



**EU
POLICY LAB**

SCENARIO EXPLORATION SYSTEM

**Future transitions for the Bioeconomy
towards Sustainable Development and
a Climate-Neutral Economy**

This publication is a report by the Joint Research Centre (JRC), the European Commission's science and knowledge service. It aims to provide evidence-based scientific support to the European policymaking process. The scientific output expressed does not imply a policy position of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use that might be made of this publication. For information on the methodology and quality underlying the data used in this publication for which the source is neither Eurostat nor other Commission services, users should contact the referenced source. The designations employed and the presentation of material on the maps do not imply the expression of any opinion whatsoever on the part of the European Union concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Contact information

Name: European Commission's Knowledge Centre for Bioeconomy
Address: <https://knowledge4policy.ec.europa.eu/bioeconomy>
Email: EC-Bioeconomy-KC@ec.europa.eu

EU Science Hub

<https://ec.europa.eu/jrc>

JRC127592

PDF	ISBN 978-92-76-51757-3	doi:10.2838/351298
Print	ISBN 978-92-76-51756-6	doi:10.2838/368240

Luxembourg: Publications Office of the European Union, 2022



The reuse policy of the European Commission is implemented by the Commission Decision 2011/833/EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39). Except otherwise noted, the reuse of this document is authorised under the Creative Commons Attribution 4.0 International (CC BY 4.0) licence (<https://creativecommons.org/licenses/by/4.0/>). This means that reuse is allowed provided appropriate credit is given and any changes are indicated. For any use or reproduction of photos or other material that is not owned by the EU, permission must be sought directly from the copyright holders.

All content © European Union 2022

How to cite this report: Borzacchiello, M.T., Sanchez Lopez, J., Avraamides, M., Rudkin, J., Bontoux, L. *Scenario Exploration System - Future transitions for the bioeconomy towards sustainable development and a climate-neutral economy*, Publications Office of the European Union, Luxembourg, 2022, ISBN 978-92-76-51757-3, doi:10.2838/351298, JRC127592.

TABLE OF CONTENTS

Scenario exploration system

SES instructions

Introduction	01
Requirements	02
The role of the scenario exploration master	03
Phase 1 - Preparing the exploration	04
Phase 2 - Exploring the first scenario	05
Phase 3 - Exploring the second scenario	07
Phase 4 - Discussion	07

SES bioeconomy material

SES Game board (to be printed in A0)	08
Scenario discs	10-11
Megatrends cards	10-11
Variable drivers cards	10-11
Variable driver cards - bioeconomy	12-13
Scenario detail cards	14-15
Real-life cards	14-15
Action cards	16-19
Explorer record sheet	20-23
Public Voice record sheet	24-25
Media headline record sheet	26-27
Scoring record sheet	28-29
Participant Survey	30-31

SCENARIO EXPLORATION SYSTEM Requirements



DESCRIPTION

The Scenario Exploration System is a tool to enable participants to simulate their possible paths towards the future in relation to an issue of their choice around an exploration board. It operates as a board game. It engages four participants to develop and take up roles to chart their own courses towards their long-term objectives. This is taking place under the judgement of a fifth person representing the public. In the course of a 3-hour session, participants do this journey twice, holding the same roles under contrasting scenarios. The Scenario Exploration System can be applied to any scenario, any issue and any role. This can be performed individually or in teams of up to three people a fifth person representing the public.

REQUIREMENTS

Facilitation

1 Scenario Exploration Master

Participants

- Primary producer
- Consumer
- Policy maker
- Business
- Public voice

Material

- Board
- 5 megatrend cards
- set of Variable driver cards
- 1 set of Action cards per scenario explorer
- 3 Scenario detail cards per scenario
- 4 Scenario discs
- Real life cards
- Set of tokens:
 - 65 red tokens for the public voice,
 - 25 resource tokens (each of blue, green, purple, yellow) for the scenario explorers
- 1 dice
- 1 Public voice record sheet
- 4 Scenario explorer record sheets
- 1 Scoring sheet for the Scenario Exploration Master

THE ROLE OF THE SCENARIO EXPLORATION MASTER



1. ENSURING THE OVERALL QUALITY OF THE EXPERIENCE

- To be a pleasant, stimulating host
- To explain the rules
- To guide the participants, help create ownership
- To be the guardian of the exploration



2. PRESENTING THE ELEMENTS

- Use megatrends to engage future thinking
- Present them in connection to current events
- Explain the use of the variable driver
- Real Life cards



3. CREATING THE STORIES

- Based on the Scenario Detail cards
- Start from today and connect to current events
- State date/year at each round
- Build on outcome of each round



4. MANAGING EXPLORATION DYNAMICS

- Engage in the conversation
- Ensure smooth transitions between participants
- Ask clarification questions if needed
- Volunteer suggestions if someone lacks ideas
- Take the story seriously

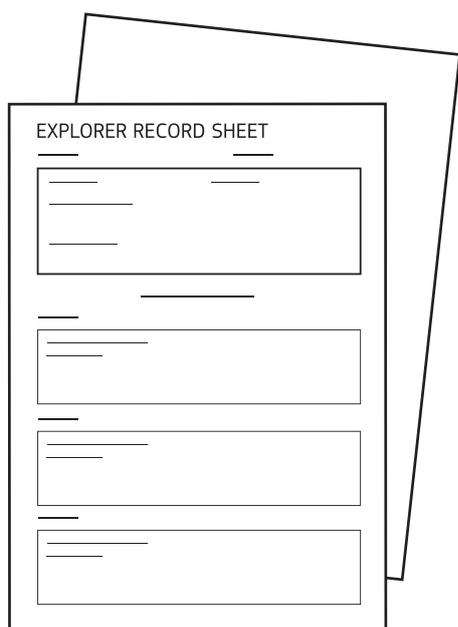


5. MANAGING TIME

- Important for session dynamics
- Session starting time impacts dynamics
- Participants must be on time
- Break(s)?

PHASE 1

PREPARING THE EXPLORATION



GOAL

Prepare the specific scenario exploration session



1. WELCOME

Welcome participants
Tour de table, make people feel at ease
Ask participants for a theme of interest (if needed)
Select two contrasting scenarios (if not decided previously)



2. DEFINING THE ROLES

Explain the various roles available
Make participants choose their role
Explain how they must develop their role and define their long term objectives
Explain the specificities of the public voice
Distribute the **record sheets**
Give participants time to build their roles



3. DISTRIBUTING THE ELEMENTS

Put the scenario **disk** in the middle of the board Distribute the **tokens**:

- 30 red tokens to the public voice
- resource tokens to each scenario explorer according to the distribution indicated on the scenario disk

Distribute the **action cards**
Put the **real life cards** on the board
Give 2 **real life cards** to each scenario explorer



4. CREATING THE EXPLORATION COMMUNITY

Let each participant explain his/her role to all
Make sure this is detailed enough
Explain the resources to the scenario explorers and the **red tokens** to the public voice*:
Explain how scores are calculated
Distribute and explain **real life cards**



* **RESOURCE TOKENS** give strength to the actions taken by the scenario explorers. Scenario explorers receive one **set of tokens** corresponding to the scenario being explored.

- These are all the resources that the scenario explorer will have until the end of this exploration.
- The scenario explorer is free to decide how to use his/her resources to support his/her actions.

RED TOKENS are used by the public voice to express its opinion. The public voice can spend up to 10 tokens per round. It is free to allocate the tokens as it wishes with a minimum of one token per action.

*Each action gets a score by multiplying the number of resource tokens used by a scenario explorer to support his/her action by the number of red tokens attributed to the action by the public voice.



5. CREATING THE CONTEXT FOR THE SCENARIO EXPLORATION

The Scenario Exploration Master lays down the megatrend cards one by one face up, explaining how each megatrend is likely to affect the scenario exploration over the selected time horizon. The Scenario Exploration Master then lays down the pile of variable driver cards face down and reveals the first one. This first variable driver will influence the first round of the scenario exploration.

PHASE 2 EXPLORING THE FIRST SCENARIO

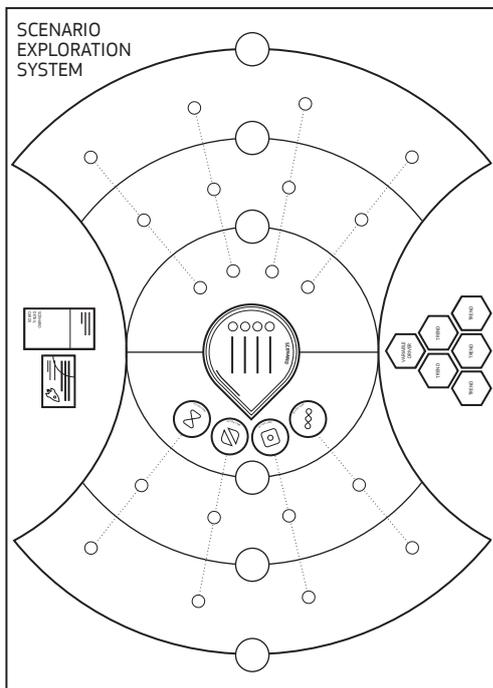


60
minutes



GOAL

To explore the first scenario



1. FIRST ROUND

We are now in the first time horizon (in the zone closest to the **scenario disk**).

The Scenario Exploration Master then lays down the pile of **variable driver cards** face down and reveals the first one. This first variable driver will influence the first round of the scenario exploration.

The Scenario Exploration Master tells a story based on the variable driver and the first scenario detail card. Then scenario explorers roll the dice:

- the scenario explorer who gets the highest score starts,
- the other scenario explorers then take action clockwise.
- *scenario explorers are asked to consider more particularly the elements of the scenario detail cards corresponding to the number they rolled on the dice (optional).*



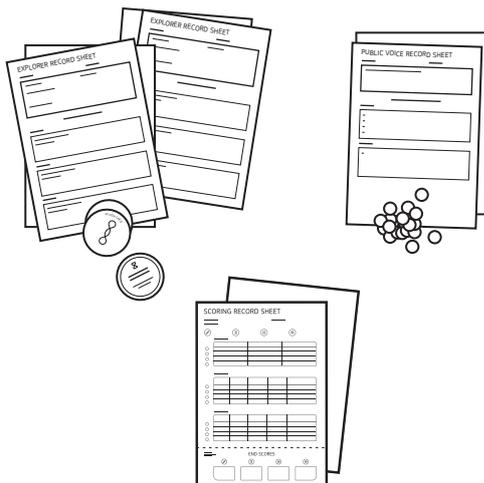
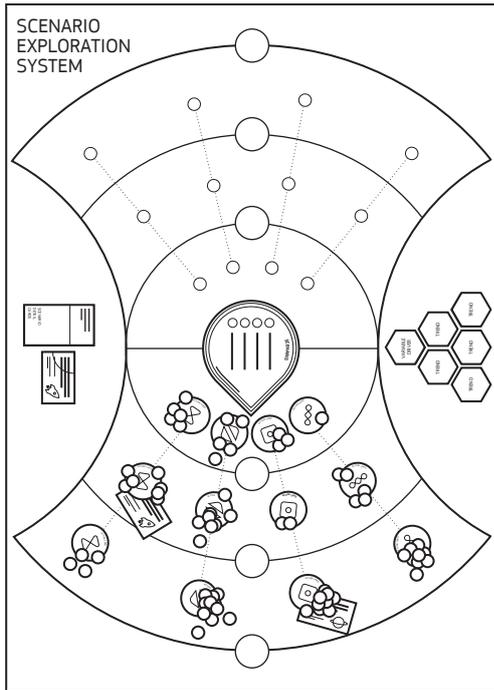
Scenario explorers then take one action in turn clockwise.

They put one **action card** on the **board** in the zone corresponding to the time horizon.

They support their action with own resources of their choice by putting **resource tokens** on the **action card**.

Once all four scenario explorers have taken action, the public voice reacts by attributing red tokens. The public voice can spend up to 10 tokens per round. It is free to allocate the tokens as it wishes with a minimum of one token per action.

During the round, each scenario explorer can use one **real life card** according to the instructions that each carries. The explorers that have used a **real life card** pick a new one from the pile.



At the end of the round the Scenario Exploration Master creates a wrap up story of the round and collects the scores*.

*SCORES: the scores are calculated after all **real life cards** have been used. They result from the multiplication of the resources allocated to each action by the number of **red tokens** attributed to the corresponding actions by the public voice.

2. SECOND ROUND

The Scenario Exploration Master reveals the next **variable driver card** and continues the story based on the next **scenario detail card** (next time horizon).

Scenario explorers roll the dice and the one who gets the highest score starts. The other scenario explorers take one action in turn clockwise*.

They put one **action card** on the board in the zone corresponding to the time horizon.

They support their action with own resources of their choice by putting **resource tokens** on the action card.

Once all four scenario explorers have taken action, they are allowed to collaborate. They do so by first offering opportunities of collaboration to each other, and then, if a collaboration is agreed, the scenario explorer who wants to engage in a collaboration puts some of his/her own **resources tokens** on the action(s) he/she wants to collaborate with.

In the case of collaborations, each collaborating partner receives the total score obtained by the card. This is the sum of all **resource tokens** played by all players multiplied by the **red tokens** attributed by the public voice.

The public voice reacts by attributing **red tokens**. The public voice can spend up to 10 tokens per round. It is free to allocate the tokens as it wishes with a minimum of one token per action.

During the round, each scenario explorer can use one **real life card** according to the instructions that each carries. The explorers that have used a real life card pick a new one from the pile.

At the end of the round the Scenario Exploration Master creates a wrap up story of the round and collects the scores**.

3. THIRD ROUND

The third round is identical to the second round

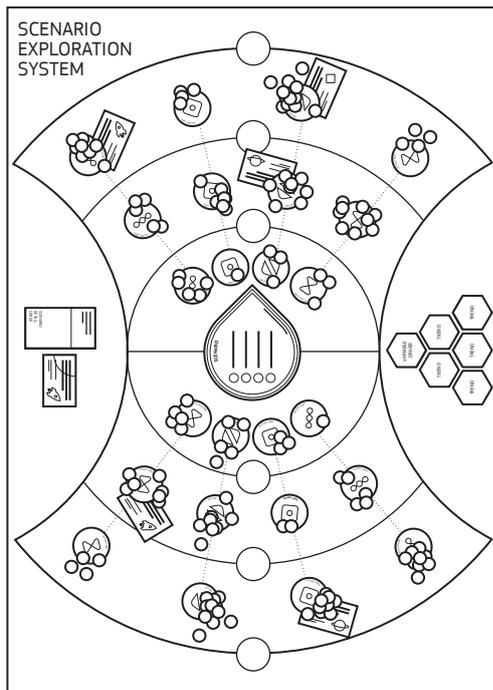
4. CONCLUSION

At the end, the Scenario Exploration Master summarises the scenario exploration, calculates the overall scores on the **scoring sheet** and asks the scenario explorers to assess how well they have managed to reach their long-term objectives (this can be expressed on a scale on 1 to 10) and the opinion of the public voice.

**Depending on the scenarios and the objectives of the session, the minimum cost for collaboration can be made to vary between the two scenarios being explored." (optional)

*Scenario explorers are asked to consider more particularly the elements of the scenario detail cards corresponding to the number they rolled on the dice (optional).

PHASE 3 EXPLORING THE SECOND SCENARIO



GOAL

To explore the second scenario



The exploration of the second scenario takes place on the other half of the board. It is carried out in an identical fashion to the exploration of the first scenario.



All the participants keep the same roles and long term objectives. However, resource distribution changes according to the characteristics of the new scenario.

PHASE 4 DISCUSSION



GOAL

To reflect on the contrasted explorations.



In this phase, participants look at both sides of the board and reflect on the similarities and differences between the two scenario explorations. This phase can be structured and extended according to the need of the organisers.

30 YEARS

20 YEARS

10 YEARS

10 YEARS

20 YEARS

30 YEARS



VARIABLE DRIVER

TREND

TREND

TREND

TREND

TREND

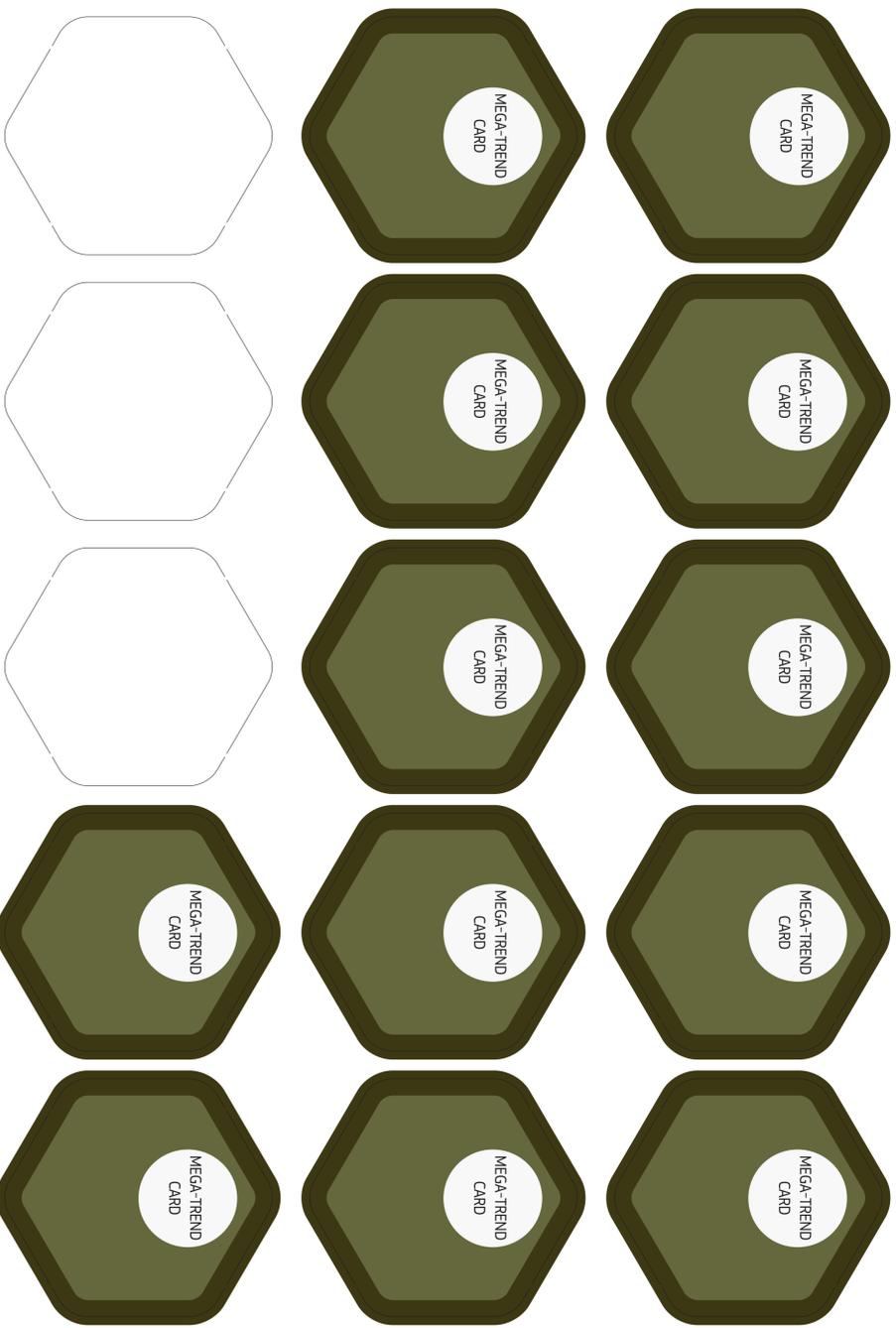
REAL LIFE CARDS

SCENARIO DETAIL CARDS

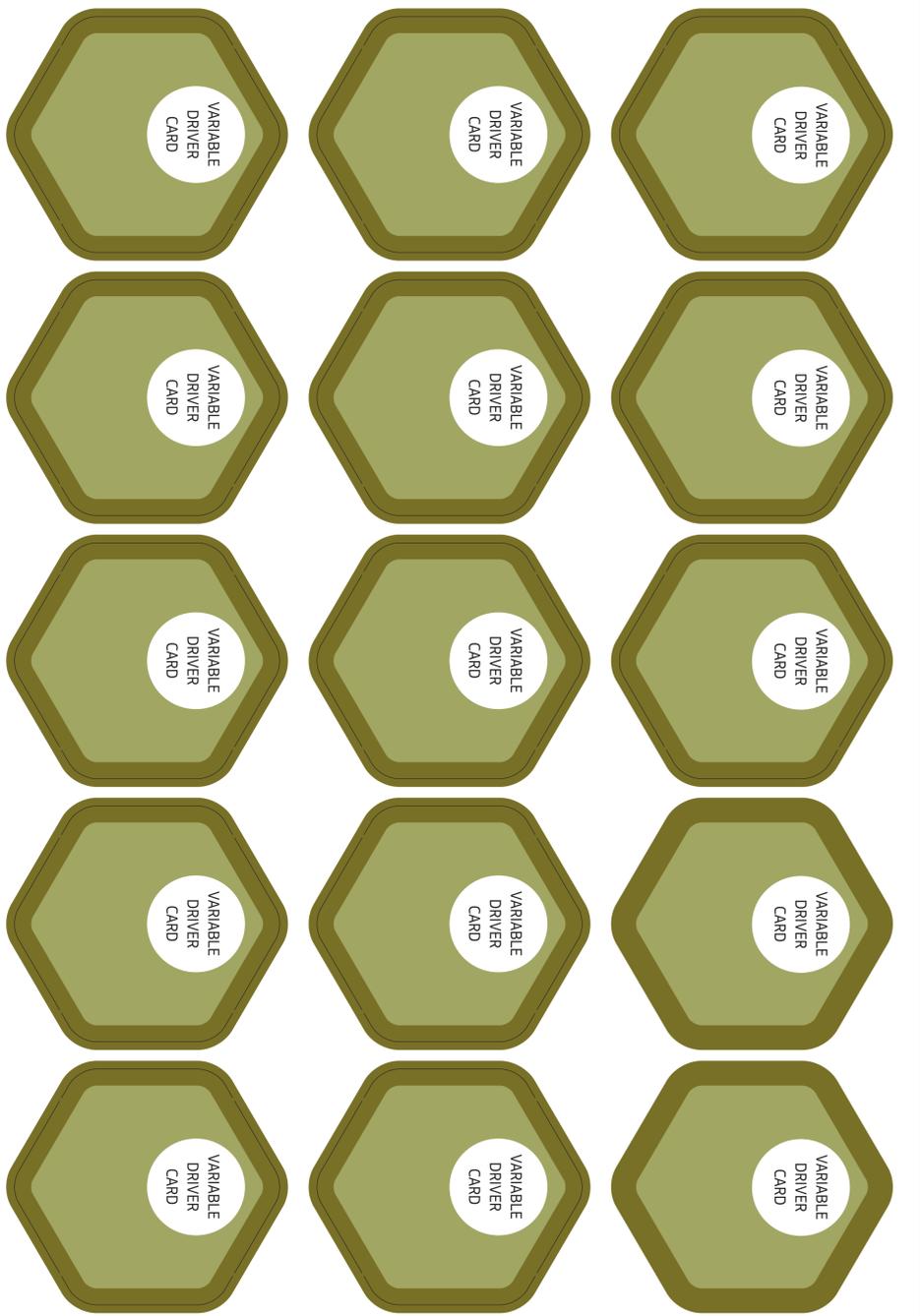
SCENARIO DETAIL CARDS



© 2010 European Commission



Rd:EN/21/24



Rd:EN/22/24

Scenario 1
DO IT FOR US

Token Distribution		Resources
Role		
Consumer		12
Policy Maker		12
Primary Producer		12
Business		12

Scenario 2
DO IT TOGETHER

Token Distribution		Resources
Role		
Consumer		12
Policy Maker		12
Primary Producer		12
Business		12

Rd:EN/23/24

Scenario 3
DO IT OURSELVES

Token Distribution		Resources
Role		
Consumer		12
Policy Maker		12
Primary Producer		12
Business		12

Scenario 4
DO WHAT IS UNAVOIDABLE

Token Distribution		Resources
Role		
Consumer		12
Policy Maker		12
Primary Producer		12
Business		12

Rd:EN/24/24

URBANIZATION	GROWING CONSUMPTION	
MILLENNIALS	RESOURCE SCARCITY	
HYPER-CONNECTED	ADVANCED MANUFACTURING	
CONSUMER CLASS	DIGITALISATION	ENVIRONMENTAL DEGRADATION
CLIMATE CHANGE	DEPOPULATION	CONTINUING URBANISATION

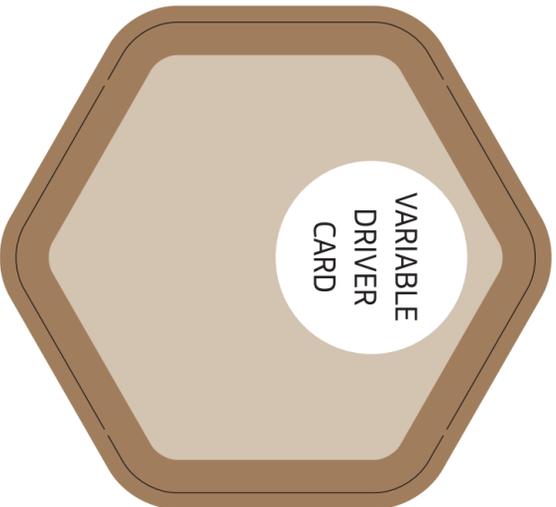
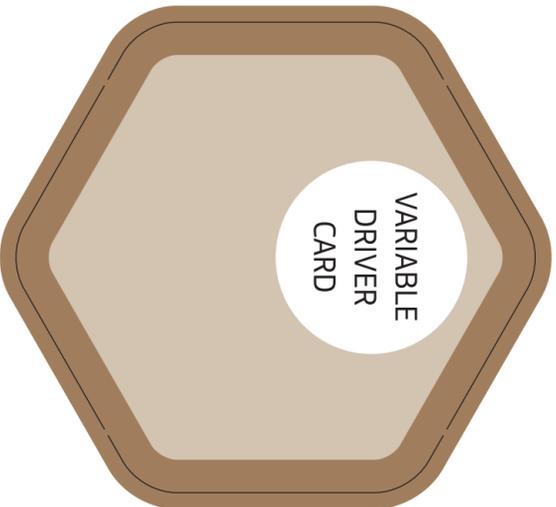
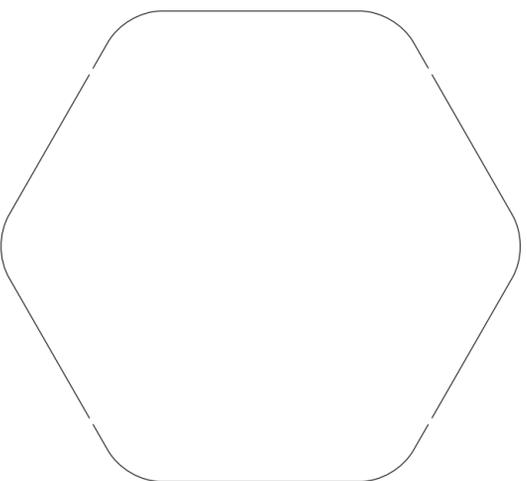
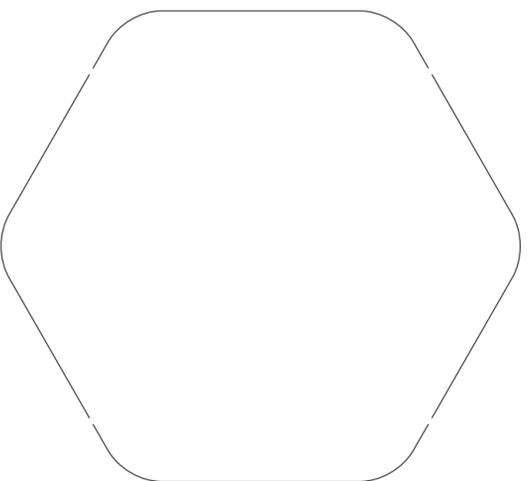
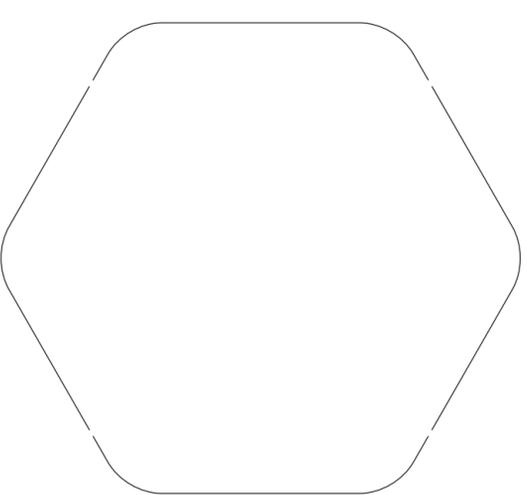
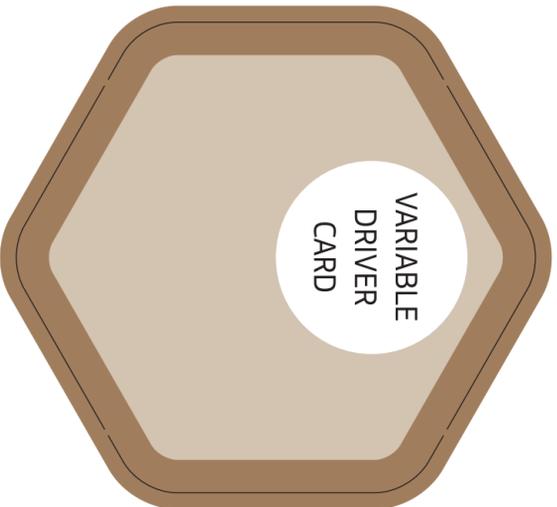
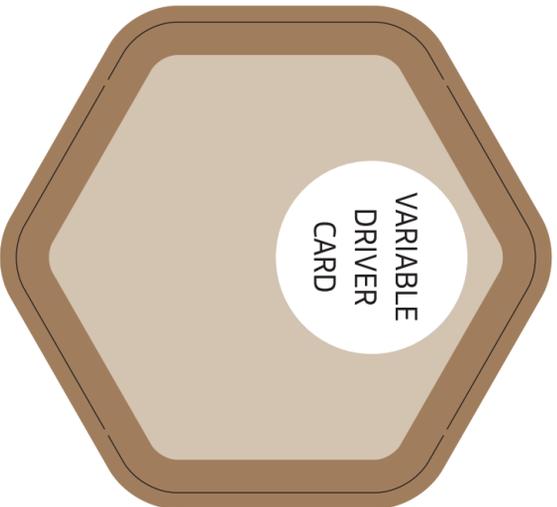
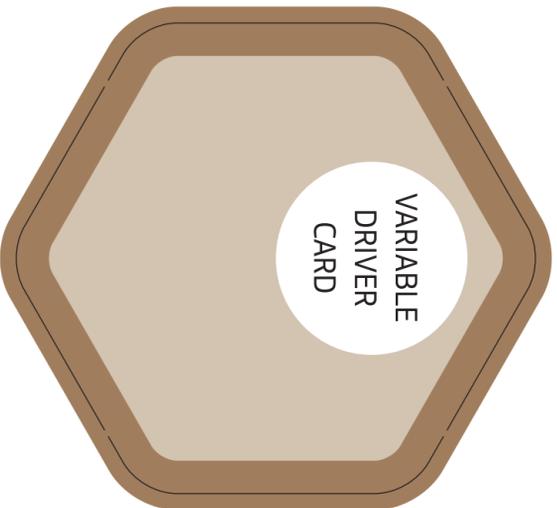
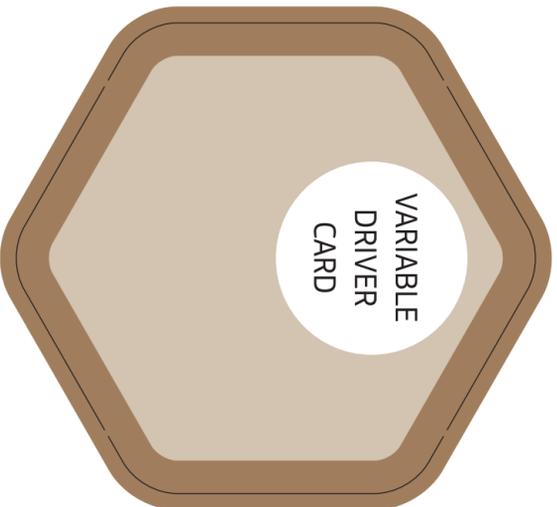
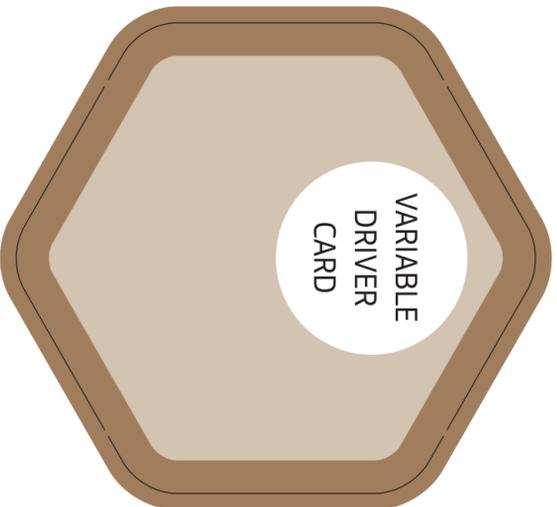
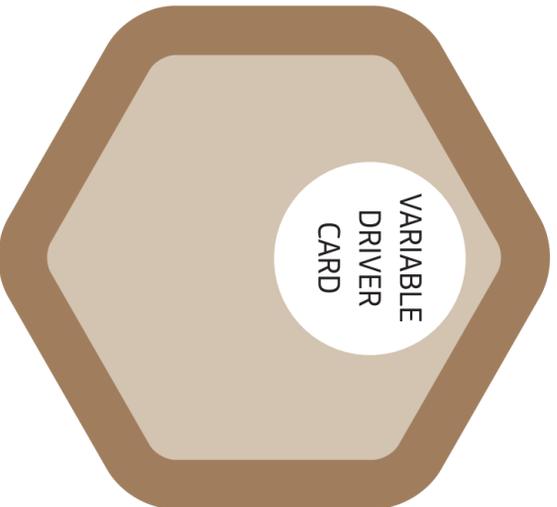
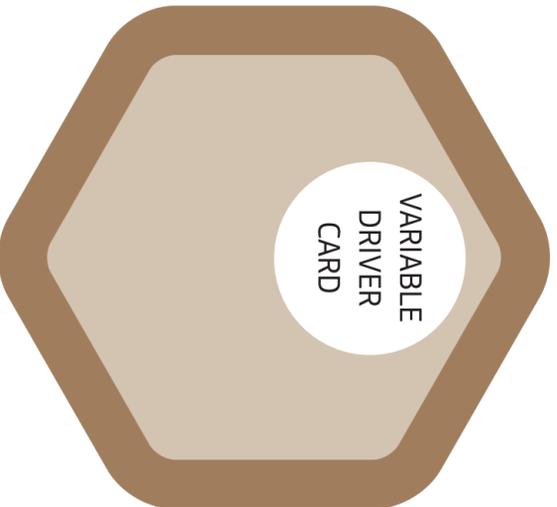
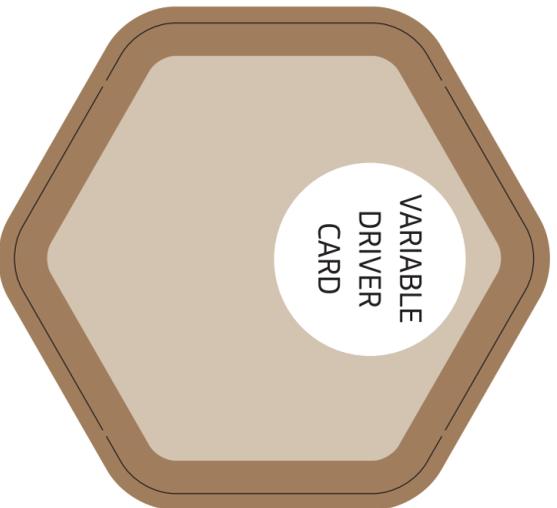
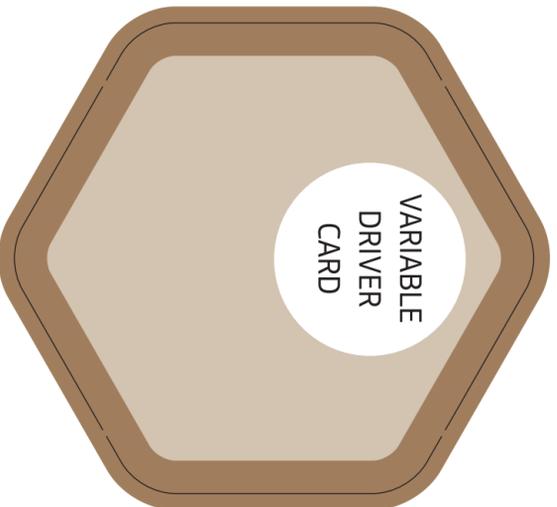
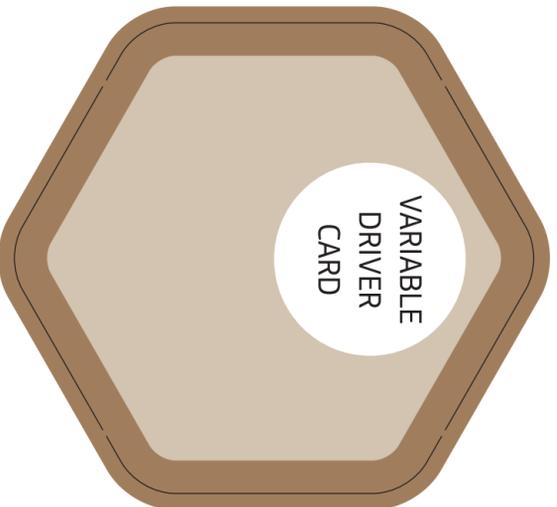
INCREASING SCALE OF MAN-MADE DISASTERS	NEW INVESTMENT LANDSCAPE	NEW INTERNATIONAL TRADE RULES
INCREASED POLLUTION	NEW GOVERNANCE SYSTEM	NICHE MARKETS DOMINATE
CONVERGING TECHNOLOGY	NEW TECHNOLOGY	VOLATILE MARKETS
COMPETITION FOR LAND	NEW MATERIALS	SOCIAL INNOVATION
LOSS OF BIODIVERSITY	NEW LEADERSHIP	NON-EU POLICIES

SCENARIO 1

SCENARIO 2

SCENARIO 3

SCENARIO 4



AGROECOLOGY

**BIO-BASED
CARBON
SEQUESTRATION**

**AWARENESS &
ENGAGEMENT
FOR CHANGE**

**BIO-BASED
HEAT**

**BIO-BASED
EMPLOYMENT**

**BIO-BASED
INTERNATIONAL
TRADE**

**BIO-BASED
ELECTRICITY**

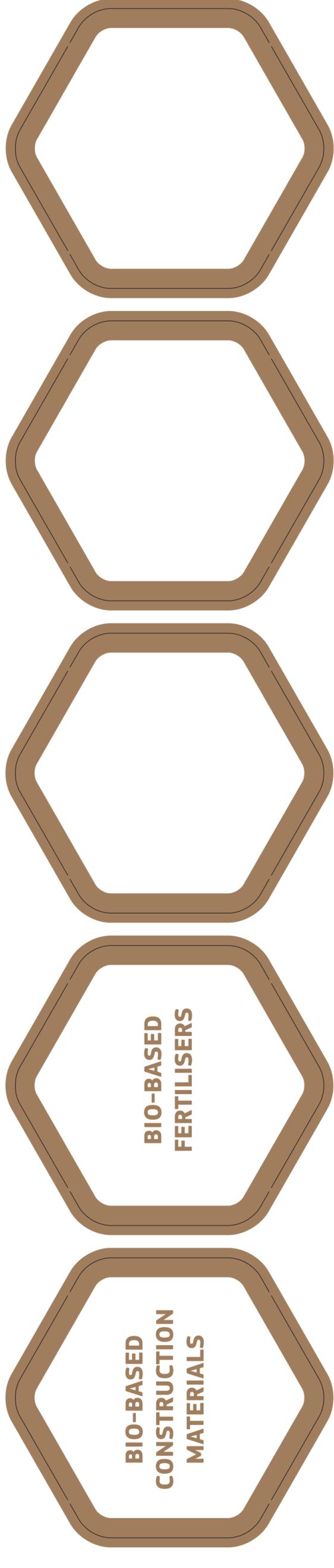
FOOD SECURITY

**BIOFUELS FOR
TRANSPORT**

**BIO-BASED
CHEMICALS**

**BIO-BASED
CONSTRUCTION
MATERIALS**

**BIO-BASED
FERTILISERS**

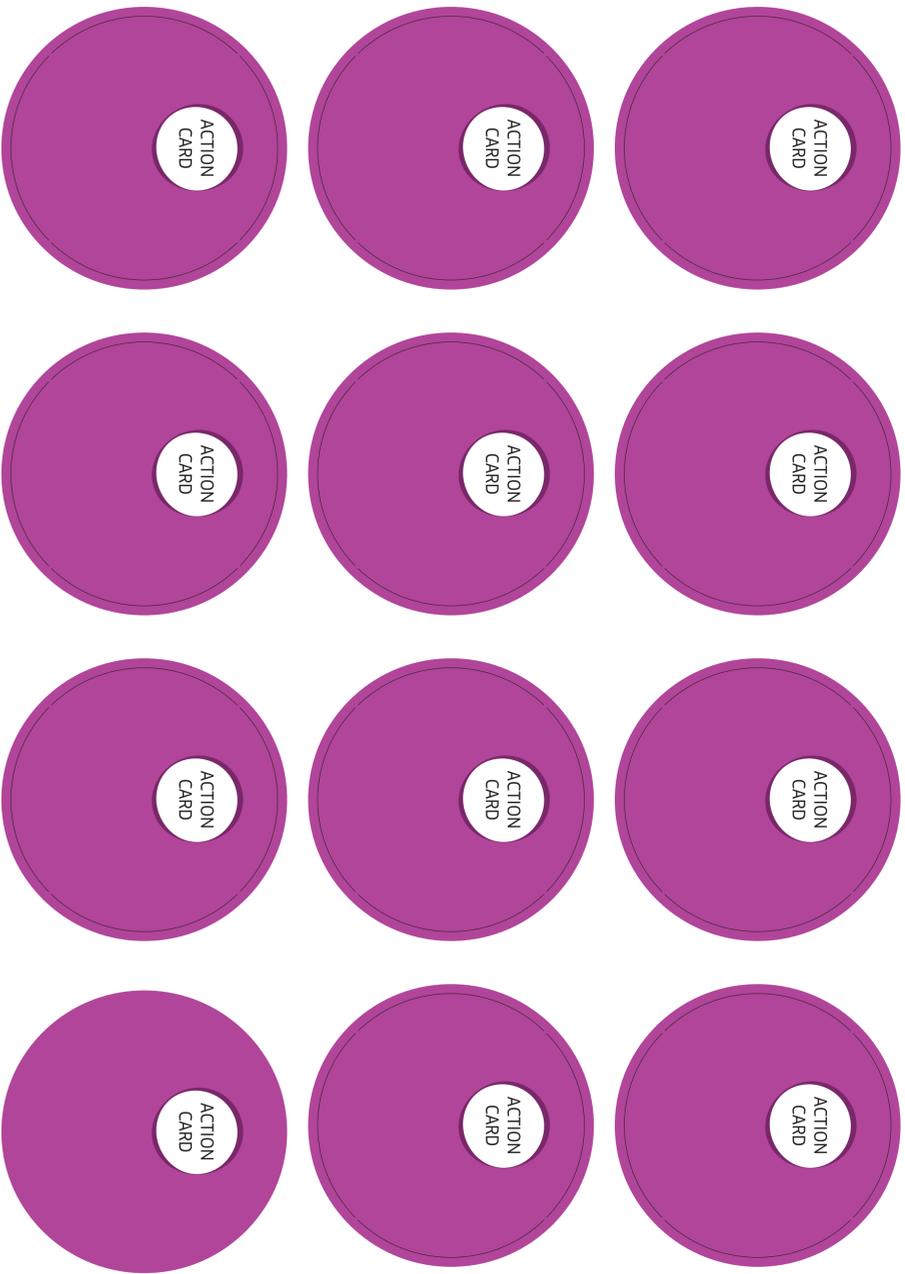


<p>Media attention</p> <p>Your action is getting a lot of attention. Double the public voice tokens given to an action.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Generous gift</p> <p>Double the tokens of the NGO action.</p> <p><i>To be played before the public voice has spoken</i></p>	<p>Media attention</p> <p>Your action is getting a lot of attention. Double the public voice tokens given to an action.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Generous gift</p> <p>Double the tokens of the NGO action.</p> <p><i>To be played before the public voice has spoken</i></p>
<p>Bad Press</p> <p>An action gets bad press. Remove 2 resource tokens on an action of your choice.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Unreliable partner</p> <p>Cancel all collaborations on an action.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Bad Press</p> <p>An action gets bad press. Remove 2 resource tokens on an action of your choice.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Unreliable partner</p> <p>Cancel all collaborations on an action.</p> <p><i>To be played after the public voice has spoken</i></p>
<p>Good governance</p> <p>Double the tokens of the government action.</p> <p><i>To be played before the public voice has spoken</i></p>	<p>Fraud</p> <p>Remove 2 resource tokens from an action of your choice.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Good governance</p> <p>Double the tokens of the government action.</p> <p><i>To be played before the public voice has spoken</i></p>	<p>Fraud</p> <p>Remove 2 resource tokens from an action of your choice.</p> <p><i>To be played after the public voice has spoken</i></p>
<p>Good collaboration</p> <p>Work together for free (value 1 player token).</p> <p><i>To be played during negotiations on collaboration.</i></p>	<p>Socially responsible entrepreneurship</p> <p>Double the public voice tokens given to an action.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Good collaboration</p> <p>Work together for free (value 1 player token).</p> <p><i>To be played during negotiations on collaboration.</i></p>	<p>Socially responsible entrepreneurship</p> <p>Double the public voice tokens given to an action.</p> <p><i>To be played after the public voice has spoken</i></p>

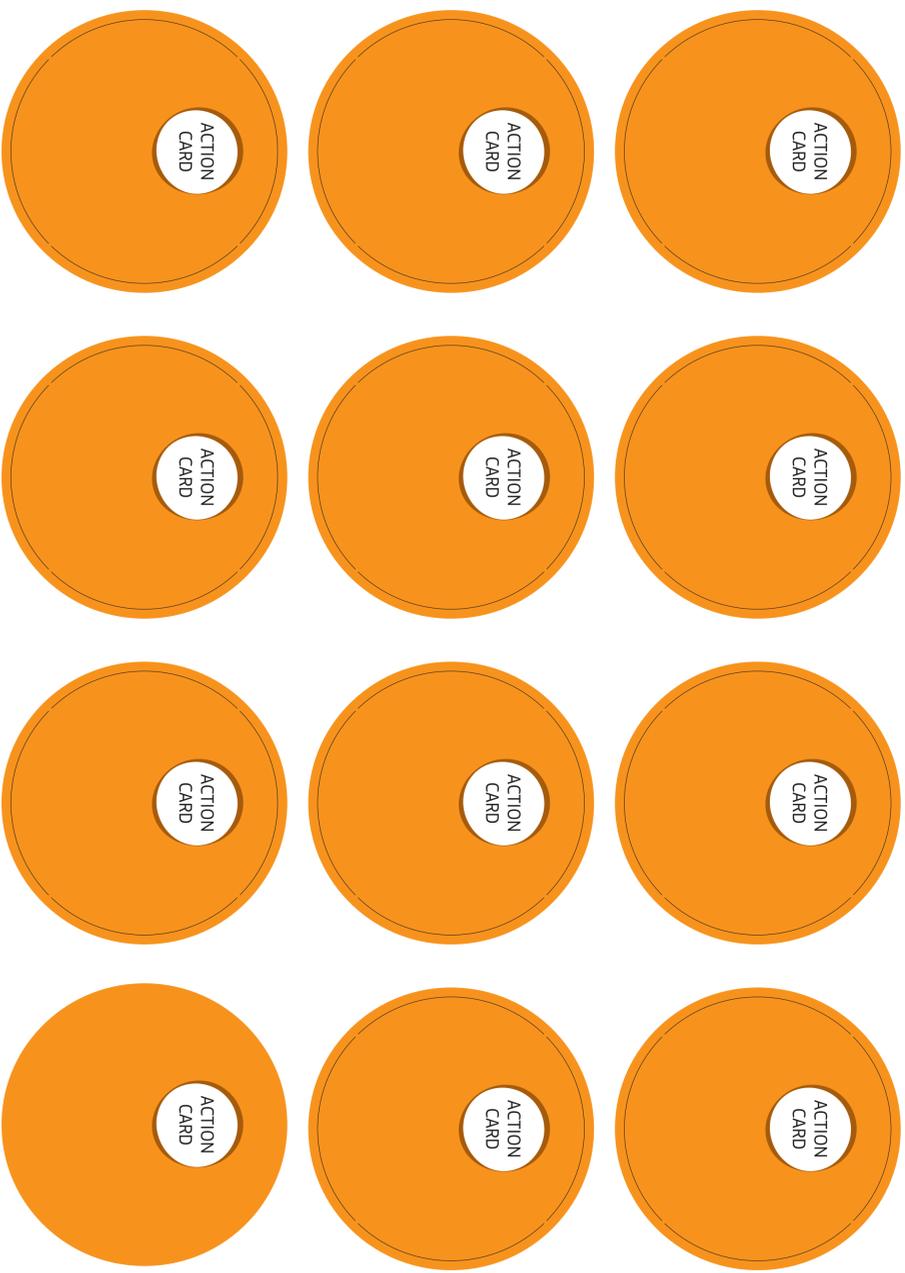
<p>Media attention</p> <p>Your action is getting a lot of attention. Double the public voice tokens given to an action.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Generous gift</p> <p>Double the tokens of the NGO action.</p> <p><i>To be played before the public voice has spoken</i></p>	<p>Media attention</p> <p>Your action is getting a lot of attention. Double the public voice tokens given to an action.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Generous gift</p> <p>Double the tokens of the NGO action.</p> <p><i>To be played before the public voice has spoken</i></p>
<p>Bad Press</p> <p>An action gets bad press. Remove 2 resource tokens on an action of your choice.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Unreliable partner</p> <p>Cancel all collaborations on an action.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Bad Press</p> <p>An action gets bad press. Remove 2 resource tokens on an action of your choice.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Unreliable partner</p> <p>Cancel all collaborations on an action.</p> <p><i>To be played after the public voice has spoken</i></p>
<p>Good governance</p> <p>Double the tokens of the government action.</p> <p><i>To be played before the public voice has spoken</i></p>	<p>Fraud</p> <p>Remove 2 resource tokens from an action of your choice.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Good governance</p> <p>Double the tokens of the government action.</p> <p><i>To be played before the public voice has spoken</i></p>	<p>Fraud</p> <p>Remove 2 resource tokens from an action of your choice.</p> <p><i>To be played after the public voice has spoken</i></p>
<p>Good collaboration</p> <p>Work together for free (value 1 player token).</p> <p><i>To be played during negotiations on collaboration.</i></p>	<p>Socially responsible entrepreneurship</p> <p>Double the public voice tokens given to an action.</p> <p><i>To be played after the public voice has spoken</i></p>	<p>Good collaboration</p> <p>Work together for free (value 1 player token).</p> <p><i>To be played during negotiations on collaboration.</i></p>	<p>Socially responsible entrepreneurship</p> <p>Double the public voice tokens given to an action.</p> <p><i>To be played after the public voice has spoken</i></p>

<p>30 years Scenario 1</p> <p>DO IT FOR US</p> <ol style="list-style-type: none"> Innovative aquaculture production grows while agricultural production declines 'Green' technologies supported by strong research policies take off, as well as green bonds Governments continue intervening through increasingly stringent sustainability standards, fiscal policies and new regulation 	<p>20 years Scenario 1</p> <p>DO IT FOR US</p> <ol style="list-style-type: none"> Small-scale farms are disappearing, while technological innovation restructures the food production system The EU secures access to 'sustainable' imports and exports. Businesses adapt The new Sustainable Bioeconomy policy, is a 'game-changer' thanks to its financial support to primary producers 	<p>30 years Scenario 2</p> <p>DO IT TOGETHER</p> <ol style="list-style-type: none"> Climate-smart forest management brings moderate increase of wood supply and enhance forest carbon sinks EU Bioeconomy's imports shifted from feedstock to high-quality products that meet sustainability standards and consumers' preferences Responsible business, an ambitious Bioeconomy policy, and trade policies are mainstreamed internationally 	<p>20 years Scenario 2</p> <p>DO IT TOGETHER</p> <ol style="list-style-type: none"> Meat and milk production reduce, driven by the ongoing shift to less animal-based food products Businesses become increasingly decentralised to address increasing consumer demand for local high-quality products EU governments are collaborating seamlessly and with businesses and social movements, to achieve the New Green Deal targets
<p>30 years Scenario 1</p> <p>DO IT FOR US</p> <ol style="list-style-type: none"> Transport is primarily electrified with only advanced biofuels used in freight (maritime) transport and aviation Willingness to pay for high quality and sustainable products increases in EU EU-led climate action projected to limit global warming to 2°C by 2100. Progress on circularity, however, stumbles 	<p>20 years Scenario 1</p> <p>DO IT FOR US</p> <ol style="list-style-type: none"> Lab-meat, as well as innovative feedstuff from algae and insects, has achieved a level of maturity Increased social inequalities, overgrowth of urbanisation bring rural depopulation and impoverishment Biodiversity continues to decline despite the enlargement of protected areas and support to agroecology 	<p>30 years Scenario 2</p> <p>DO IT TOGETHER</p> <ol style="list-style-type: none"> Renewable sources dominate the energy supply. Transport is primarily electrified or with advanced biofuels Both urban and rural living standards have increased and their gap is shrinking Global competition for natural resources is low due to changes in demand for food as well as efficient and circular bio-production 	<p>20 years Scenario 2</p> <p>DO IT TOGETHER</p> <ol style="list-style-type: none"> Innovative bio-based materials and products made of residues and wastes emerge to address the high demand for sustainable commodities Strong preference for locally produced food but also innovative sources of proteins (algae, lab-meat, etc.) Agroecology practices and sustainable forest management reduce biodiversity degradation and the declining trend of forest carbon sinks
<p>10 years Scenario 1</p> <p>DO IT FOR US</p> <ol style="list-style-type: none"> EU forests are expanding and wood is harvested and used sustainably Mainstream use of environmental standards for trading essential commodities An ambitious 'New Green Deal' is adopted but stakeholders resist (probably was a duplication from 2030) 	<p>10 years Scenario 2</p> <p>DO IT TOGETHER</p> <ol style="list-style-type: none"> Smaller-scale fisheries, under pressure by action groups, turn to aquaculture supported by EU funding programmes Farmers and industry get equal opportunities globally thanks to a comprehensive Carbon Border Adjustment Mechanism A 'New Green Deal' is adopted with an extraordinary high investment plan, supported by society 		
<p>10 years Scenario 1</p> <p>DO IT FOR US</p> <ol style="list-style-type: none"> Consumption of 'once through' bio-based materials from certified biomass has grown by 20% Despite education campaigns, social acceptance of sustainability policy lags behind Aggressive investments into transformation of supply systems to reduce GHG emissions 	<p>10 years Scenario 2</p> <p>DO IT TOGETHER</p> <ol style="list-style-type: none"> Advanced biofuels are receiving a boost by ambitious R&I programmes and by society's support to a more circular economy Civil society groups, across Europe, are concerned about ecological crises and contribute actively to the political and cultural debate Improved management and use of natural resources, reducing pressure on ecosystems and reversing biodiversity decline 		

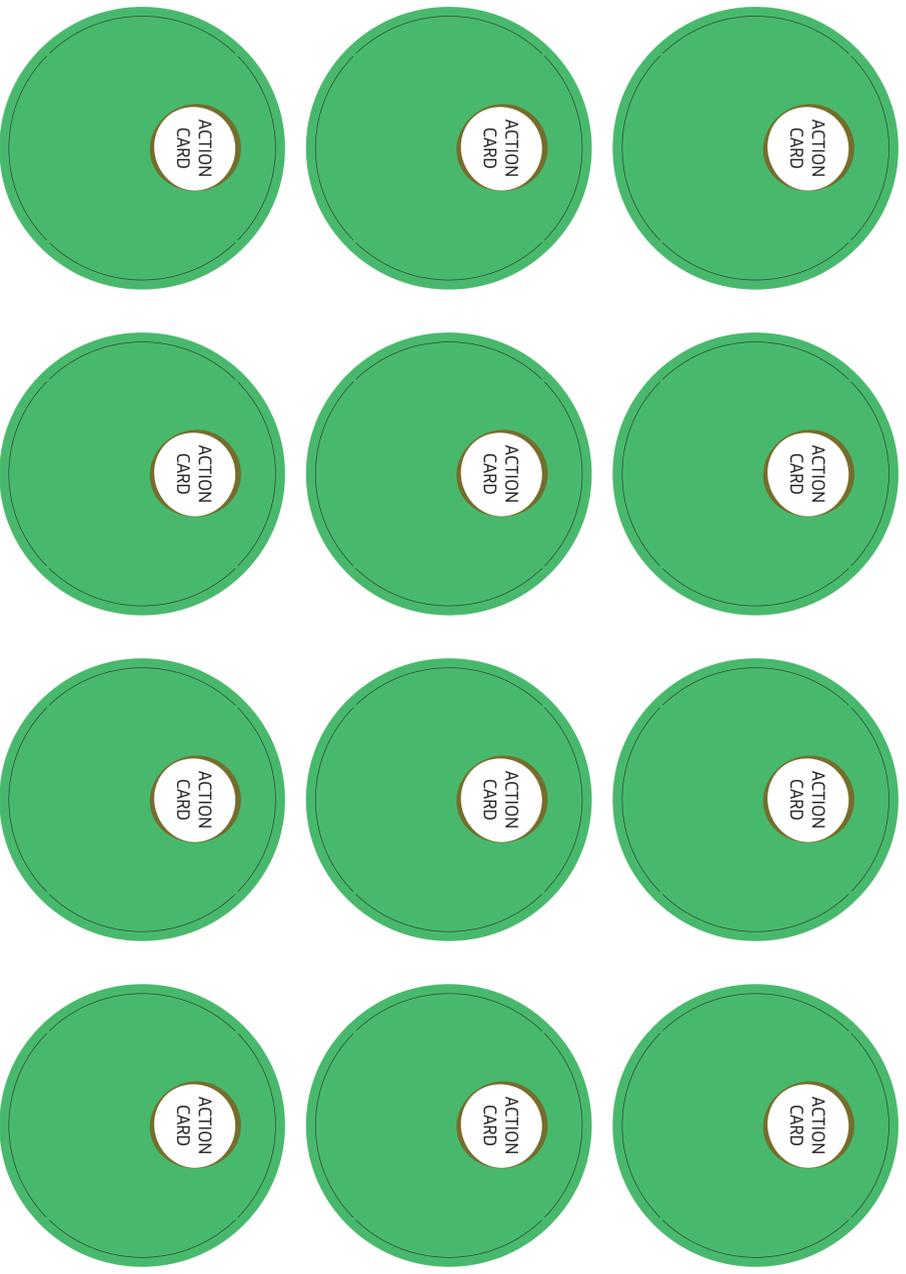
<p>30 years Scenario 3</p> <p>DO IT OURSELVES</p> <ol style="list-style-type: none"> Frequent extreme weather events and influential environmental movements, drive a reduction of wood harvest, but with negative socioeconomic impacts Strong polarisation between large-scale farms and small-medium multi-functional farms. Market fragmentation due to new and diversified demand Governments seem incapable to implement effective sustainability policies, and do not support the businesses 	<p>20 years Scenario 3</p> <p>DO IT OURSELVES</p> <ol style="list-style-type: none"> Dietary changes triggered by conscientious consumers revive local varieties and alternative fisheries and aquaculture species Limited access to finance and conservative attitude hinder business transformation Tensions emerge between (some) governments and social movements who advocate for ambitious sustainability policies 	<p>30 years Scenario 4</p> <p>DO WHAT IS UNAVOIDABLE</p> <ol style="list-style-type: none"> Due to increased environmental degradation, forest productivity, as well as carbon stocks and sequestration are reduced Environmental sustainability is now technology-driven, based on profitability Political fragmentation has not been overcome and the key actors fail to agree on agricultural and environmental reforms 	<p>20 years Scenario 4</p> <p>DO WHAT IS UNAVOIDABLE</p> <ol style="list-style-type: none"> The dependency on imports increases to compensate for agricultural land loss due to climate change impacts The farming sector becomes increasingly concentrated and specialised, yielding economies-of-scale Member States accuse each other of not acting enough for the environment and some pull out of important EU legislative measures
<p>30 years Scenario 3</p> <p>DO IT OURSELVES</p> <ol style="list-style-type: none"> Demand for imported certified bio-based products increases as domestic supply barely matches due to lack of policy support Citizens proactively seek to obtain new sustainability skills and competitive opportunities on the job market Decrease in biodiversity degradation thanks to consumers' responsible behaviour and choices towards recycling and circularity 	<p>20 years Scenario 3</p> <p>DO IT OURSELVES</p> <ol style="list-style-type: none"> Aviation and maritime sectors increase the demand for advanced biofuels and consumers adopt smart mobility measures Consumers proactively seek to obtain recycled materials, but slow policy development prohibits their availability in the markets Extreme weather events are more frequent than ever. Governments are accused of doing 'too little too late' 	<p>30 years Scenario 4</p> <p>DO WHAT IS UNAVOIDABLE</p> <ol style="list-style-type: none"> The transformation of production systems fails, with only half of energy market being renewable The worsening of environmental conditions create discontent in the society and the rise of a strong but fragmented environmentalist movement Soil degradation and loss of biodiversity worsen and the changing climate change is having a profound impact on primary production 	<p>20 years Scenario 4</p> <p>DO WHAT IS UNAVOIDABLE</p> <ol style="list-style-type: none"> Conventional fuels still dominate the economy, with only a small share of electricity and biofuels Social movements reduce pressure on politicians to balance short-term profit Many regions experience warming above global average levels. Extreme weather events are more frequent
<p>10 years Scenario 3</p> <p>DO IT OURSELVES</p> <ol style="list-style-type: none"> Local community-based bioeconomy initiatives start to flourish, introducing high-quality products on the market Innovative self-funded bioenterprises start to emerge, coexist and compete with the traditional mass production industry Politicians failed to make the best use of Green Deal funding instruments. Governmental institutions are turning to soft regulation 	<p>10 years Scenario 4</p> <p>DO WHAT IS UNAVOIDABLE</p> <ol style="list-style-type: none"> Wood supply and use are growing, without following sustainable management strategies EU imports of bio-based feedstocks increase, with intense pressure on food prices, and significant impacts outside EU The Green Deal goals seem out of reach as consumer behaviours and consumption patterns fail to adapt to the harsh climate change reality 		
<p>10 years Scenario 3</p> <p>DO IT OURSELVES</p> <ol style="list-style-type: none"> Domestic biomass production cannot meet the increasing demand for sustainable bio-based products and bioenergy EU civil society groups' concerns about ecological crises and the ineffective responses of the political system increase social media campaigns More intense and frequent extreme heat and drought events in several regions raise concerns in the broader society 	<p>10 years Scenario 4</p> <p>DO WHAT IS UNAVOIDABLE</p> <ol style="list-style-type: none"> The energy policy in the EU is rather fragmented with advanced biofuels derived from both domestic waste and increasing imports of feedstocks Diets/food-consumption habits have not changed significantly compared to 2020 The degradation of biodiversity continues due to the insufficient implementation of policies adopted a decade ago 		



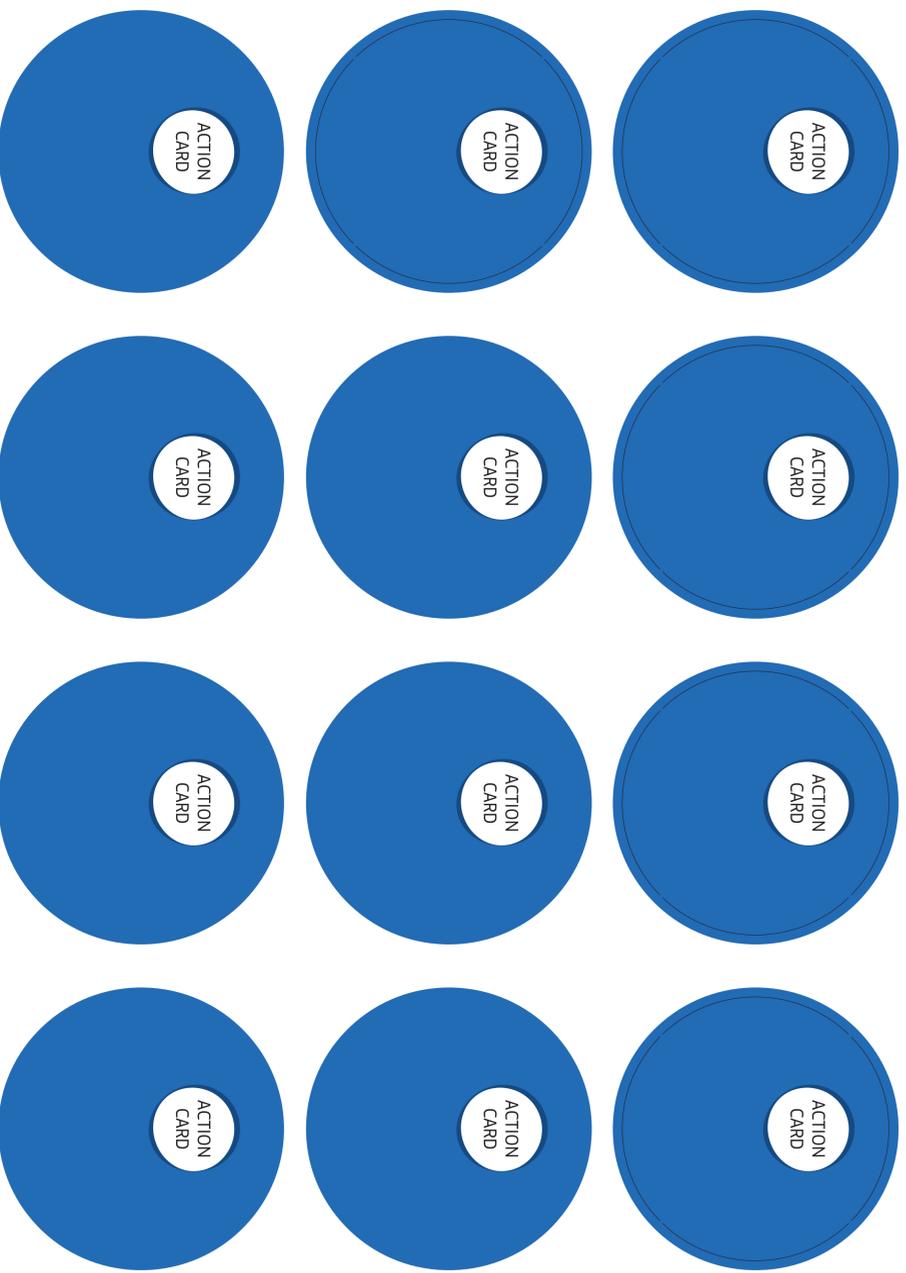
Rd-EN1/24



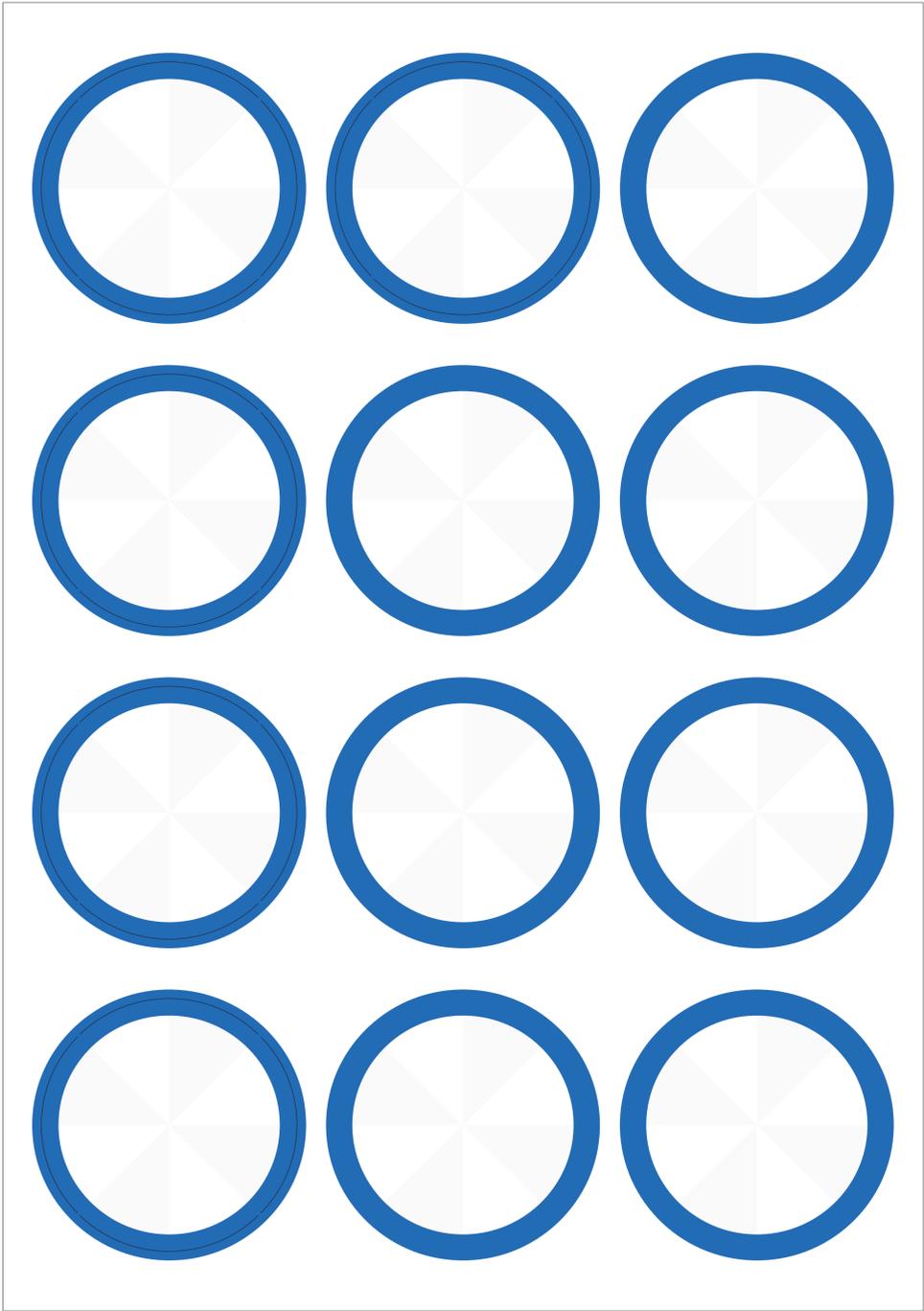
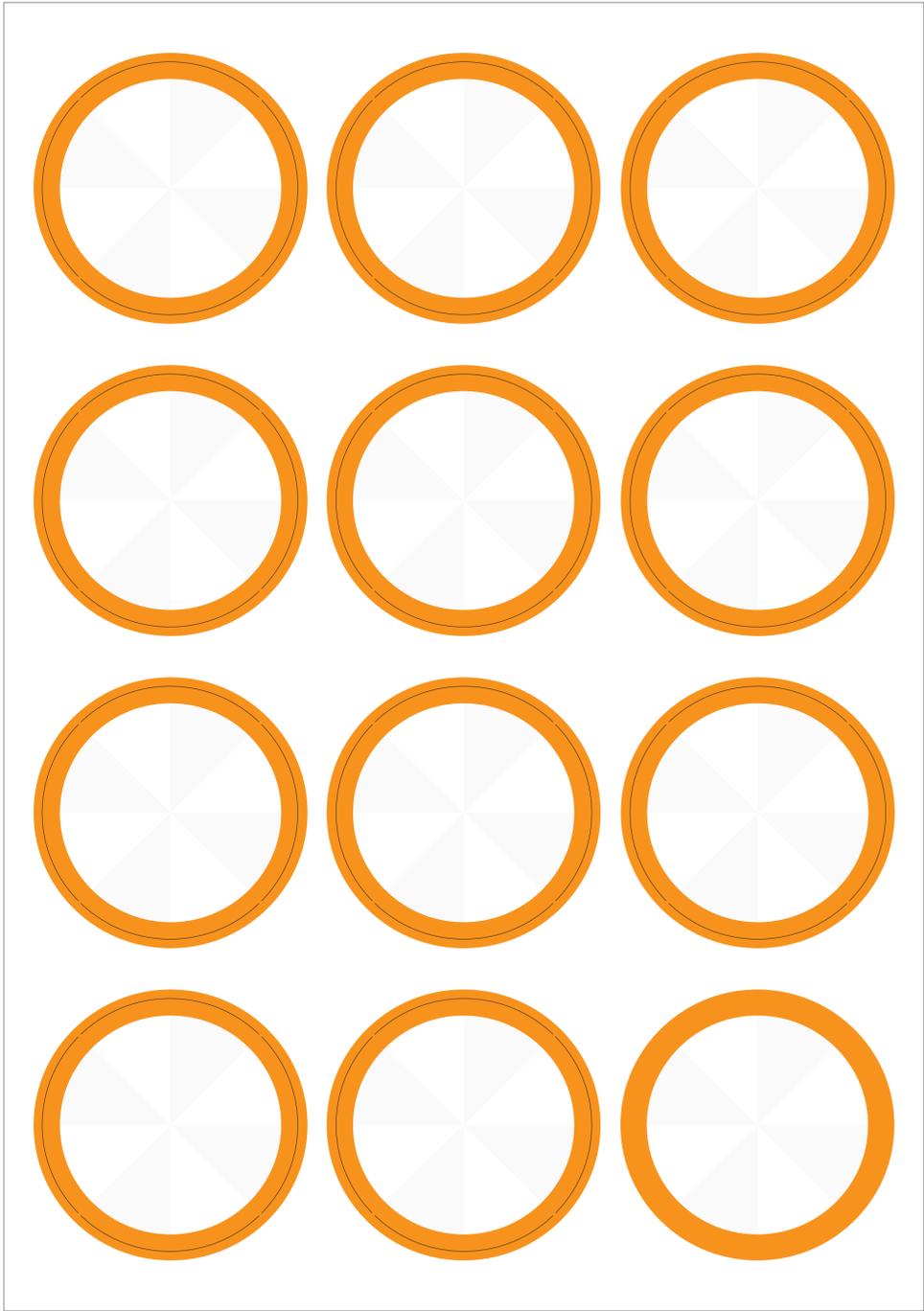
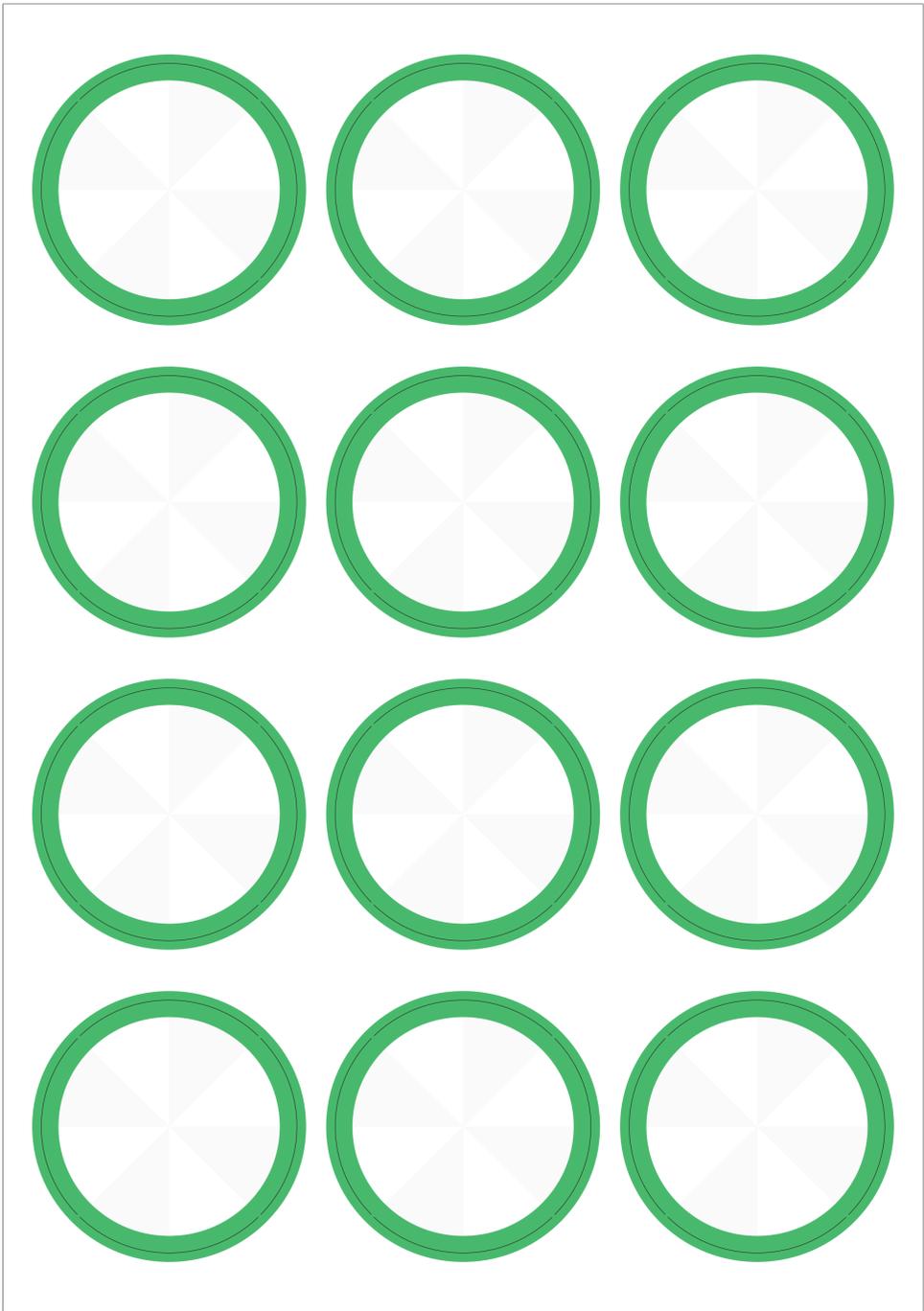
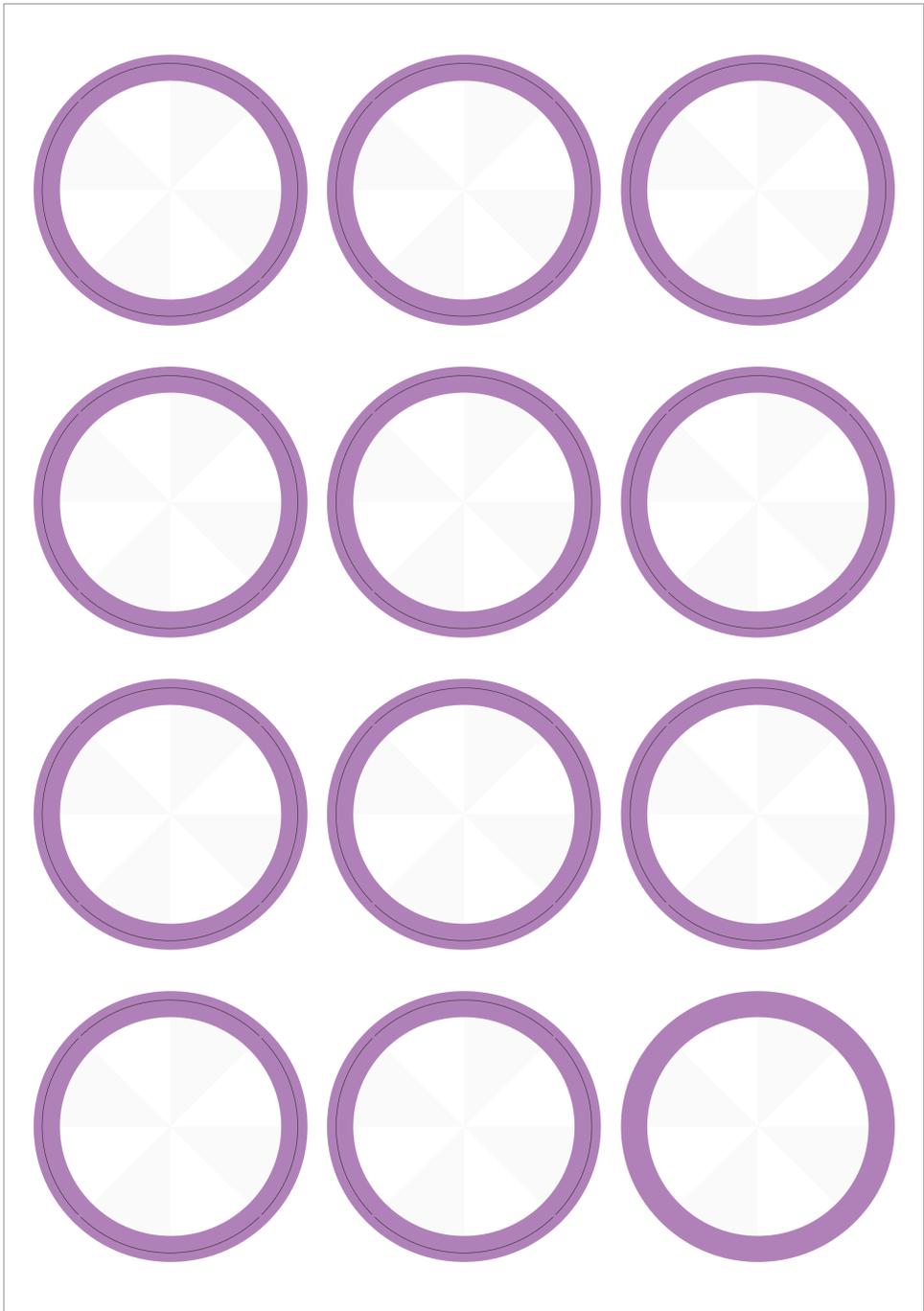
Rd-EN3/24

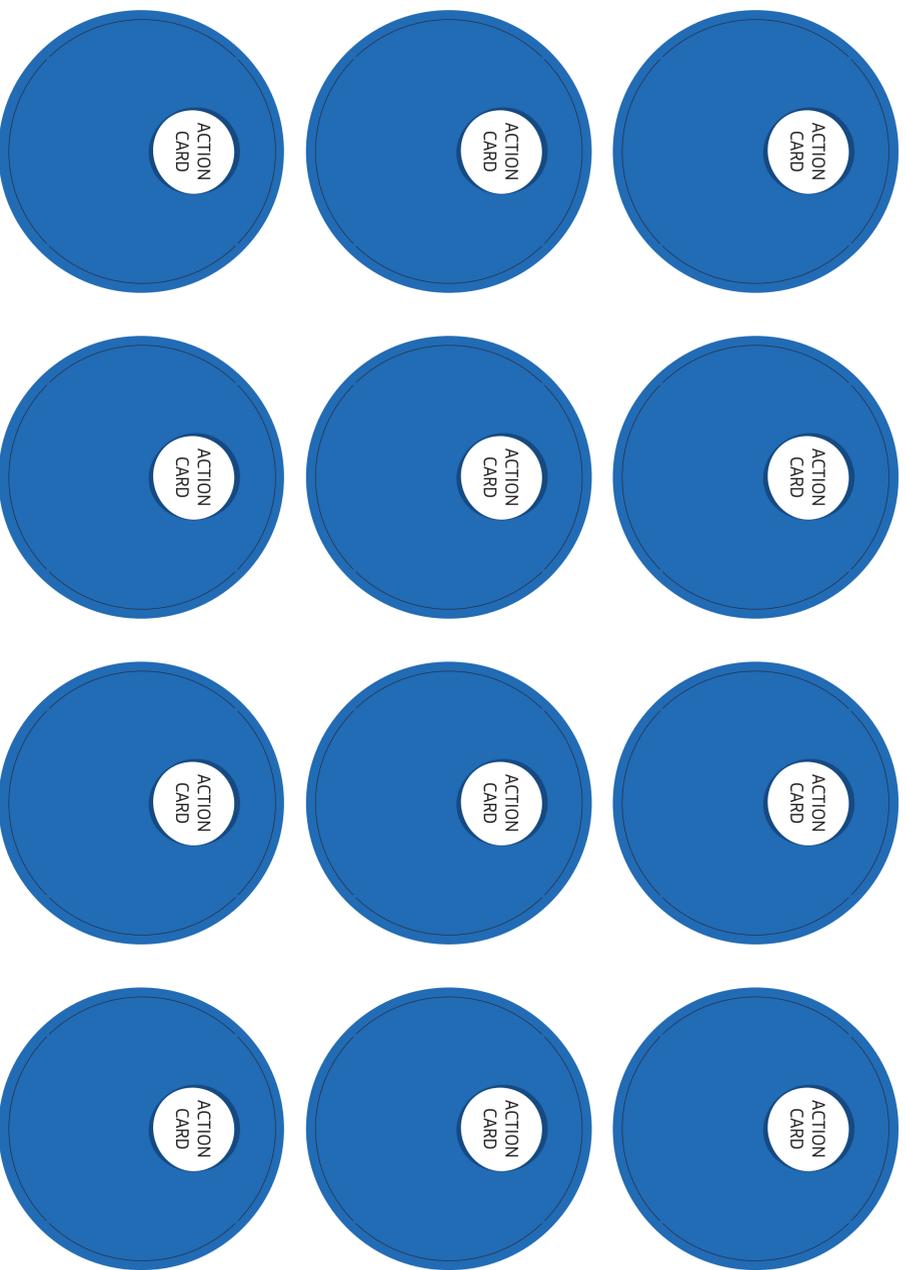
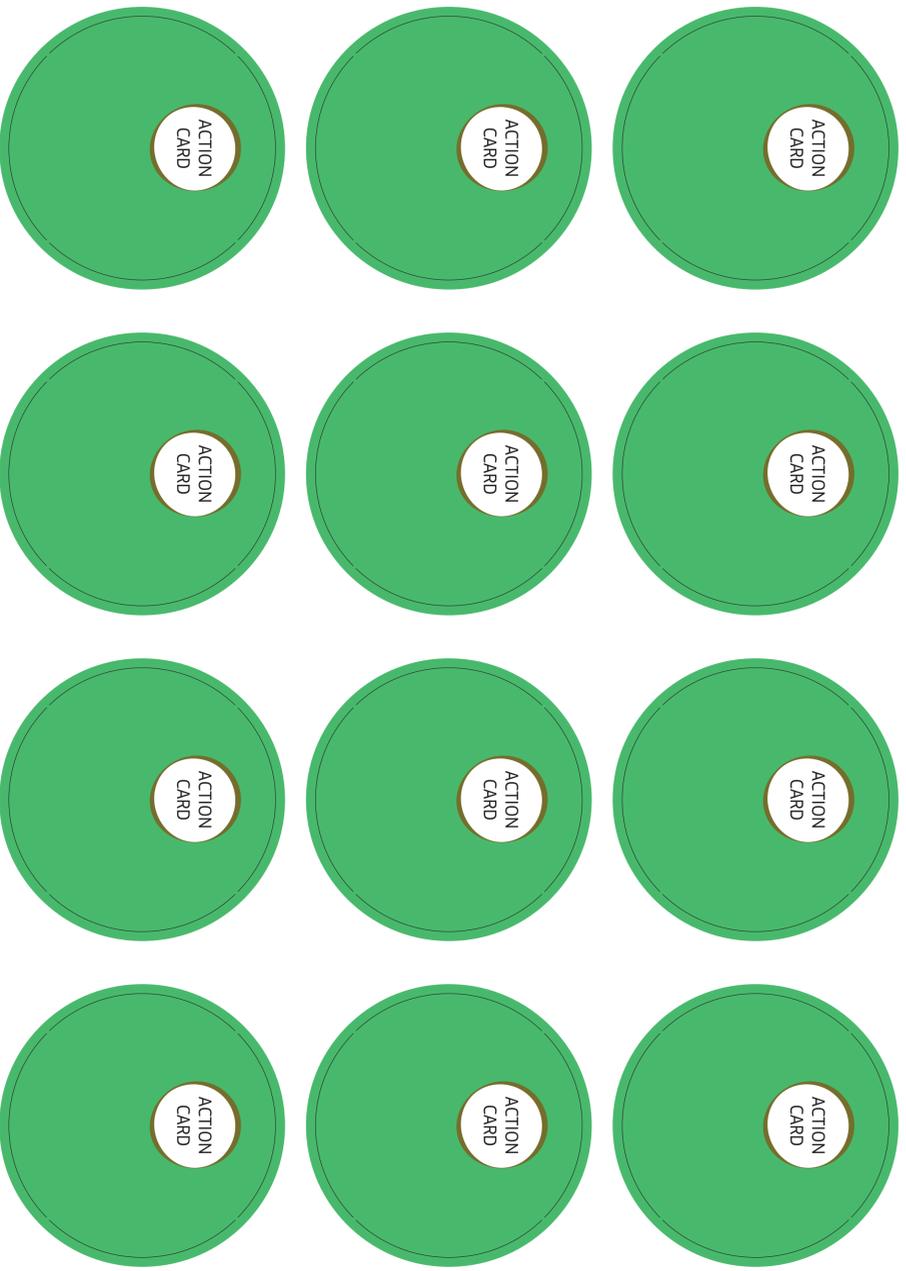
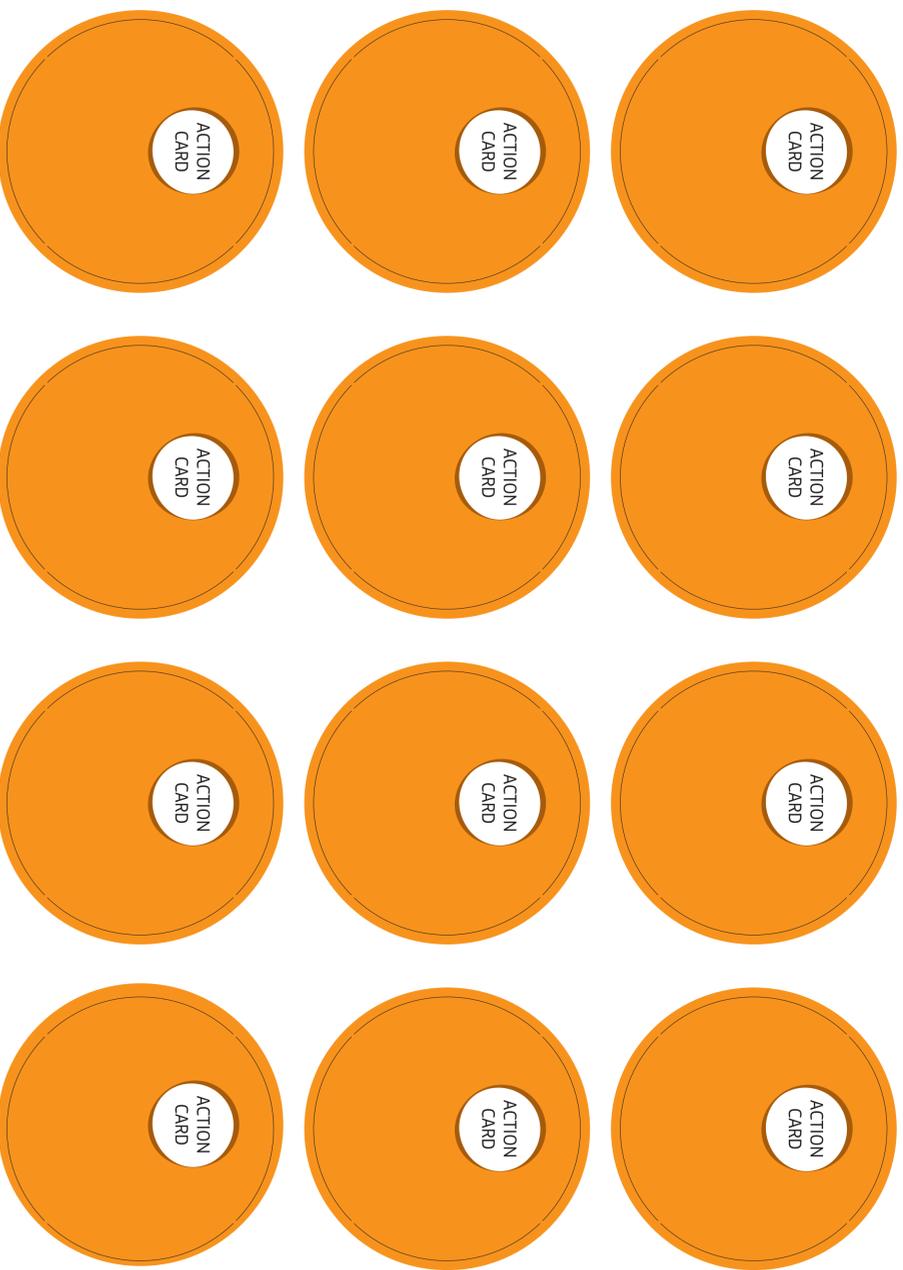
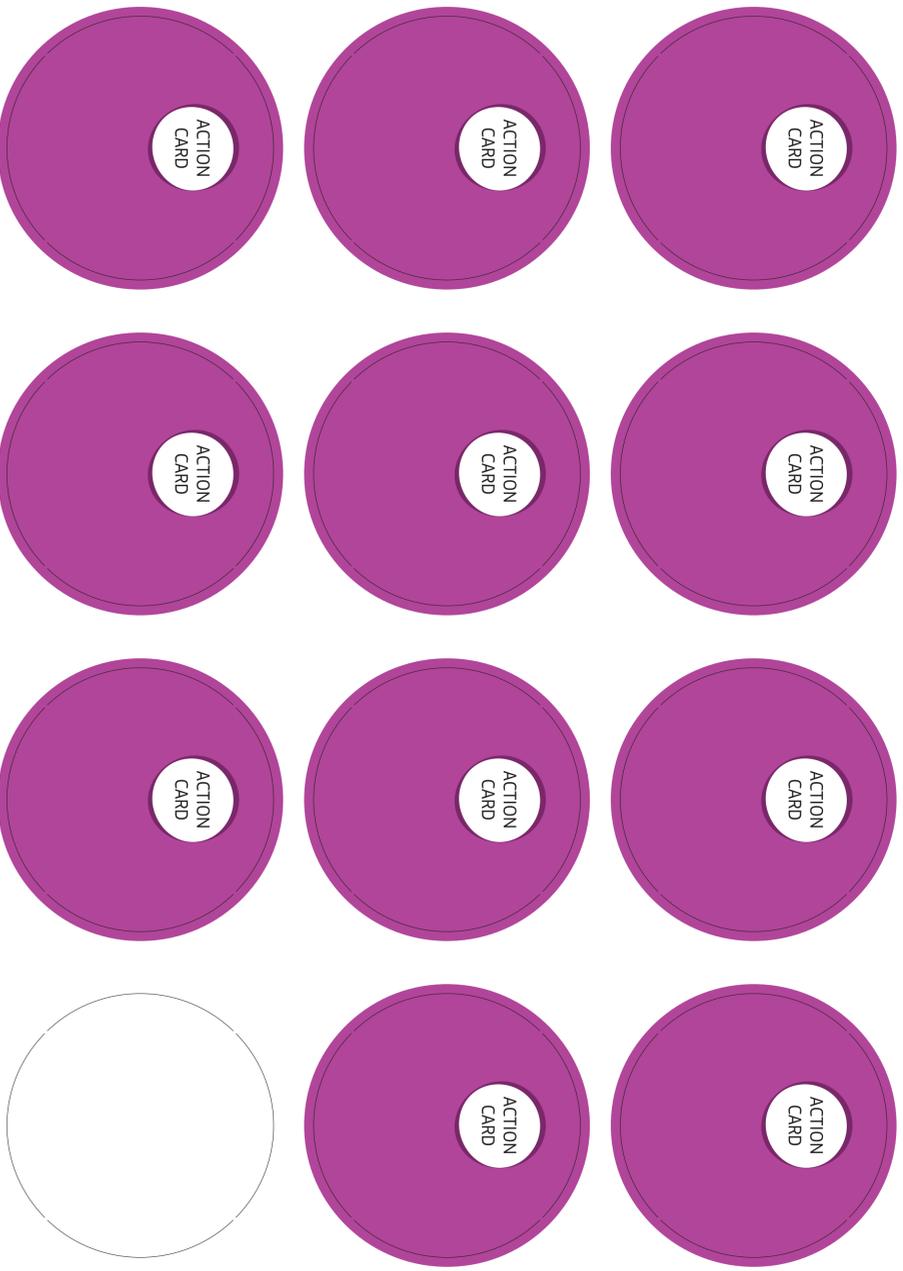


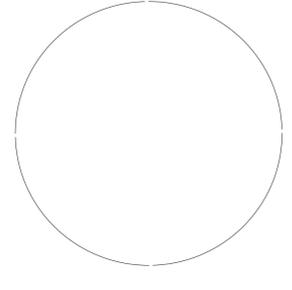
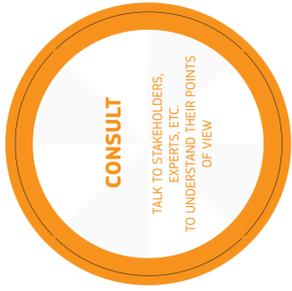
Rd-EN2/24



Rd-EN4/24









EXPLORER RECORD SHEET



SCENARIO: _____ PLACE / DATE: _____

ROLE: **Primary producer** **Consumer** **Policy maker** **Business**

NAME OF ORGANISATION: _____

DESCRIPTION OF THE ACTIVITY: _____

LONG-TERM VISION: _____

ROUND 1

ACTION: _____

ROUND 2

ACTION: _____

ROUND 3

ACTION: _____





EXPLORER RECORD SHEET



SCENARIO: _____ PLACE / DATE: _____

ROLE: **Primary producer** **Consumer** **Policy maker** **Business**

NAME OF ORGANISATION: _____

DESCRIPTION OF THE ACTIVITY: _____

LONG-TERM VISION: _____

ROUND 1

ACTION: _____

ROUND 2

ACTION: _____

ROUND 3

ACTION: _____





EXPLORER RECORD SHEET



SCENARIO: _____ PLACE / DATE: _____

PLAYER ROLE: **Primary producer** **Consumer** **Policy maker** **Business**

NAME OF ORGANISATION: _____

DESCRIPTION OF THE ACTIVITY: _____

LONG-TERM VISION: _____

ROUND 1

ACTION: _____

ROUND 2

ACTION: _____

ROUND 3

ACTION: _____





EXPLORER RECORD SHEET



SCENARIO: _____ PLACE / DATE: _____

PLAYER ROLE: **Primary producer** **Consumer** **Policy maker** **Business**

NAME OF ORGANISATION: _____

DESCRIPTION OF THE ACTIVITY: _____

LONG-TERM VISION: _____

ROUND 1

ACTION: _____

ROUND 2

ACTION: _____

ROUND 3

ACTION: _____





PUBLIC VOICE RECORD SHEET



SCENARIO TITLE: _____ Place/Date: _____

DESCRIPTION OF THE TYPE OF OPINION THAT YOU REPRESENT: : _____

ROUND 1

YOUR OPINION ON THE ACTIONS TAKEN: _____

1. _____

2. _____

3. _____

4. _____

ROUND 2

YOUR OPINION ON THE ACTIONS TAKEN: _____

1. _____

2. _____

3. _____

4. _____

ROUND 3

YOUR OPINION ON THE ACTIONS TAKEN: _____

1. _____

2. _____

3. _____

4. _____





PUBLIC VOICE RECORD SHEET



SCENARIO TITLE: _____ Place/Date: _____

DESCRIPTION OF THE TYPE OF OPINION THAT YOU REPRESENT: _____

ROUND 1

YOUR OPINION ON THE ACTIONS TAKEN: _____

1. _____

2. _____

3. _____

4. _____

ROUND 2

YOUR OPINION ON THE ACTIONS TAKEN: _____

1. _____

2. _____

3. _____

4. _____

ROUND 3

YOUR OPINION ON THE ACTIONS TAKEN: _____

1. _____

2. _____

3. _____

4. _____





MEDIA HEADLINES RECORD SHEET



SCENARIO TITLE: _____ Place/Date: _____

DESCRIPTION OF THE TYPE OF MEDIA THAT YOU REPRESENT: _____

ROUND 1

THE HEADLINES YOU WANT TO PUBLISH AFTER THIS ROUND:

1. _____

2. _____

3. _____

ROUND 2

THE HEADLINES YOU WANT TO PUBLISH AFTER THIS ROUND:

1. _____

2. _____

3. _____

ROUND 3

THE HEADLINES YOU WANT TO PUBLISH AFTER THIS ROUND:

1. _____

2. _____

3. _____





MEDIA HEADLINES RECORD SHEET



SCENARIO TITLE: _____ Place/Date: _____

DESCRIPTION OF THE TYPE OF MEDIA THAT YOU REPRESENT: _____

ROUND 1

THE HEADLINES YOU WANT TO PUBLISH AFTER THIS ROUND:

1. _____

2. _____

3. _____

ROUND 2

THE HEADLINES YOU WANT TO PUBLISH AFTER THIS ROUND:

1. _____

2. _____

3. _____

ROUND 3

THE HEADLINES YOU WANT TO PUBLISH AFTER THIS ROUND:

1. _____

2. _____

3. _____





SCORING RECORD SHEET



SCENARIO TITLE: _____ DATE _____ PLACE _____

ROLE 1	PRIMARY PRODUCER	ROLE 3	POLICY MAKER
ROLE 2	CONSUMER	ROLE 4	BUSINESS

ROUND 1

Action from	RESOURCE TOKENS	FUTURE IMPACT TOKENS	SCORE
EXPLORER 1			
EXPLORER 2			
EXPLORER 3			
EXPLORER 4			

ROUND 2

	OWN RESOURCE TOKENS	COLLABORATION				FUTURE IMPACT TOKENS	SCORE PER ACTION		EXPLORER SCORE ROUND 2
		1	2	3	4				
ACTION 1								EXPLORER 1	
ACTION 2								EXPLORER 2	
ACTION 3								EXPLORER 3	
ACTION 4								EXPLORER 4	

Score per action = (Own R.T. + Coll. R.T.) x F.I.T. Explorer score = sum of the scores of all actions in which (s)he participated

ROUND 3

	OWN RESOURCE TOKENS	COLLABORATION				FUTURE IMPACT TOKENS	SCORE PER ACTION		EXPLORER SCORE ROUND 2
		1	2	3	4				
ACTION 1								EXPLORER 1	
ACTION 2								EXPLORER 2	
ACTION 3								EXPLORER 3	
ACTION 4								EXPLORER 4	

Score per action = (Own R.T. + Coll. R.T.) x F.I.T. Explorer score = sum of the scores of all actions in which (s)he participated

TOTAL

EXPLORER 1	EXPLORER 2	EXPLORER 3	EXPLORER 4





SCORING RECORD SHEET



SCENARIO TITLE: _____ DATE _____ PLACE _____

ROLE 1	PRIMARY PRODUCER	ROLE 3	POLICY MAKER
ROLE 2	CONSUMER	ROLE 4	BUSINESS

ROUND 1

Action from	RESOURCE TOKENS	FUTURE IMPACT TOKENS	SCORE
EXPLORER 1			
EXPLORER 2			
EXPLORER 3			
EXPLORER 4			

ROUND 2

	OWN RESOURCE TOKENS	COLLABORATION				FUTURE IMPACT TOKENS	SCORE PER ACTION		EXPLORER SCORE ROUND 2
		1	2	3	4				
ACTION 1								EXPLORER 1	
ACTION 2								EXPLORER 2	
ACTION 3								EXPLORER 3	
ACTION 4								EXPLORER 4	

Score per action = (Own R.T. + Coll. R.T.) x F.I.T. Explorer score = sum of the scores of all actions in which (s)he participated

ROUND 3

	OWN RESOURCE TOKENS	COLLABORATION				FUTURE IMPACT TOKENS	SCORE PER ACTION		EXPLORER SCORE ROUND 2
		1	2	3	4				
ACTION 1								EXPLORER 1	
ACTION 2								EXPLORER 2	
ACTION 3								EXPLORER 3	
ACTION 4								EXPLORER 4	

Score per action = (Own R.T. + Coll. R.T.) x F.I.T. Explorer score = sum of the scores of all actions in which (s)he participated

TOTAL

EXPLORER 1	EXPLORER 2	EXPLORER 3	EXPLORER 4





PARTICIPANT SURVEY



Bioeconomy Scenario Exploration System

Date: _____ Place: _____

1) What was your role in today's exploration? (Circle as appropriate)

Primary producer	Consumer	Policy maker	Business	Public voice
------------------	----------	--------------	----------	--------------

2) How would you rate the enjoyability of this session? (0 = Not Fun, 10= Best Fun Ever)

0	2	4	6	8	10
---	---	---	---	---	----

3) How would you rate the usefulness of this session? (0 = Not useful, 10= Extremely useful)

0	2	4	6	8	10
---	---	---	---	---	----

4) What element(s) of this session were the most useful?

5) What would you change to make the exploration more enjoyable?

6) What would you change to make the exploration more useful?

7) How well did the session help you take a future-oriented perspective?

0 (Not)	2	4	6	8	10 (Very well)
---------	---	---	---	---	----------------

8) How well did the Scenario Exploration System help you understand the scenario?

0 (Not)	2	4	6	8	10 (Very well)
---------	---	---	---	---	----------------



9) Did the scenario exploration help you develop a strategic perspective?

YES	NO
-----	----

10) Did anything surprise you during the exploration?
If yes, what?

YES	NO
-----	----

11) Which elements of the game you found too general or vague?

Scenario details	Megatrends	Variable driver	Summary of the journalist	Action cards
------------------	------------	-----------------	---------------------------	--------------

12) What would you change, from a content point of view, to make the scenario exploration a better learning experience?

13) What would you change, from organisational point of view, to make the scenario exploration a better learning experience?

14) If you have any other comments, please write them below.



