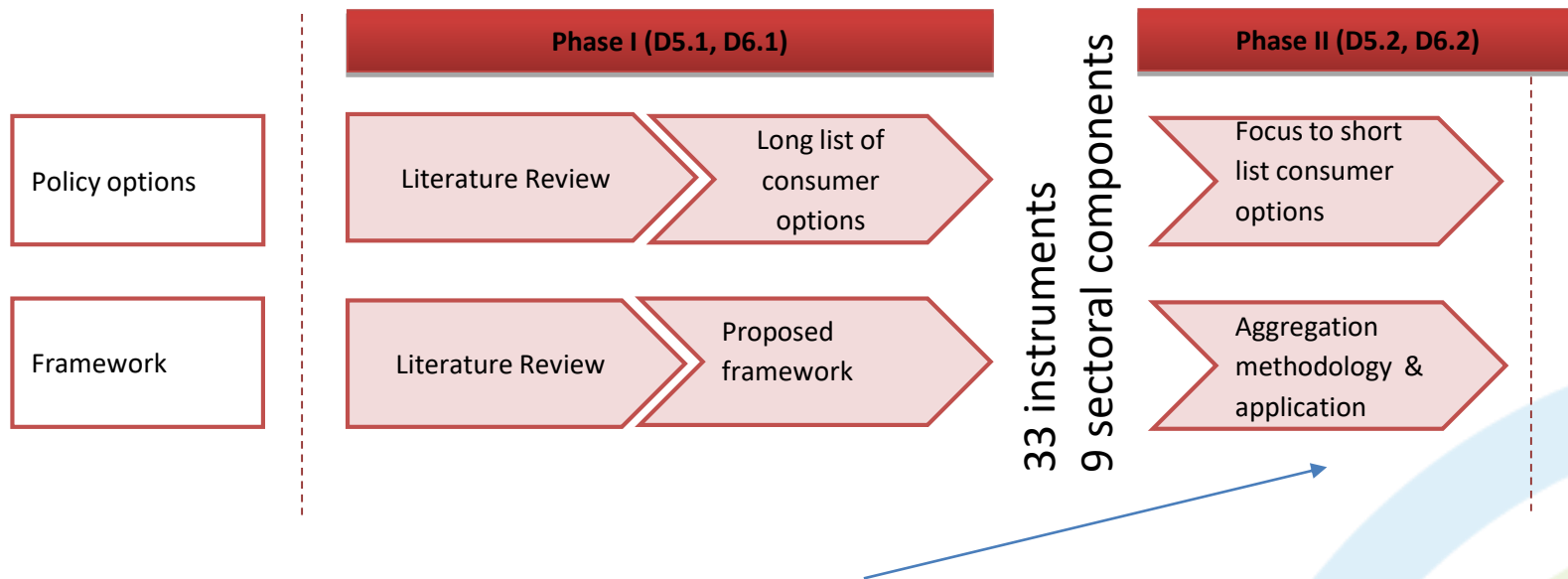
- Success of measures tailored to consumption decisions (efficiency standards, financial support, advice).
- Higher feasibility and fiscal preference for energy consumption taxes over production based policies (e.g. oil cartel).

- Largely production based policies like EU ETS with limited impact on consumption choices.
- Consumption based policies so far largely voluntary (labelling).



Our Focus

Survey and prioritisation of consumption oriented policy instruments



Criteria for instrument evaluation:

- Equity and flexibility (DIW) - primarily in terms of distributional impact within the EU
- Legal feasibility – e.g. with respect to trade implications (EU, WTO)
- International political viability - avoiding international tensions, e.g. due to spillover effects
- Administrative and Institutional Feasibility – data, enforcement, EU institutional relationships

2. Regulatory and Administrative instruments

Mandatory									
Transport		Food	Buildings			Paper & plastics	Textiles	Consumer goods & machinery	
Vehicles	Fuels		Fabric	Heat	Elec				
Regulatory standards									
9	9	3	14	5	3	6	6	14	
Licenses									
4	4	2	6	2	2	6	4	6	
Government procurement									
9	9	9	9	9	9	9	9	9	
Recycling requirements									
9	0	5	14	0	0	14	9	14	
Product ban									
1	1	1	2	1	1	2	1	2	
Waste targets, requirements and/or prices									
9	0	5	14	0	0	14	9	14	
Deposits / refunds on purchased goods									
7	0	2	0	0	0	10	10	10	
Limits on percentage ownership or use									
1	0	0	1	0	0	0	0	1	

Voluntary									
Transport		Food	Buildings			Paper & plastics	Textiles	Consumer goods & machinery	
Vehicles	Fuels		Fabric	Heat	Elec				
Sector trade body standards									
9	9	3	9	5	5	9	6	14	
Business emission agreements									
9	9	9	14	9	9	14	5	14	
Supply chain procurement requirements									
20	20	14	20	14	14	20	20	20	
Voluntary agreements by trade organisations									
15	15	7	10	10	10	10	10	15	
Extension of product lifetime									
4	0	3	9	0	0	6	0	6	
Retailers product choice									
20	20	14	0	14	14	20	20	20	

3. Economic and financial instrument

"Externality" pricing (Consumer cost-raising)

Transport		Food	Buildings			Paper & plastics	Textiles	Consumer goods & machinery
Vehicles	Fuels		Fabric	Heat	Elec			
C-intensive materials charge								
14	0	7	20	0	0	20	14	20
Carbon embodied charge								
5	3	1	7	2	2	3	2	5
Product user fees								
6	6	0	9	3	3	0	0	9
Waste targets, requirements and/or prices								
9	0	5	14	0	0	14	9	14
Minimum price limits								
6	6	3	9	3	3	9	6	9

Subsidy / incentives (Consumer cost-reducing)

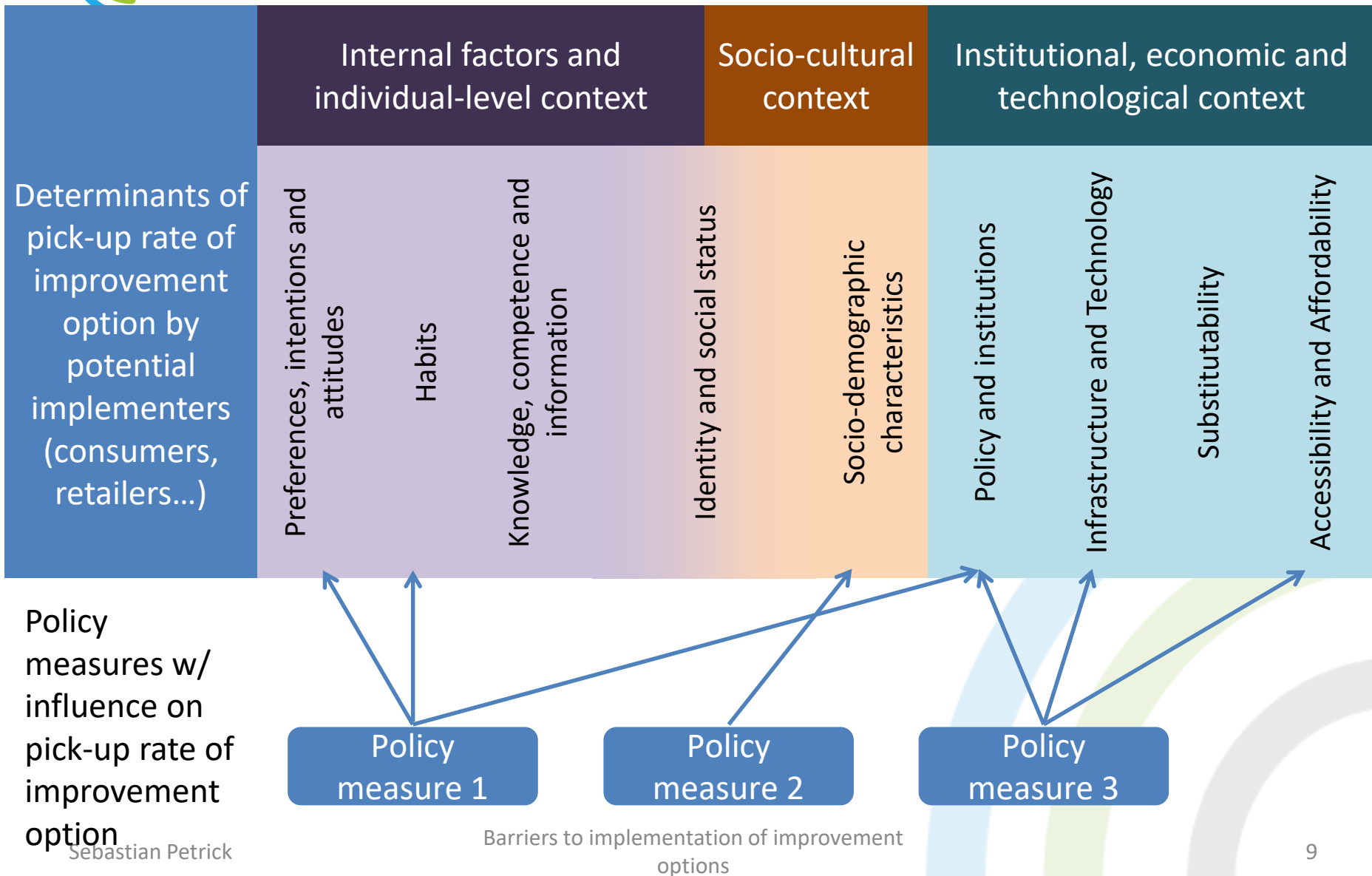
Transport		Food	Buildings			Paper & plastics	Textiles	Consumer goods & machinery
Vehicles	Fuels		Fabric	Heat	Elec			
Subsidy								
9	14	7	9	9	6	0	5	9
Deposits / refunds on purchased goods								
7	0	2	0	0	0	10	10	10
Product tax incentives								
6	6	6	6	6	6	0	3	6
Trade Env. Goods and Services agreements - eg tariffs								
14	14	9	14	0	0	14	14	14
Preferential finance terms								
9	9	0	9	5	5	0	0	9

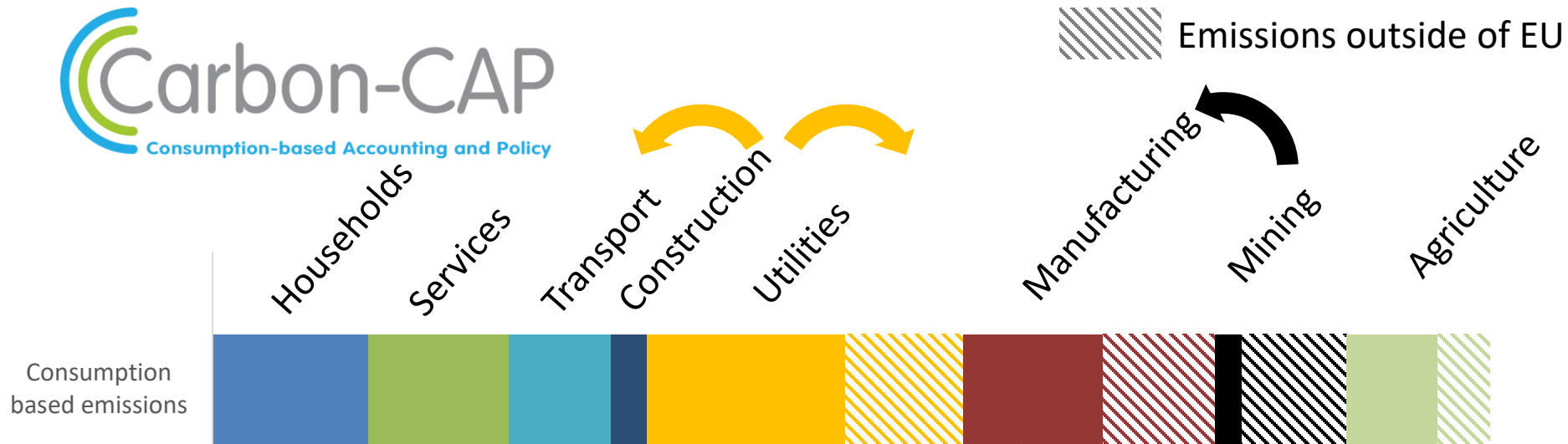
4. Enabling infrastructure and institutional

Mandatory									
Transport		Food	Buildings			Paper & plastics	Textiles	Consumer goods & machinery	
Vehicles	Fuels		Fabric	Heat	Elec				
Mandatory metering									
0	0	0	0	7	7	0	0	0	
Infrastructure improvements									
20	20	0	20	7	7	0	0	0	

Voluntary									
Transport		Food	Buildings			Paper & plastics	Textiles	Consumer goods & machinery	
Vehicles	Fuels		Fabric	Heat	Elec				
Enabling recycling									
5	0	2	7	0	0	7	5	7	
Enabling product sharing									
9	0	2	10	0	0	0	0	10	

	Informational Instruments	Regulatory and Administrative Instruments	Economic Instruments	Enabling infrastructure and institutional
Mandatory	Approved technologies lists	Mandatory Regulatory standards	Carbon intensive materials charge	Infrastructure improvement
		Recycling requirements and waste targets	Business emission agreements / allowances	
Voluntary	Information campaigns	supply chain procurement requirements		
	Rankings and awareness campaigns	Business emission agreements		





Buildings

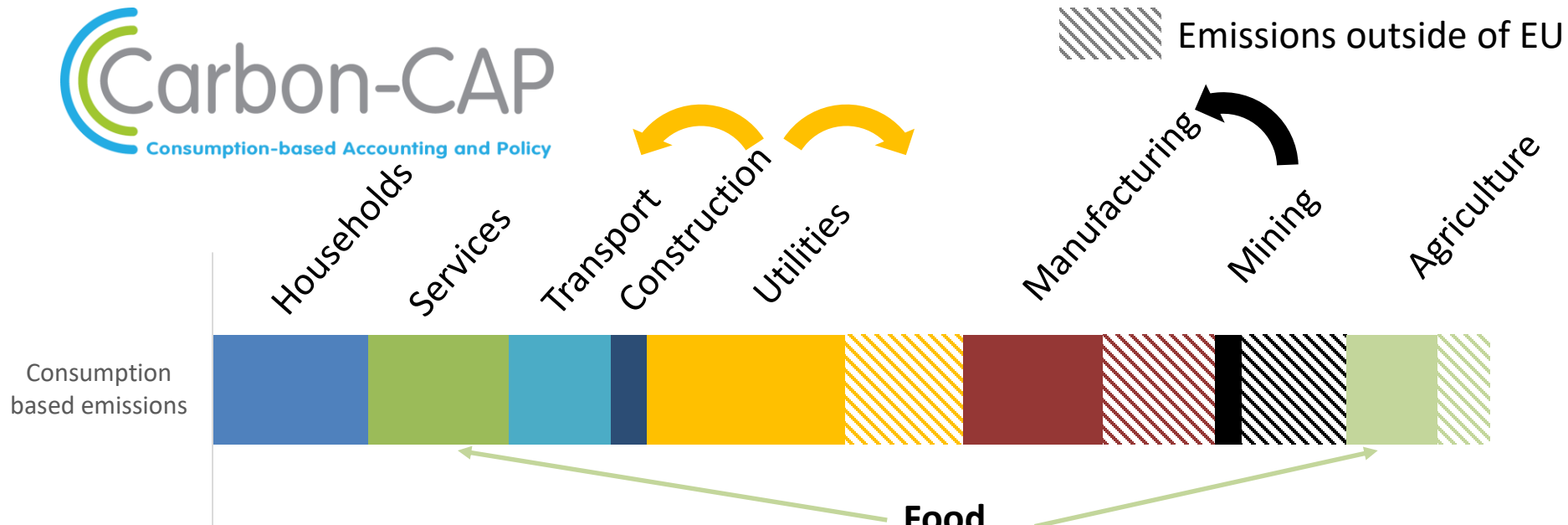
- zero-emission / passive houses
- refurbishment and renovation of buildings
- thermal insulation of houses
- use of low-carbon/renewable materials
- efficient use of cement and concrete.

Voluntary interventions scenario

- Supply chain procurement requirements
- Sector trade body standards
- Subsidy

Mandatory interventions scenario

- Approved technology lists
- Government procurement
- Regulatory standards
- C-intensive materials charge



- Reduction of food waste
- Reduction of meat consumption
- Reduction of dairy consumption
- Less foods with low nutrient value

Voluntary interventions scenario

- Awareness campaign
- Harmonize expiry date labeling
- Donation tax incentives for food
- Innovation funding
- Urges different portion sizing

Mandatory interventions scenario

- Food waste banned from land-fill
- Food waste fee
- Law to requiring donation of retail food waste

Households
Services
Transport
Construction
Utilities

Manufacturing
Mining
Agriculture

Consumption
based emissions



Buildings

- zero-emission / passive houses
- refurbishment and renovation of buildings
- thermal insulation of houses
- use of low-carbon/renewable materials
- efficient use of cement and concrete.

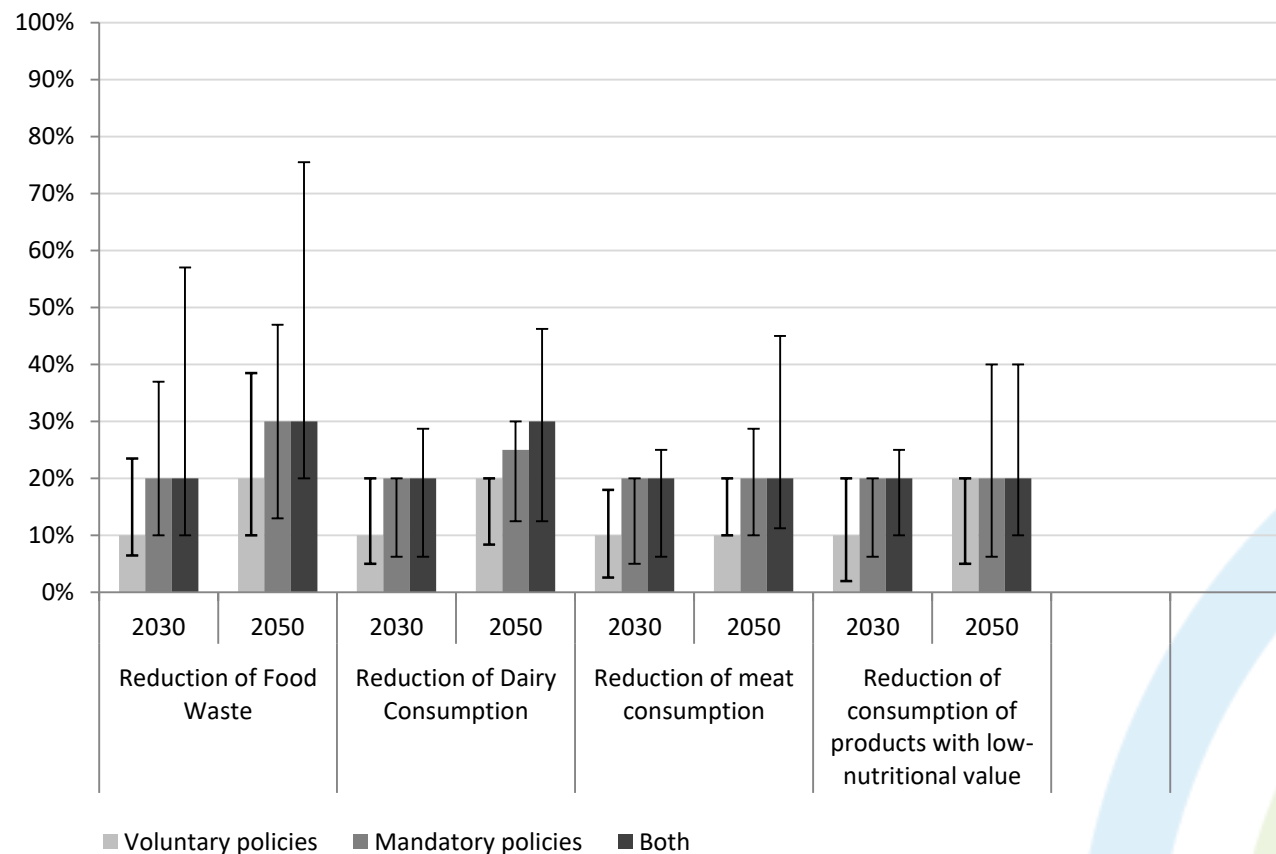
Food

- Reduction of food waste
- Reduction of meat consumption
- Reduction of dairy consumption
- Less foods with low nutrient value

Transport

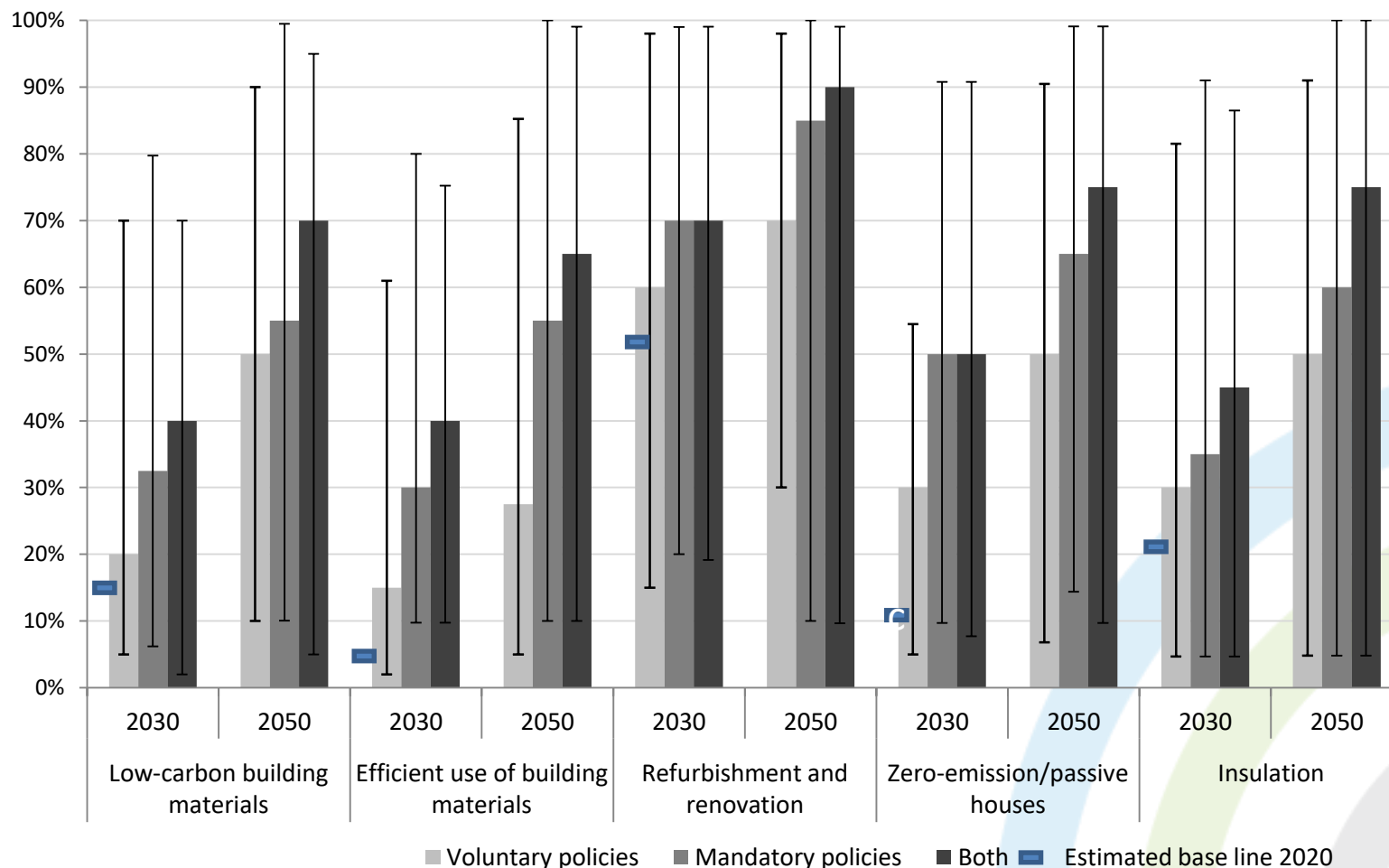
- Shift from gasoline/diesel to electric/hydrogen cars
- Mode shift to public transport
- Purchase choices towards reduced car weight
- Supply chain decisions to use secondary materials
- Reduced number of cars per household
- Extend car life span
- Reduce air transport & long-distance travel.

Median pick-up rate of mitigation options in the food sector by improvement option



Based on interviews/simplified Delphi method with 10 expert & 17 representatives of the food services industry

Median pick-up rate of mitigation options in the building sector by improvement option



Based on survey among 123 experts and sector organisations, 18 responses.

- European climate policy largely constraint to power sector and use of efficient technologies in buildings, manufacturing, appliances and transport.
- Large emissions mitigation opportunities also exist linked to consumer choices on building size and materials, transport services, appliances and food.
- Examples of consumption based policies to target these choices exist, but usually only information instruments like labeling are applied.
- Also regulatory and administrative, economic and financial, and institutional and infrastructure related instruments are feasible from the perspective of distributional/political, legal, international and administrative viability.
- The multiple decision elements of consumption choices point to importance of policy packages and in particular extension beyond voluntary approaches.
- Experts survey suggests that such policy packages can result in large increase of pick-up of mitigation opportunities .

- ➔ A few carbon intensive materials dominate industrial emissions
- ➔ Three groups of mitigation options are required
 1. Production efficiency and fuel shifting
 2. Carbon focused process innovation
 3. Material efficiency and substitution
- ➔ Multiple determinants for efficient material use / substitutes
 - individual preferences, habits, information
 - regulation, technology performance, access and affordability
- ➔ Policy response: Information, regulatory, economic, infrastructure
- ➔ Example economic instrument: Charge on carbon intensive materials
 - ➔ Can impact corporate / private consumption choices
 - ➔ Complemented with building codes, demonstration projects ...