



ENOUGH

EUROPEAN FOOD CHAIN SUPPLY
TO REDUCE GHG EMISSIONS BY 2050





WP 7- Policy, Strategy and Advice to Achieve Targets

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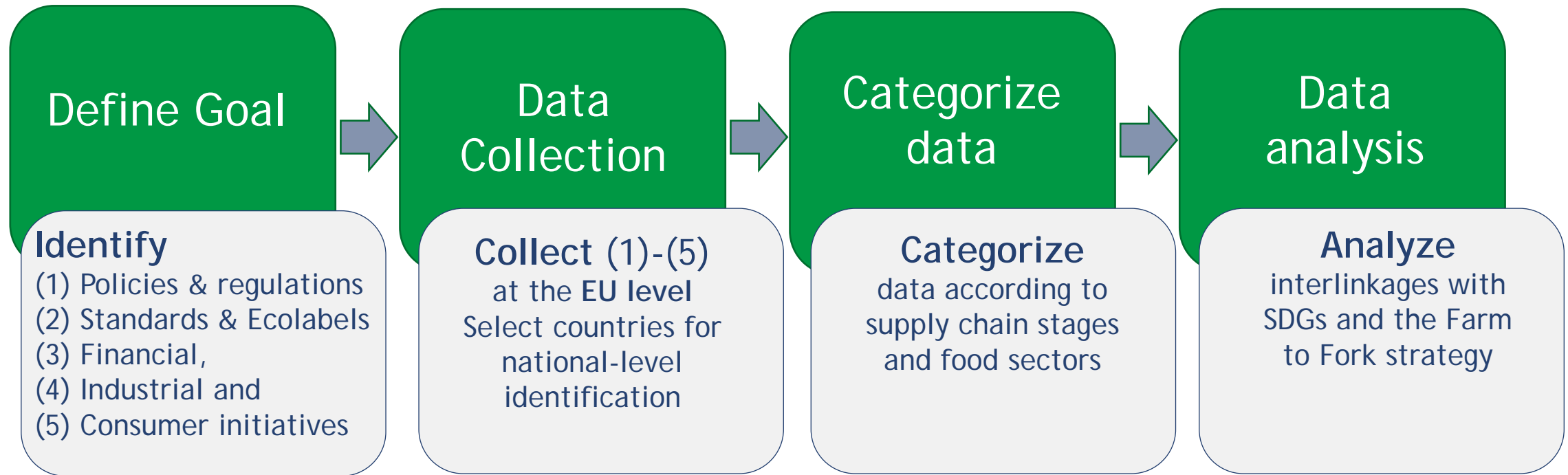
Objective:

*Review, Analyse and Identify **Gaps in Policy Measures** —to achieve net-zero emissions by 2050 in the food value chain—*

General Tasks

- *Task 7.1 **Review** current EU policies, industrial initiatives, regulations, food standards, and financial mechanisms (**Main partners: SINTEF+UGOE**)*
- Task 7.2 **Analyse** initiatives' impact on energy use, energy efficiency and carbon emissions
- Task 7.3 **Identify** policy gaps to achieve climate neutral food businesses and supply chains
- Task 7.4 **Design** feasible policy interventions and financial mechanisms
- Task 7.5 **Engage** with EU policy makers through interviews & workshops

Task 7.1 completed activities



Task 7.1 review results

Collection and classification

28 policies and regulations

27 financial mechanisms

20 standards and eco-labels

18 industrial initiatives

13 consumers initiatives



ISO / TS 14067

Greenhouse gases -- Carbon footprint of products --
Requirements and guidelines for quantification and
communication



Task 7.1. Completed activities

- Categorizing collected data according to

Supply Chain Stages:

Production
Processing
Distribution
Retail
Consumption

Food Sectors

Dairy
Meat
Seafood
Fruits and vegetables
(Cereals and legumes,
drinks)

Scientific contributions

- Sustainable Food Chains to Achieve the SDG-12 in Europe: Perspectives from Multi-stakeholders Initiatives
- Forthcoming Chapter in the Series "Implementing the UN Sustainable Development Goals- Regional Perspectives" published by Springer.

Sustainable Food Chains to Achieve SDG-12 in Europe: Perspectives from Multi-stakeholders Initiatives

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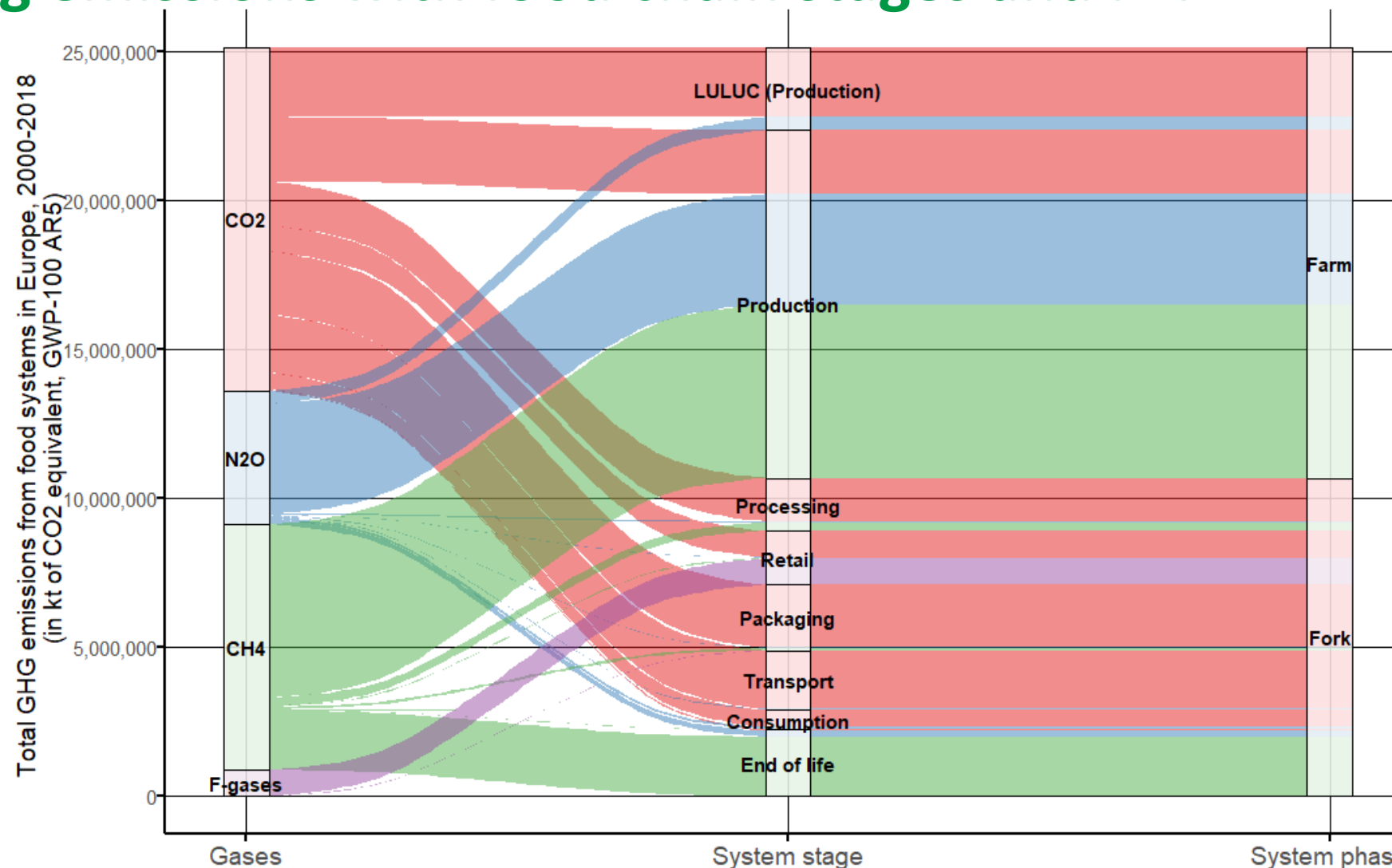
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Abstract

In this chapter, we compile and analyse existent financial mechanisms, industrial, and consumer initiatives to achieve sustainable food production and consumption at the European level. Based on a systematic review of European initiatives, we assess the role of multi-stakeholders to promote a sustainable European food supply chain. Initiatives are described and categorized into three waves to evaluate their priorities and attributes over time. Afterwards, they are linked to the SDG 12 targets to assess their commitments to the 2030 Agenda for Sustainable Development. Results show a gradual transition in stakeholders' priorities toward sustainability and climate change action. Industries and consumers are both strongly engaged to foster food awareness and reduce food waste at production and consumption stages. Nevertheless, integrated action to promote sustainability in processing, distribution, and retailing stages is weak and shall be developed. Similarly, the SDG 12 lacks clear-cut targets to meet sustainability across these food chain stages, and the European initiatives should work more on building a specific framework and criteria to promote a sustainable food consumption and production while considering the entire food supply chain. Thus, further research should assess the potential of integrated action along the entire food supply chain in order to design specific criteria efficiently developing sustainable food systems.

Linking emissions with food chain stages and F2F



Sankey Diagram of GHG emissions along the European FSC. Source: Emission from EDGAR. <https://edgar.jrc.ec.europa.eu/>

Three-waves of financial, industrial and consumer initiatives



Financial Mechanisms	None	SME competitiveness Energy efficiency R&D, R&I Clean Energy	Sustainable economy Climate change governance Sustainable transition GHG reduction projects
Industrial Initiatives	Competitiveness Innovation	Climate-resilient food production Sustainability	Emission reduction Sustainable food systems Strategies for the Green deal
Consumer Initiatives	Consumer rights Improve food access	Reduce food waste Consumer awareness	Consumers for climate Green transition Climate solutions

Scientific contributions II

- Sustainable food value chains in the European Union: Linking policies and multi-stakeholders' initiatives
- Extended abstract – 5th Symposium on Agri-Tech Economics for Sustainable Futures

Scientific contributions III

- Towards food supply chain decarbonisation: Challenges of the European policies and stakeholders' initiatives
- Policy brief

Towards food supply chain decarbonisation: Challenges of the European policies and stakeholders' initiatives

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Overview

This brief gives an overview of current policies, regulations, food standards, ecolabels, industry and consumer initiatives and financial mechanisms addressing decarbonisation in the European food supply chain.

Key outcomes

Multi-stakeholder initiatives are key to support political agendas and propose political priorities.

More emphasis is needed to promote decarbonisation in processing, distribution, and retailing stages in Europe.

1 Background

Climate change is one of the most pressing challenges of the 21st century (König & Araújo-Soares, 2021), and urgent interventions are required to avoid the 1.5°C threshold established by the Paris Agreement (United Nations, 2015). Such interventions represent a set of actions to achieve net zero emissions across productive sectors by 2050. The food sector deserves special attention not only for being essential to feed the world population, but also because food systems are estimated to contribute to a third of anthropogenic global greenhouse gas (GHG) emissions (Crippa et al., 2021). With the current population and economic growth trends, food systems must go through pivotal modifications to ensure food security while reducing environmental impacts (Lipper et al., 2020). In Europe, the food industry is a central economic sector (Wijnands et al., 2007) with several interlinked actors that produce, add value and supply food to final consumers (Timmermans et al., 2014). Thus, addressing sustainability in food sector requires integrated approaches examining the stakeholders involved in the entire food chain within the farm gate and beyond (Camanzi et al., 2017).

2 GHG emissions of food supply chains

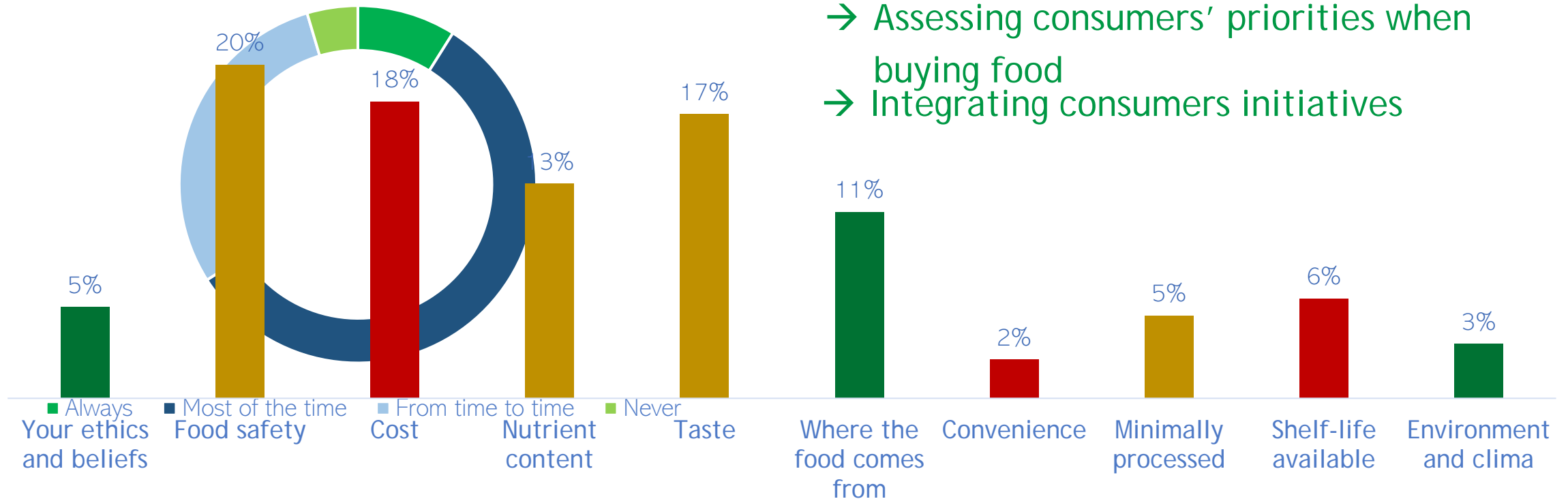
A food supply chains (FSC) consists of several interlinked stages (Figure 1). Despite high emissions of food production (e.g. land use), other stages (e.g. retailing, distribution) are likewise key GHG emitters. Using the EDGAR database (Crippa et al., 2021), retail and distribution contribute to approximately 24% and 17% of GHG emissions from European SFC, respectively. Thus, decarbonising food systems requires continuous commitment along the entire FSC.

Current Activities

1. Analysis of the Eurobarometer 2021

Consumers' perceptions of sustainable food systems

WHEN YOU BUY FOOD, WHAT IS THE MOST IMPORTANT TO YOU?
EATING HEALTHY AND SUSTAINABLE DIET



Current activities II

2. Elaboration of stakeholder survey

Producers' perceptions of sustainable food systems

→ Assessing potentials to achieve net-zero emissions in industrial operations

Sustainability

Does your company have a sustainability department?

Does your company offer green products?

EU food companies (large & SMEs)

Target group

Energy

Over the last three years, did your company monitor its energy consumption?

Over the last three years, did your company have targets for CO2 emissions?

ENOUGH partners & network

Standards

Over the last three years, was your company subjected to an energy performance standard in its operations?

Current activities III

3. Targeting future scientific contributions

- Special call: Innovation in Sustainable Food
- Industrial policy framework under the lens of the European food value chain
- Policies and regulations: National initiatives (provided by ENOUGH partners)
e.g. Germany, France, Norway

Examples of National Policies and Regulations

- Germany

Energy Transition and Climate Protection Act (*Energiewende- und Klimaschutzgesetzes*)

Goal: decarbonization & energy efficiency

Reduce GHG: 65% (2030, compared to 1990), 88% (2040), become climate neutral (2045)

German States have their own Climate Protection Act with specific strategies to address climate change

- France

The anti-waste law for a circular economy (*La loi anti-gaspillage pour une économie circulaire*)

Goal: Sustainable food value chain by reducing waste and its associated emissions. Achieving zero disposable packaging by 2040 with emphasis on food products.

La LOI n° 2019-1147 Reduce GHG: 40% (2030, compared to 1990)

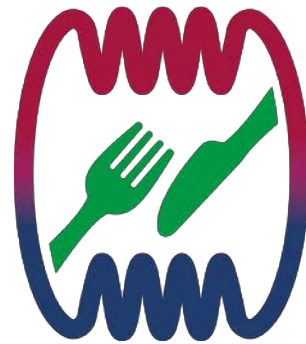
- Norway

Norwegian Climate Action Plan to reduce emissions under the Paris Climate Agreement

Reduce GHG: 50-55% (2030, compared to 1990). Gradual increase in the carbon tax rates (per ton CO2 equivalents), financial support to develop new technologies, biofuel quota obligations for offroad diesel and fuel for shipping (from 2022)



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THANK YOU!

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Political Priorities

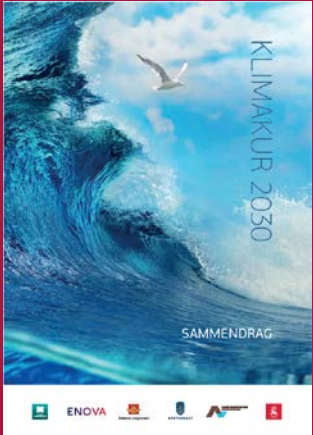
Stakeholders' Priorities

Climate change adaptation	13.1	13.3	12.8	13.3	Support consumer awareness	
Climate change mitigation	13.2	13.3		13.3	Sustainable consumption	
Transparency		12.6		13.2	Research and Innovation	
Renewable energy	13.1			13.2	Sustainable finance	
Address carbon leakage	13.2			13.2	Support policy implementation	
Reduce waste & recycling	13.2	12.3		13.2	Reduce emissions	
Corporate Sustainability Reporting	13.3	12.6	12.3	12.5	Waste reduction	
Sustainable food sector	2.4	12.5	13.1	2.4	13.1	Sustainable production

SDGs



Norwegian Policies and Strategies



Climate control strategy 2030

- Monitor/quantify GHG emissions
- Monitor/quantify energy consumption or energy efficiency
- Action plan to reduce emissions
- Action plan to shift to renewable energy
- Communication & reporting of the emissions



National strategy for a green, circular economy

- Circular economy as driver for economic growth
- Non-toxic value chains
- Decarbonization and energy efficiency
- Socio-environmental justice and fair trade
- Raise consumer awareness

Climate plan for 2021-2030 Norway

- Action plan to reduce emissions
- Actions related to reduce waste
- Actions related to promote organic food

