

The State of Baden-Württemberg

Second Green Bond Baden-Württemberg

**Investor
Presentation
May 23, 2022**



Baden-Württemberg

MINISTERIUM FÜR FINANZEN

Agenda

01 Executive Summary

02 The State of Baden-Württemberg

03 Sustainability Strategy

04 Green Bond Framework



Executive Summary

THE STATE OF BADEN- WÜRTTEMBERG

- No. 3 among the German federal states in terms of GDP, population and surface area
- Rating: Aaa / AA+ (Moody's / S&P)¹⁾
- Established frequent EUR benchmark issuer

SUSTAINABILITY STRATEGY

- Since 2007, but continuously amended in accordance with EU requirements
- Established reporting structures on key indicators and on measures of each separate ministry
- Supporting measures in financial management include procurement strategy, asset management and now the Green Bond Baden-Württemberg issuance activity

GREEN BOND FRAMEWORK

- Use of proceeds comply with the guidelines of the ICMA Green Bond Principles and environmental objectives of the EU Taxonomy and UN Sustainable Development Goals
- Second Party Opinion (SPO) provided by Moody's ESG Solutions
- Impact evaluation for the Inaugural Green Bond 2021 has been published by Wuppertal Institut in Q1 2022

SECOND GREEN BOND

- Second Green Bond Baden-Württemberg expected to be priced in Q2 2022 - subject to market conditions
- Total of EUR 377 million eligible expenditure from budget year 2021²⁾
- EUR 350 million bond size, allocation 92.8% of eligible expenditure

1) Ratings Moody's as of 21/03/2022, S&P 14/02/2022

2) See "Projectlist #2" for two minor corrections in actual expenditure.

Agenda

01 Executive Summary

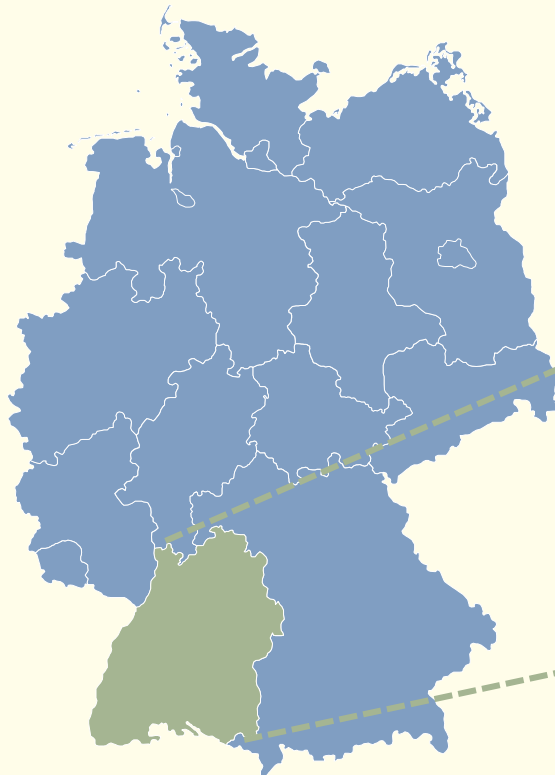
02 The State of Baden-Württemberg

03 Sustainability Strategy

04 Green Bond Framework



The State of Baden-Württemberg is one of the largest German states by population, GDP and surface area



The State of Baden-Württemberg

	Ranking within German states	Value¹⁾
Population	No. 3	11.1 mn (2020)
GDP	No. 3	EUR 536.0 bn (2021)
Surface area	No. 3	35,748 km ² (2020)

The State of Baden-Württemberg is a federal state with its own parliament, government and budget autonomy



The State of Baden-Württemberg

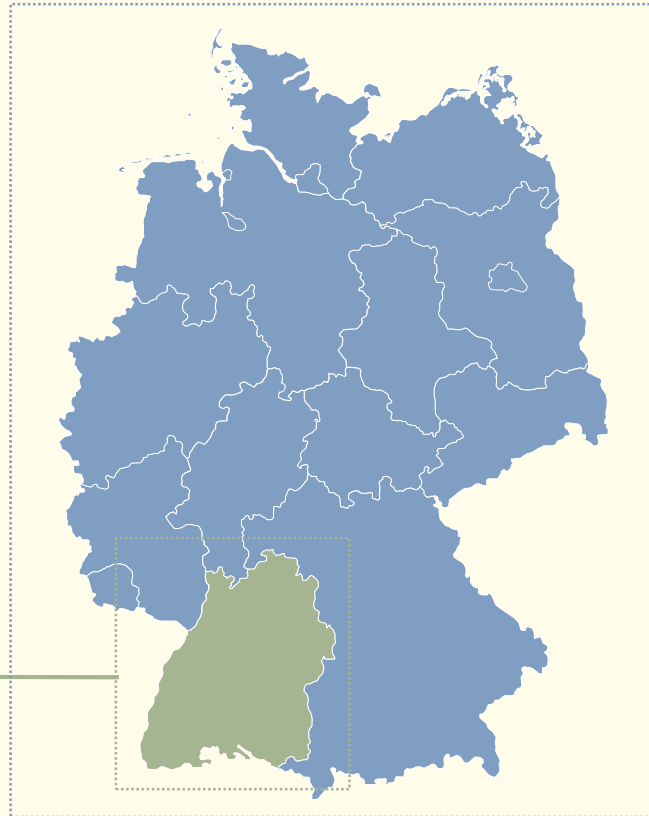
State expenditure (2021)¹⁾:
EUR 69.8 bn

Current government:

**Green
Party**



Conservatives



Federal Republic of Germany

State expenditure (2021, preliminary)¹⁾:
EUR 557.1 bn

Current government:

**Social
Democrats**



**Green
Party**



**Free
Democrats**



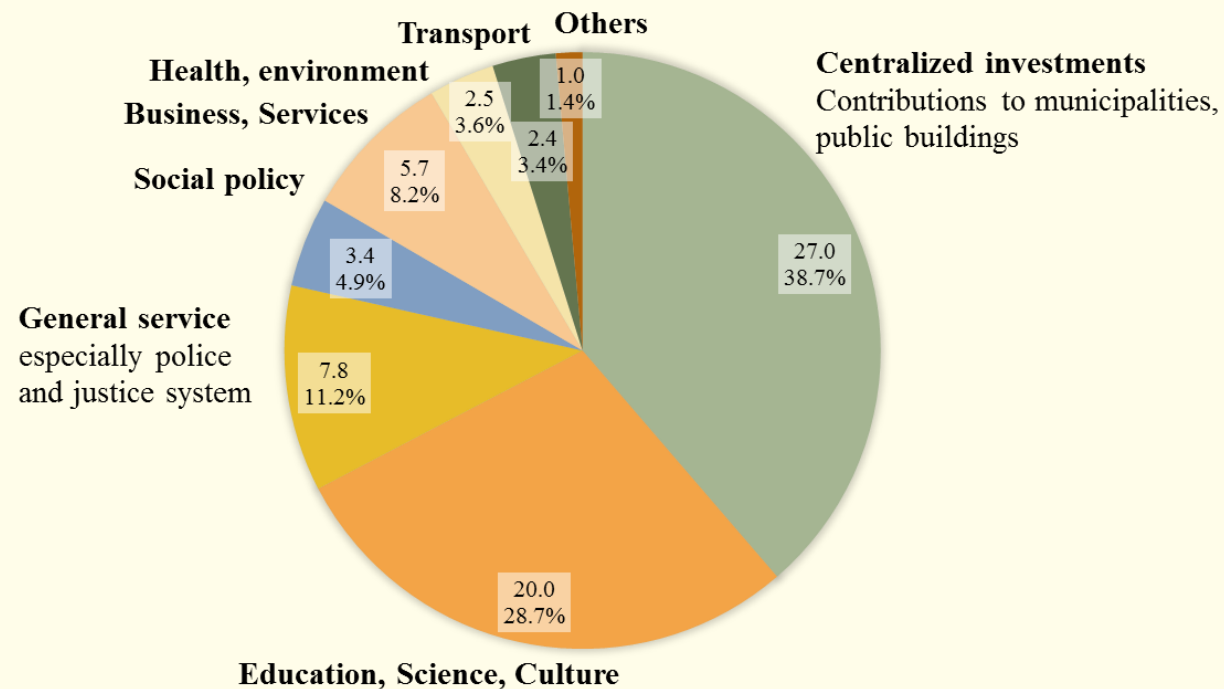
Basic Law for the Federal Republic of Germany: "The Federation and the *Länder* shall be autonomous and independent of one another in the management of their respective budgets." (Article 109, § 1)

Source: The State of Baden-Württemberg
1) Rounded figures

Expenditure focuses on financing municipalities, public buildings, education, science, police and justice system

State expenditure¹⁾

2021 actual, by area of activity, EUR 69.8 bn

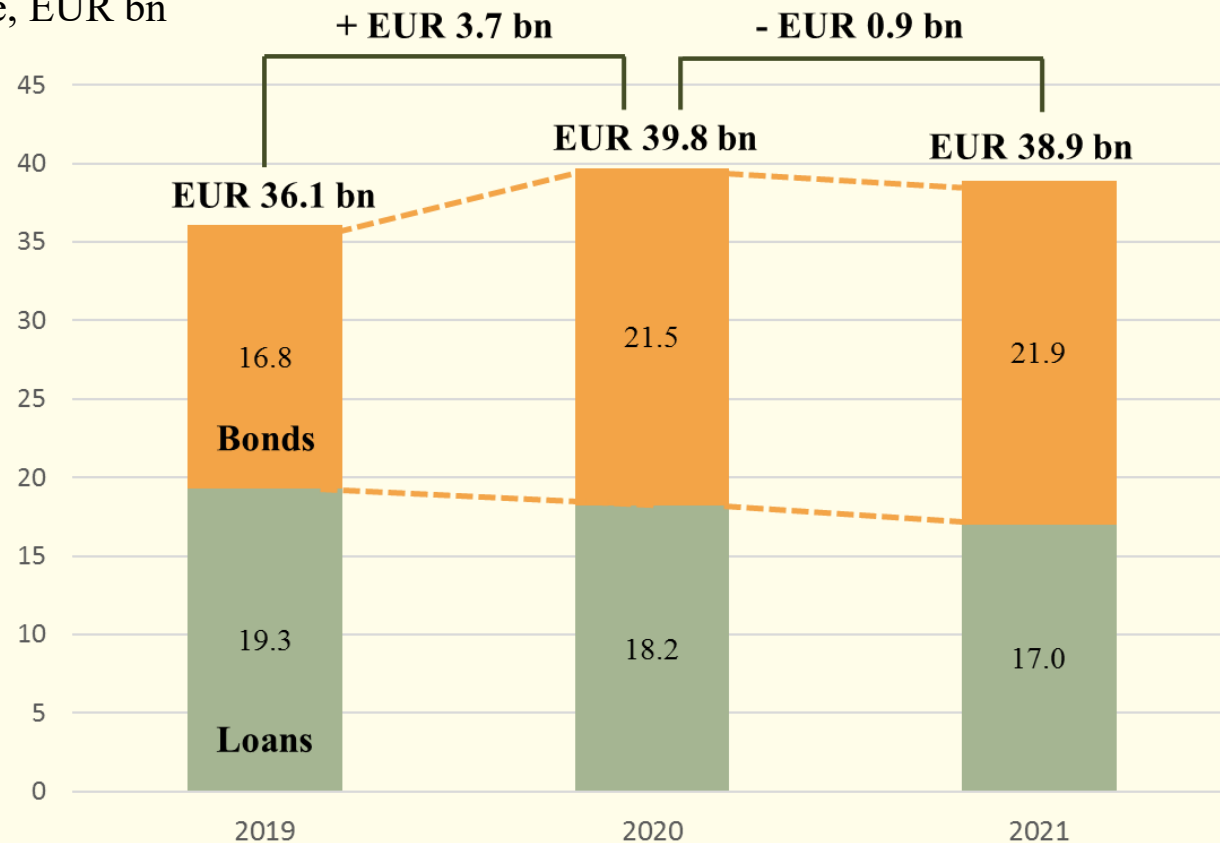


Source: The State of Baden-Württemberg
1) Rounded figures

2020 capital market debt increased by EUR 3.7 billion, 2021 partial refinancing to a total of 38.9 billion¹⁾

Total capital market debt¹⁾

by type, EUR bn



Credit Ratings²⁾

Moody's

Aaa

S&P

AA+
(until Aug 14, 2020: AAA)

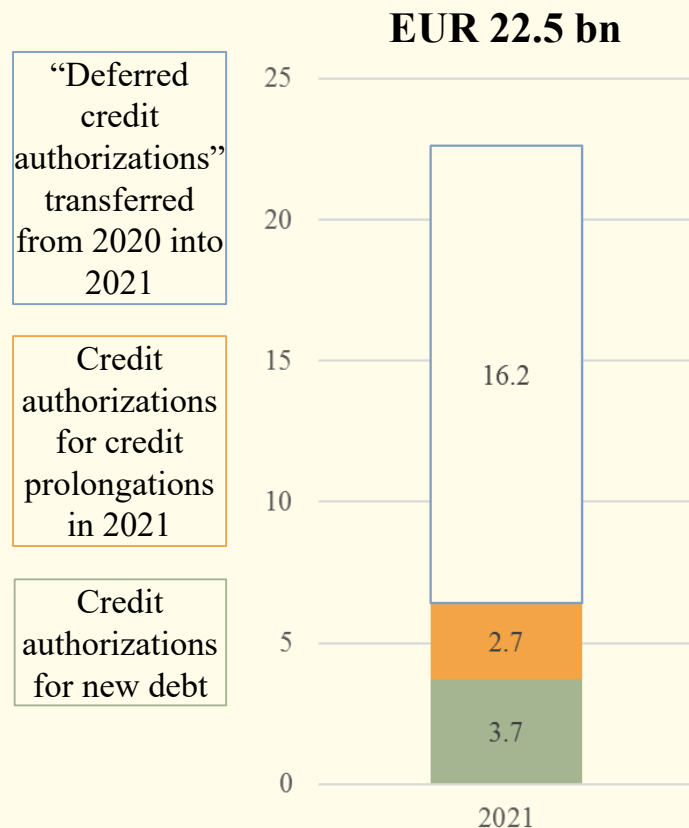
Source: The State of Baden-Württemberg
 1) Rounded figures
 2) Ratings Moody's as of 21/03/2022, S&P 14/02/2022

Large share of credit authorizations transferred to 2022

- higher tax income, lower outflow than expected

Gross credit authorizations 2021¹⁾

EUR bn

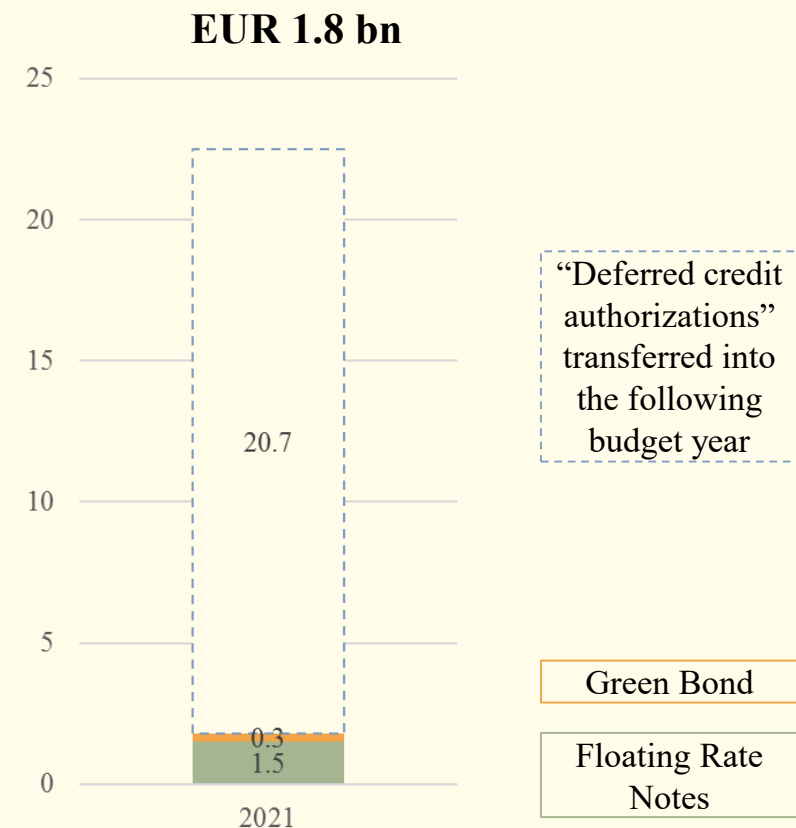


Deferred credit authorizations generally allow for:

- Delay in spending, postponing funding needs
- Balanced capital market activity
- Liquidity management

Capital market activity 2021¹⁾

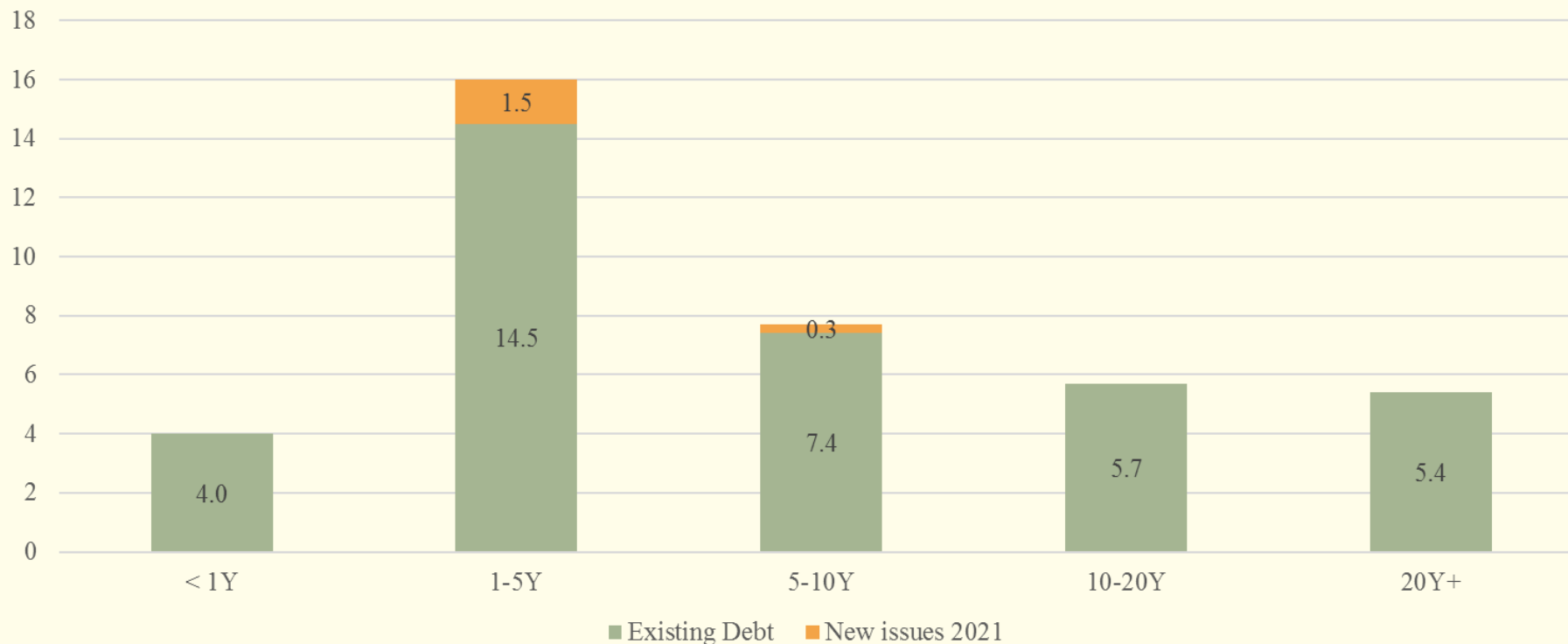
EUR bn



Maturity profile is 8.1 years on average – Floating rate issues within 1 to 5 years, fixed rates typically longer

Capital market debt by maturities as of 31/12/2021¹⁾

EUR bn

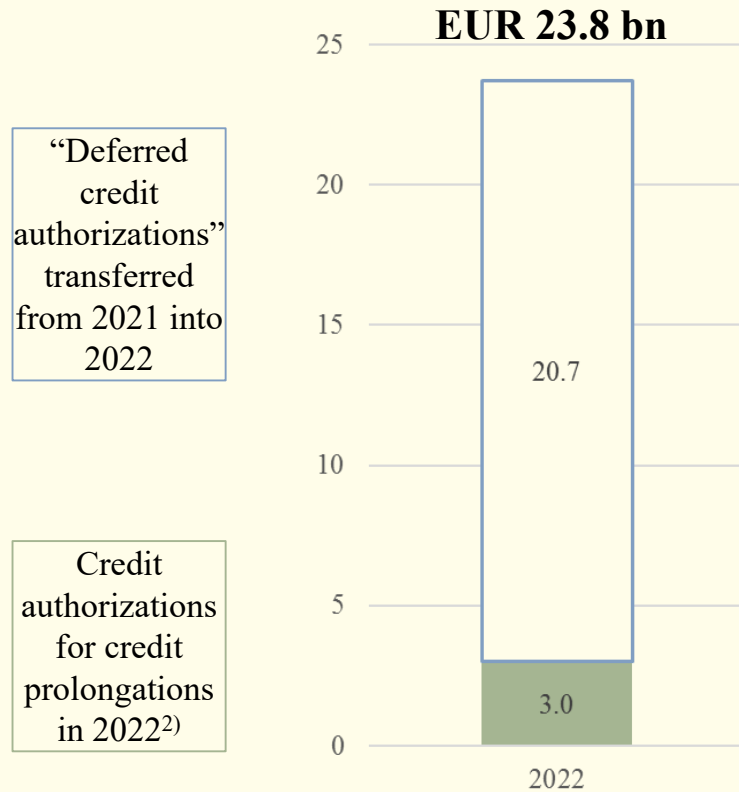


Source: The State of Baden-Württemberg
1) Rounded figures

Market activity for 2022 expected to be low due to planned reduction of liquidity buffers

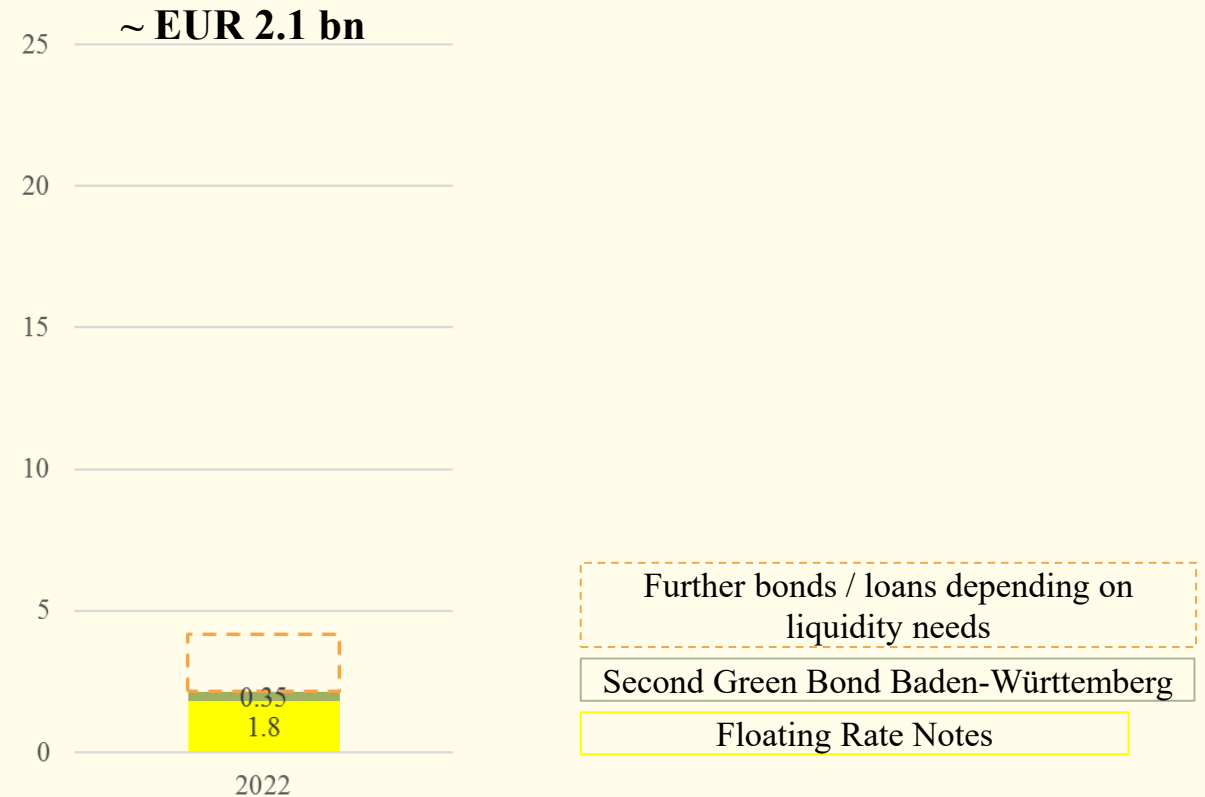
Gross credit authorizations 2022¹⁾

EUR bn



Expected capital market activity 2022¹⁾

EUR bn



Source: The State of Baden-Württemberg

1) Rounded figures

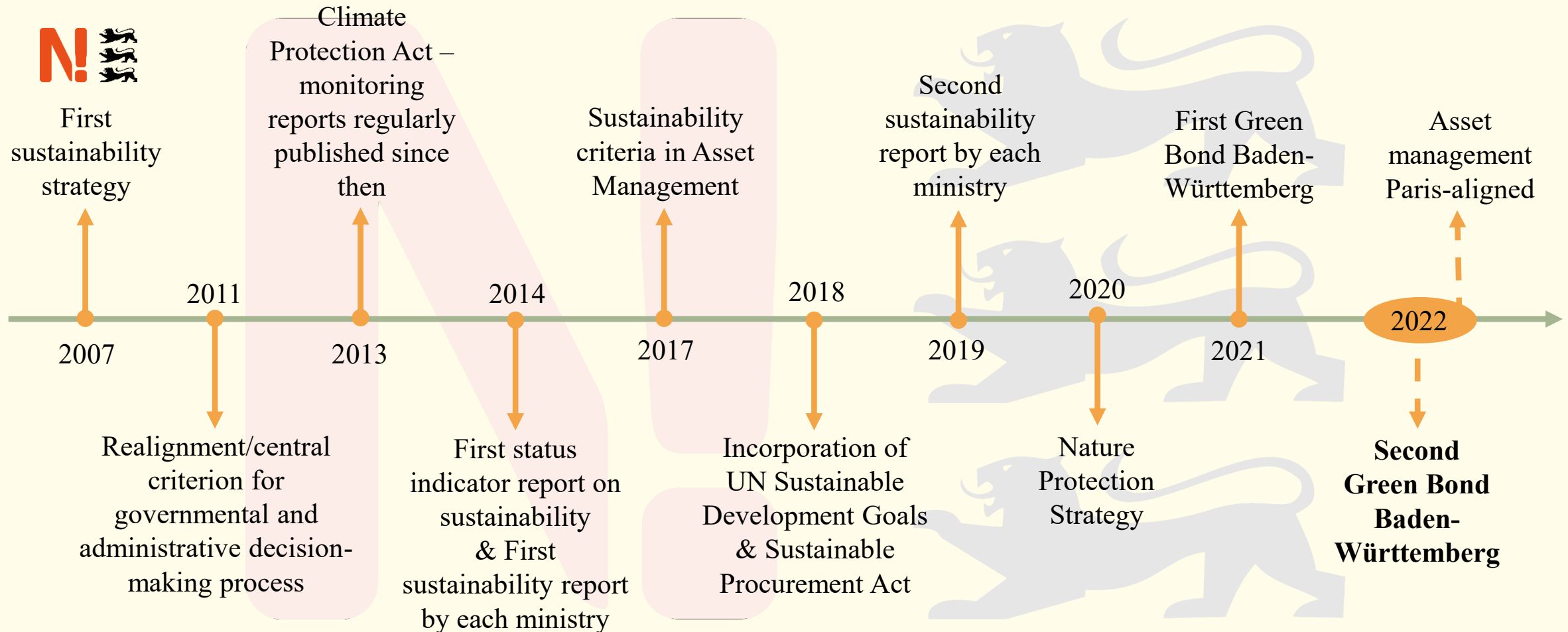
2) Value reduced by 1.0 bn EUR repayment obligation

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- 01 Executive Summary
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- 03 Sustainability Strategy**
- 04 Green Bond Framework

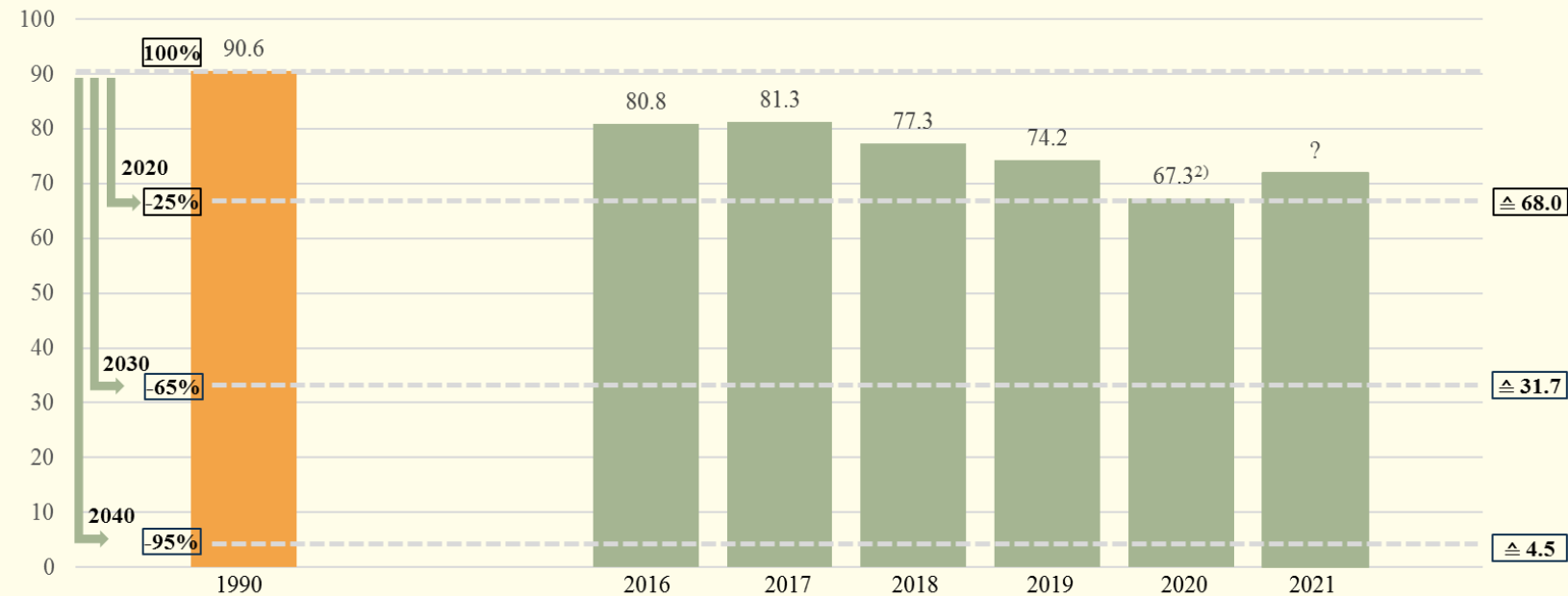


Baden-Württemberg has initiated a sustainability strategy back in 2007 that has constantly evolved



The climate protection goals for the State of Baden-Württemberg are ambitious

GHG emissions¹⁾
mn t CO₂-equivalent



Committed reduction targets for 2030 and 2040 compared to 1990 baseline numbers

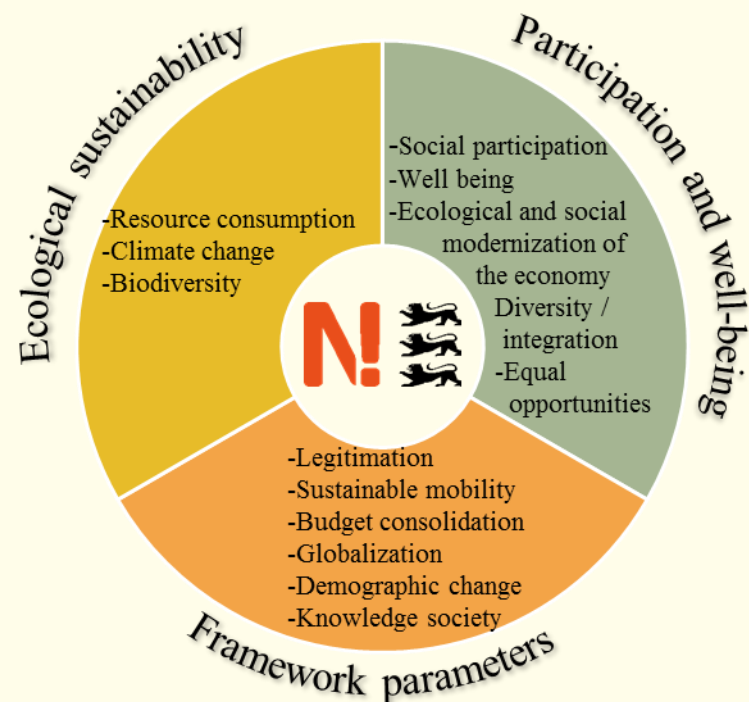
Source: The State of Baden-Württemberg

1) Rounded figures. Greenhouse gas emissions including carbon dioxide, methane, nitrous oxide and fluorinated greenhouse gases.

2) 2020 is a estimate of the statistical office from fall 2021

The sustainability strategy comprises all areas of sustainable governance

Sustainability challenges

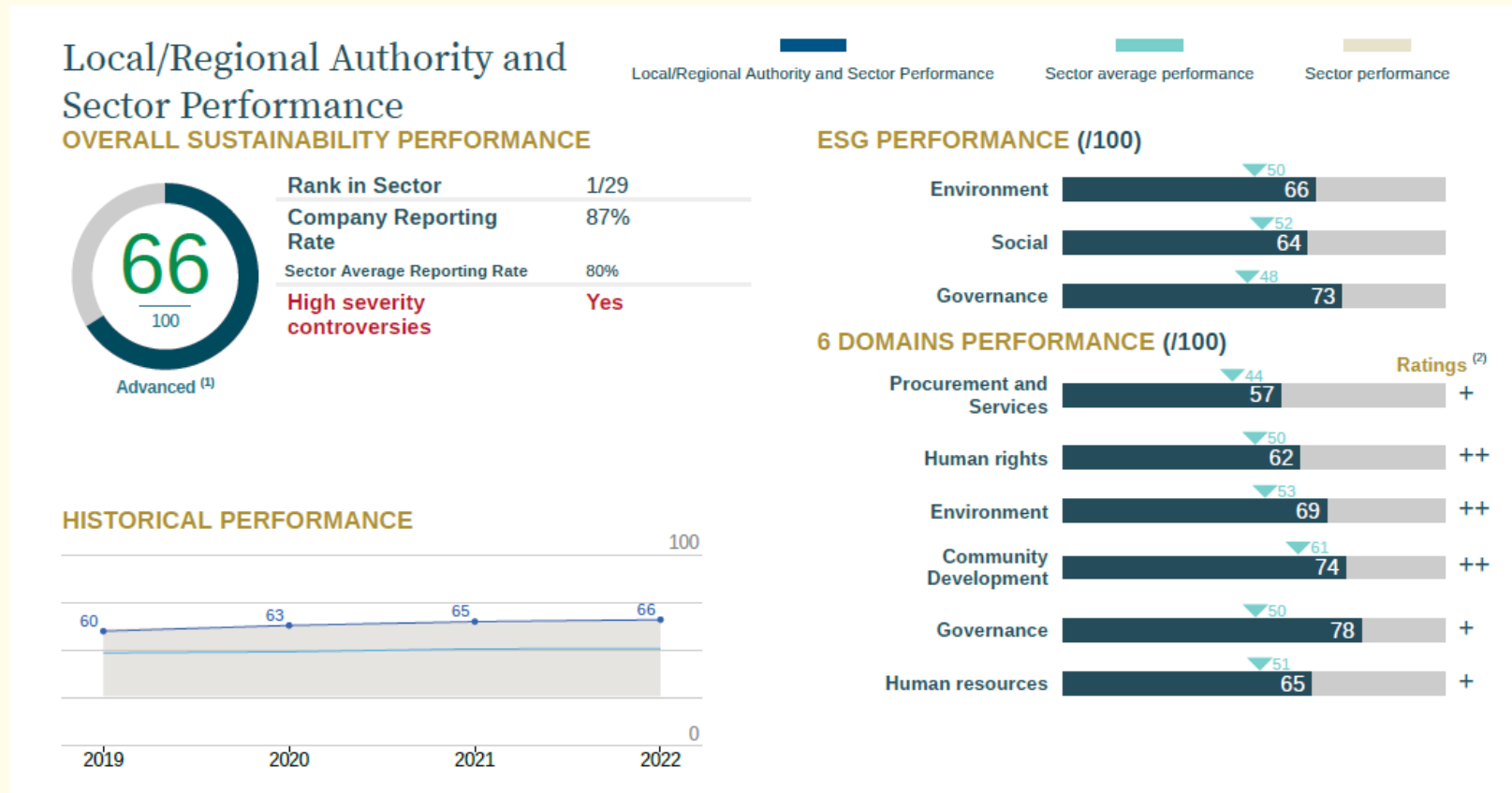


Guiding principles (selection)

“Acting sustainably in Baden-Württemberg means...”

- I. ... implementing the energy transition quickly, safely and affordably with the involvement of civil society.
- II. ... perceiving climate protection as a cross-sectional task and minimising environmental-related threats due to climate change.
- III. ... promoting and implementing innovative, environmentally friendly and social mobility concepts.
- IV. ... implementing a future-oriented urban and spatial development.
- V. ... optimising the use of resources and decoupling economic growth from the consumption of natural raw materials.
- VI. ...protecting and preserving the livelihood, diverse nature and unique cultural landscapes of the state and keeping the impact on humans, nature and the environment as low as possible beyond the state boundaries.

ESG-Issuer rating reflects overall sustainability commitment – Best-in-class results in March 2022



- Regular ESG-evaluation by Moody’s ESG Solutions (formerly: V.E) reflects the overall commitment to sustainability
- Best-in-class results in category “Local/Regional authority” provides assurance to investors that also regular bonds finance activities with a high degree of sustainability orientation

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The Green Bond Framework follows the ICMA GBP 2021 structure and is EU-taxonomy-aligned

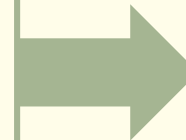
Section 1 | Introduction

Section 2 | Strategy and Rationale

- Environmental objectives of the State of Baden-Württemberg
- Existing environmental strategy reports
- Rationale for issuing Green Bonds

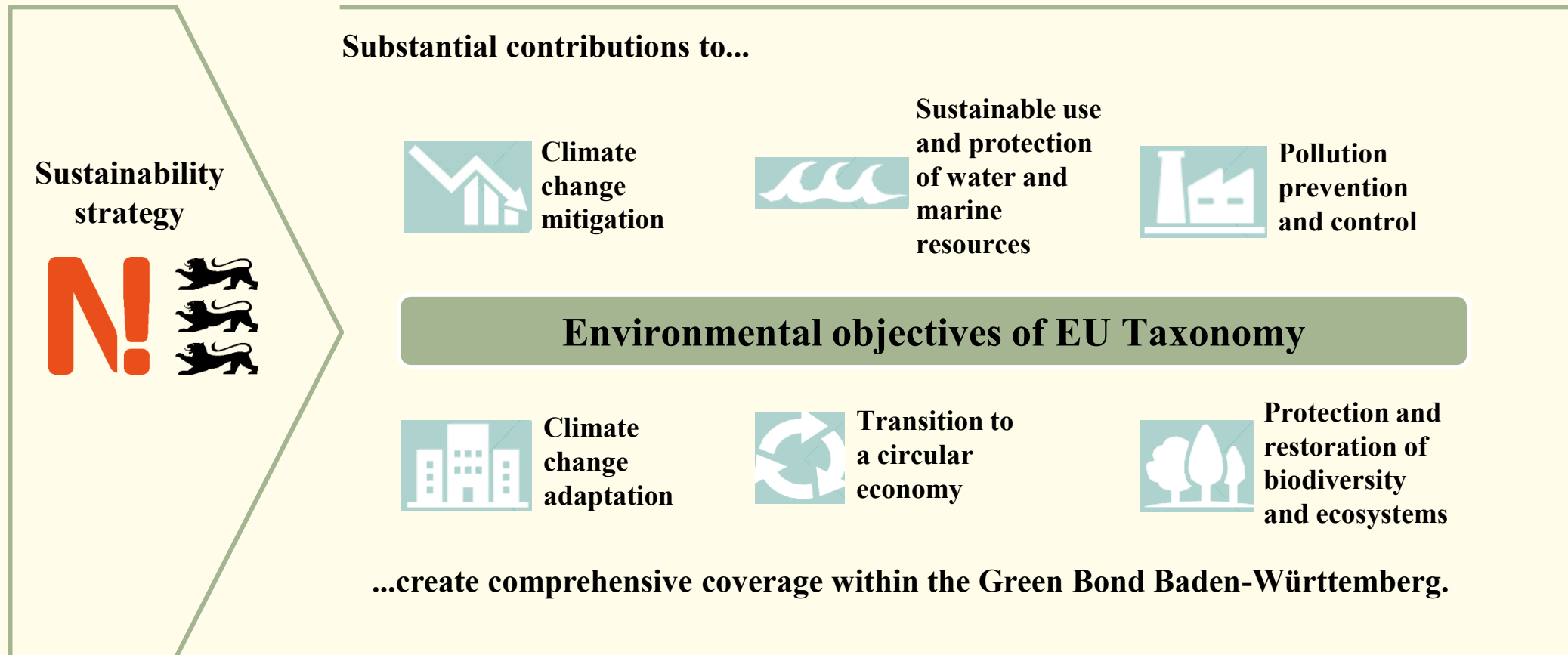
Section 3 | Basis and core components of the GB Framework

- Basis of the Framework
- Use of Proceeds
- Process for Project Evaluation and Selection
- Management of Proceeds
- Reporting
- External Review



**Green Bond Framework
of the State of
Baden-Württemberg**

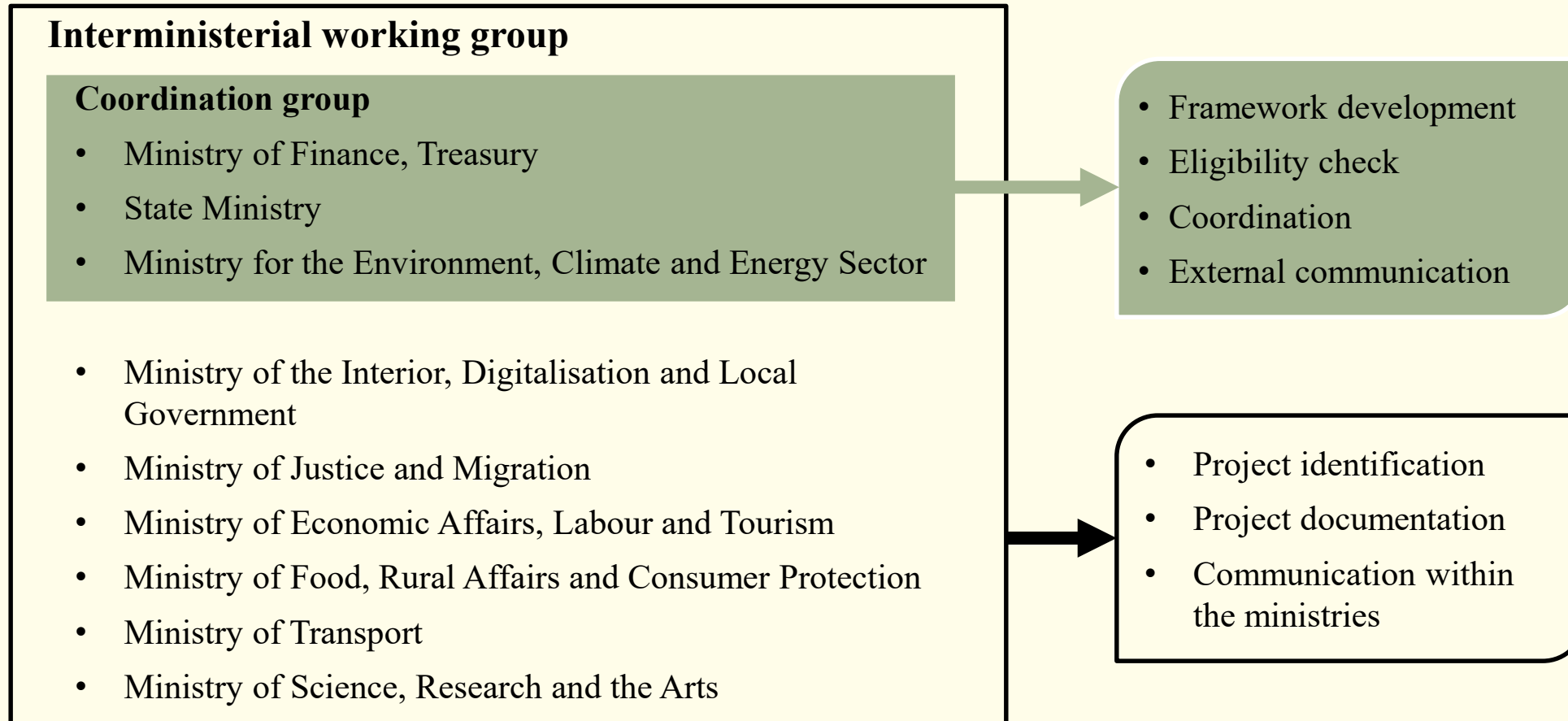
The Green Bond comprises projects with contributions to all six environmental objectives of the EU Taxonomy



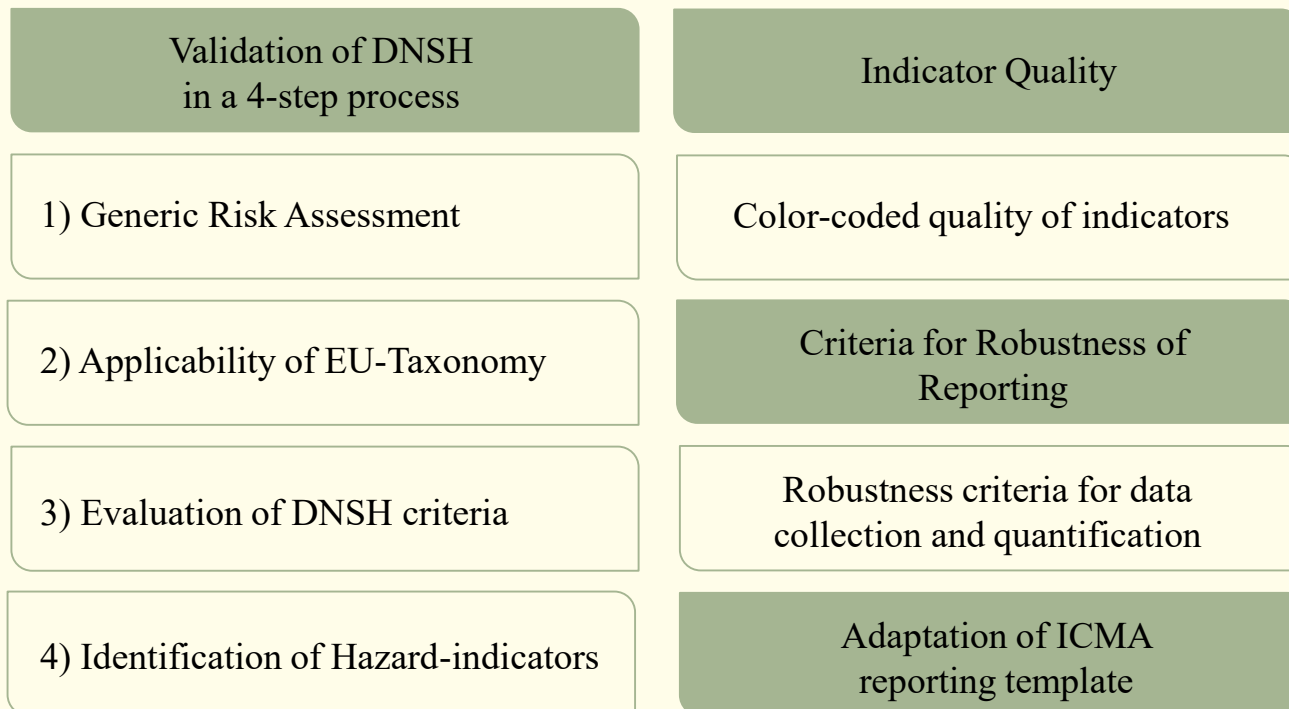
The State of Baden-Württemberg has defined eligibility criteria and requirements

<p>Budgetary/ systemic criteria</p>	<ul style="list-style-type: none"> ✓ Actual expenditure reference ✓ Project expenditure ✓ Net expenditure of the federal state ✓ Voluntary state activity 	<ul style="list-style-type: none"> → allocation of actual outflows of the year prior to issuance → + capital expenditure, public subsidies, operating expenditure increasing lifetime/ value of green asset - operating or personnel expenditure without value or lifetime increase for a green asset
<p>Impact criteria</p>	<ul style="list-style-type: none"> ✓ Substantial contribution to an environmental objective as specified in the EU Taxonomy ✓ Identification of the (primary) ICMA Green Bond Principles category ✓ Fulfilment of “do-no-significant-harm” (DNSH) criteria as specified in the EU Taxonomy ✓ Compliance with minimum social safeguards as specified in the EU Taxonomy ✓ At least a qualitative description of the expected impact, ideally a quantitative indicator 	
<p>Additional mapping criteria</p>	<ul style="list-style-type: none"> ✓ UN Sustainable Development Goals (SDG) ✓ Guiding principles of Baden-Württemberg’s sustainability strategy 	

Coordination group and interministerial working group verify eligibility of green projects



Impact Reporting: Wuppertal Institute has established stringent methodology for yearly portfolio evaluation

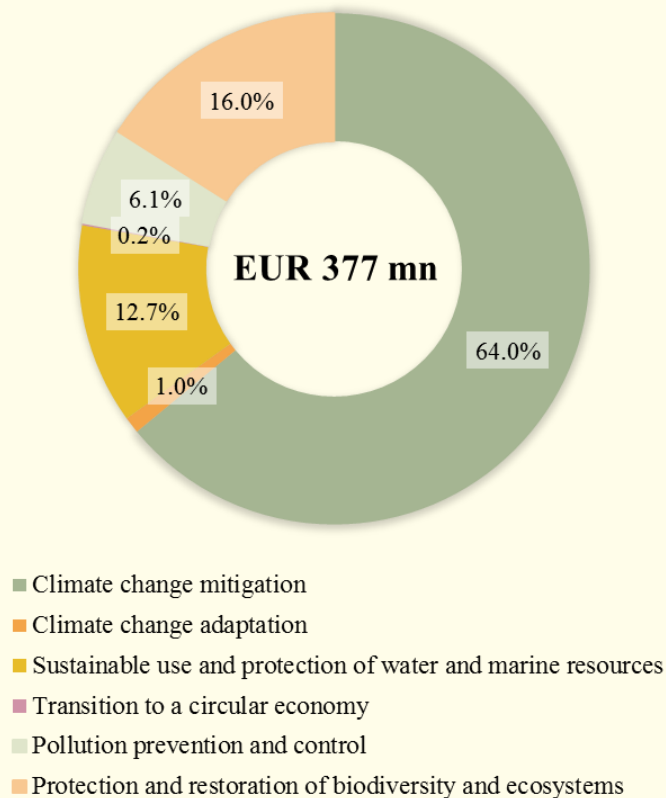


Full Impact Report is available at:

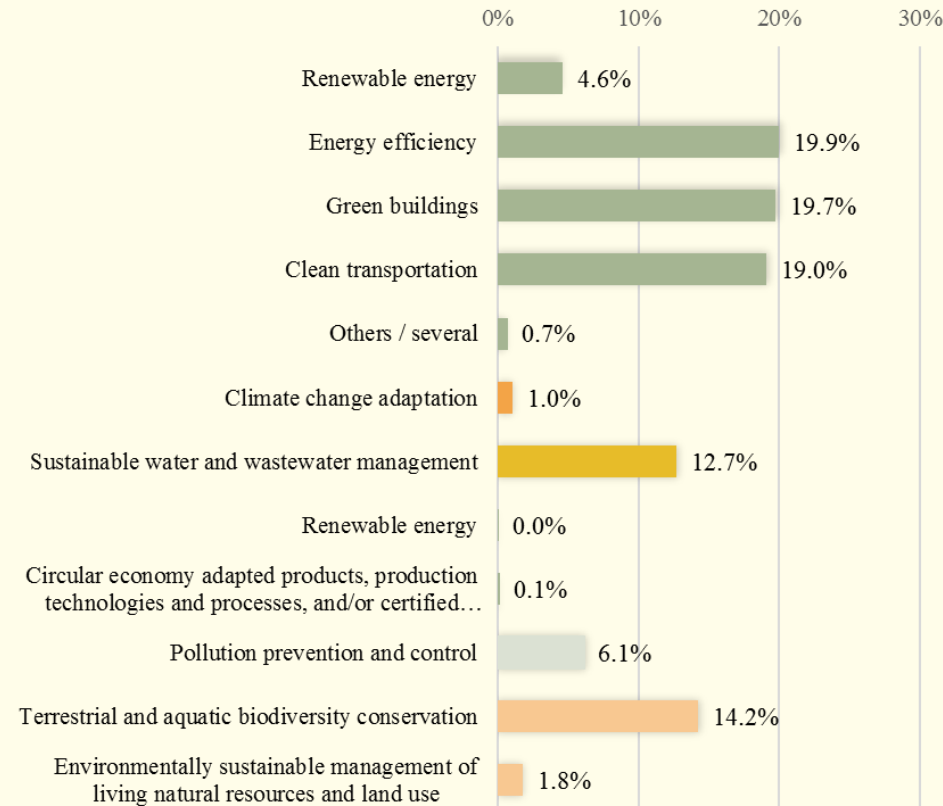
<https://fm.baden-wuerttemberg.de/de/haushalt-finanzen/haushalt/green-bond-bw/>

Green projects for second Green Bond – Highest shares for climate change mitigation and biodiversity

Eligible expenditure by EU Environmental Objective¹⁾
in % of total EUR mn



Eligible expenditure by ICMA Green Bond Principles category¹⁾
in % of total EUR mn

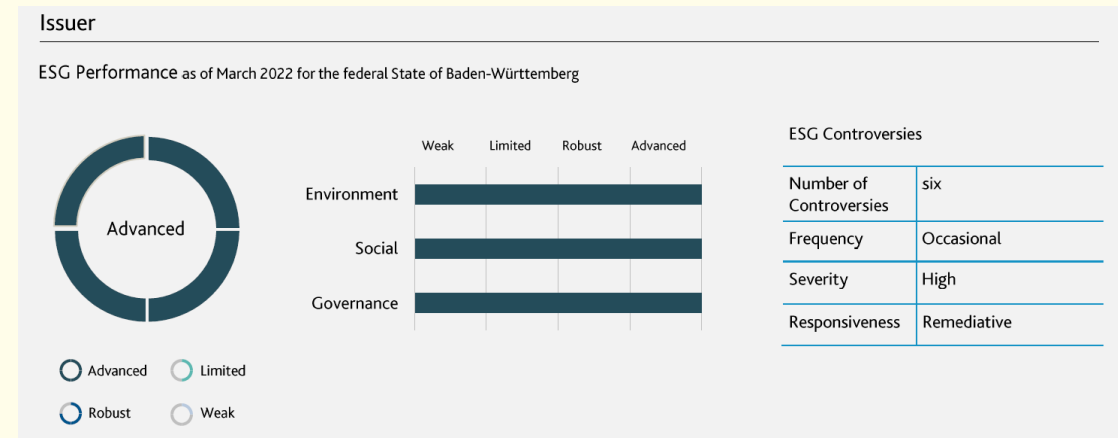
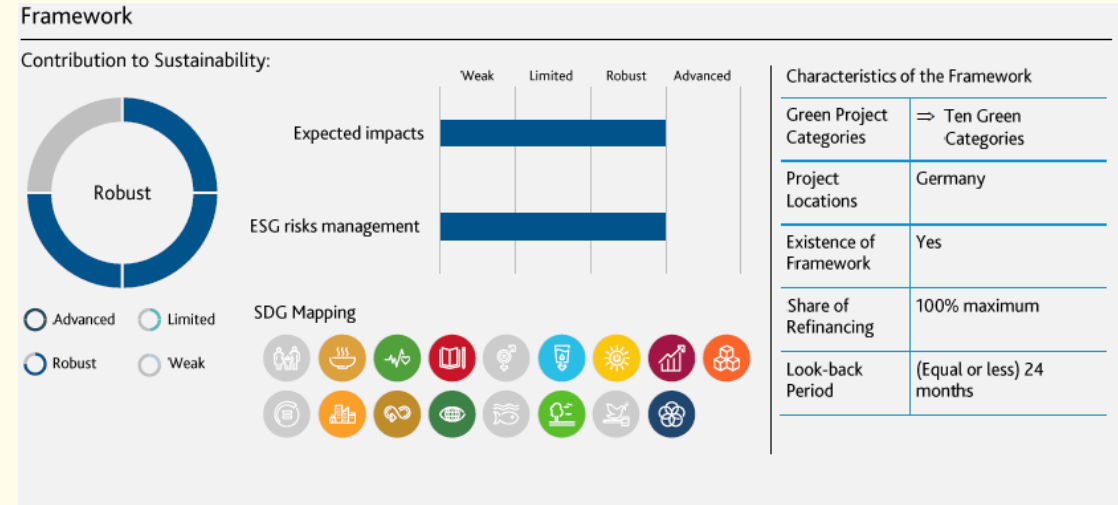


Second Party Opinion: Moody's ESG Solutions confirms alignment with standards and sustainability







„Moody's ESG Solutions was commissioned to provide an independent Second Party Opinion on the sustainability credentials and management of the Green Bonds to be issued by the federal State of Baden-Württemberg in compliance with the Green Bond Framework created to govern its issuances.“



„Moody's ESG Solutions considers that the Green Bond Framework and Eligible Expenditures Portfolio of the federal State of Baden-Württemberg are aligned with the four core components of the ICMA's Green Bond Principles 2021.“



Examples from second Green Bond selected to illustrate the scope of the total 58 eligible projects

Environmental objective	Green project examples 2021
Climate change mitigation 	1: HyFab BW - new building 2: State funding of broadband 3: Energy-efficient restructuring measures
Climate change adaptation 	4: Timber Construction Initiative BW
Sustainable use and protection of water and marine resources 	5: Water supply
Transition to a circular economy 	6: Phosphorus recovery from sewage sludge
Pollution prevention and control 	7: Low-emission bus transportation
Protection and restoration of biodiversity and ecosystems 	8: Research program Organic Farming

Green project example 1

HyFab BW – new building

Key Facts

- New research factory for fuel cells and hydrogen
- Actual expenditure 2021: EUR 6,550,000
- Ressort: Ministry of Economic Affairs, Labour and Tourism

Expected Impact

- Qualitative description: Development of solutions for fuel cells production on a large industrial scale
- Quantitative indicator: Number of projects with industry participation

EU-Taxonomy Environmental Objective

Climate Change Mitigation



ICMA Green Bond Principles Category

Renewable Energy

UN Sustainable Development Goals



Guiding Principle BW Sustainability Strategy

(I)... to implement the energy transition quickly, safely and affordable with the involvement of civil society.

Green project example 2

State funding of broadband

Key Facts

- Allocations for investments in municipalities for broadband infrastructure
- Actual expenditure 2021: EUR 68,352,681.27
- Ressort: Ministry of the Interior, Digitalisation and Local Government

Expected Impact

- Qualitative description: Broadband coverage enabling behavioral change and business models without transport/mobility needs; fibreoptics has significant energy consumption advantages compared to copper cable
- Quantitative indicator: Achieved average level of broadband coverage in BW (at least 50 Mbit/s); target 2025: 90%

EU-Taxonomy Environmental Objective

Climate change mitigation



ICMA Green Bond Principles Category

Energy efficiency

UN Sustainable Development Goals



Guiding Principle BW Sustainability Strategy

(IV)... to implement a future-oriented urban and spatial development.

Green project example 3

Energy-efficient restructuring measures

Key Facts

- Reduction of primary energy demand of at least 30% in already existing buildings
- Actual expenditure 2021: EUR 20,386,655.85
- Ressort: Ministry of Finance

Expected Impact

- Qualitative description: Significant CO2 emissions reduction compared to the unrefurbished building, via improvement of thermal insulation quality and increase in energy efficiency of systems engineering
- Quantitative indicator: Reduction of CO2-emissions

EU-Taxonomy Environmental Objective

Climate change mitigation



ICMA Green Bond Principles Category

Green Buildings

UN Sustainable Development Goals



Guiding Principle BW Sustainability Strategy

(I)... to implement the energy transition quickly, safely and affordable with the involvement of civil society.

Green project example 4

Timber construction Initiative BW

Key Facts

- The aim is to establish the state as a trendsetter for a sustainable and climate-friendly building culture with wood
- Actual expenditure 2021: EUR 2,152,908.79
- Ressort: Ministry of Food, Rural Affairs and Consumer Protection

Expected Impact

- Qualitative description: Reduction, substitution and compensation of high-emission construction projects, adaptation of the forest ecosystem to climate change
- Quantitative indicator: Increase in timber construction quota in percent for state buildings (20/21 at 41%)

EU-Taxonomy Environmental Objective

Climate change adaptation



ICMA Green Bond Principles Category

Climate change adaptation

UN Sustainable Development Goals



Guiding Principle BW Sustainability Strategy

(II)... to perceive climate protection as a cross-sectional task and minimize environmental-related threats due to climate change.

Green project example 5

Water supply

Key Facts

- Support for expenditure on investments that are directly necessary for the operation of the public water supply system
- Actual expenditure 2021: EUR 14,105,000
- Ressort: Ministry for the Environment, Climate and Energy Sector

Expected Impact

- Qualitative description: Reduction of impurities in drinking water; ensuring the security of supply
- Quantitative indicator: Number of supported water supply measures

EU-Taxonomy Environmental Objective

Sustainable use and protection of water and marine resources



ICMA Green Bond Principles Category

Sustainable water and wastewater management

UN Sustainable Development Goals



Guiding Principle BW Sustainability Strategy

(VI)... to protect and preserve the livelihood, the diverse nature and the unique cultural landscapes of the country and to keep the impact on humans, nature and the environment as low as possible beyond the borders of the country.

Green project example 6

Phosphorus recovery from sewage sludge

Key Facts

- Programme for building plants for phosphorus recovery from sewage sludge
- Actual expenditure 2021: EUR 378,385.65
- Ressort: Ministry for the Environment, Climate and Energy Sector

Expected Impact

- Qualitative description: Conserve natural resources by contributing to the state's self-sufficiency in phosphorus; reduce dependencies on imports of raw material from partly politically unstable regions of the world
- Quantitative indicator: Number of experimental plants and industrial-scale pilot plants

EU-Taxonomy Environmental Objective

Transition to a circular economy



ICMA Green Bond Principles Category

Circular economy adapted products, production technologies and processes, and/or certified eco-efficient products

UN Sustainable Development Goals



Guiding Principle BW Sustainability Strategy

(V)... optimize the use of resources and decouple economic growth from the consumption of natural raw materials.

Green project example 7

Low-emission bus transportation

Key Facts

- Grant for procurement of regular service busses and citizens' busses with low emission engines
- Actual expenditure 2021: EUR 12,100,000
- Ressort: Ministry of Transport

Expected Impact

- Qualitative description: Improvement of air pollution control, especially in environmental zones
- Quantitative indicator: Reduction of CO2-emission and traffic shift (additional passengers in buses with CO2 reduced emissions)

EU-Taxonomy Environmental Objective

Pollution prevention and control



ICMA Green Bond Principles Category

Pollution prevention and control

UN Sustainable Development Goals



Guiding Principle BW Sustainability Strategy

(III)... to promote and implement innovative, environmentally friendly and social mobility concepts.

Green project example 8

Research program Organic Farming

Key Facts

- In the research programme, organic farming is to be strengthened and research to be pooled
- Actual expenditure 2021: EUR 251,827.27
- Ressort: Ministry of Science, Research and the Arts

Expected Impact

- Qualitative description: Set of instruments for stimulating biodiversity; emerging new regional cooperations in organic farming
- Quantitative indicator: Publications, best-practice examples

EU-Taxonomy Environmental Objective

Protection and restoration of biodiversity and ecosystems



ICMA Green Bond Principles Category

Environmentally sustainable management of living natural resources and land use

UN Sustainable Development Goals



Guiding Principle BW Sustainability Strategy

(XI)... promote effective science and research to enable excellence and support innovation.

Project list for second Green Bond is available online

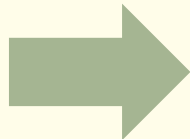
- To ensure complete transparency on eligible expenditures, the state of Baden-Württemberg publishes a list of all 58 projects financed through the second Green Bond
- The project list contains the following information for each individual project:

Project Name

EU-Taxonomy Environmental Objective

Actual Expenditure

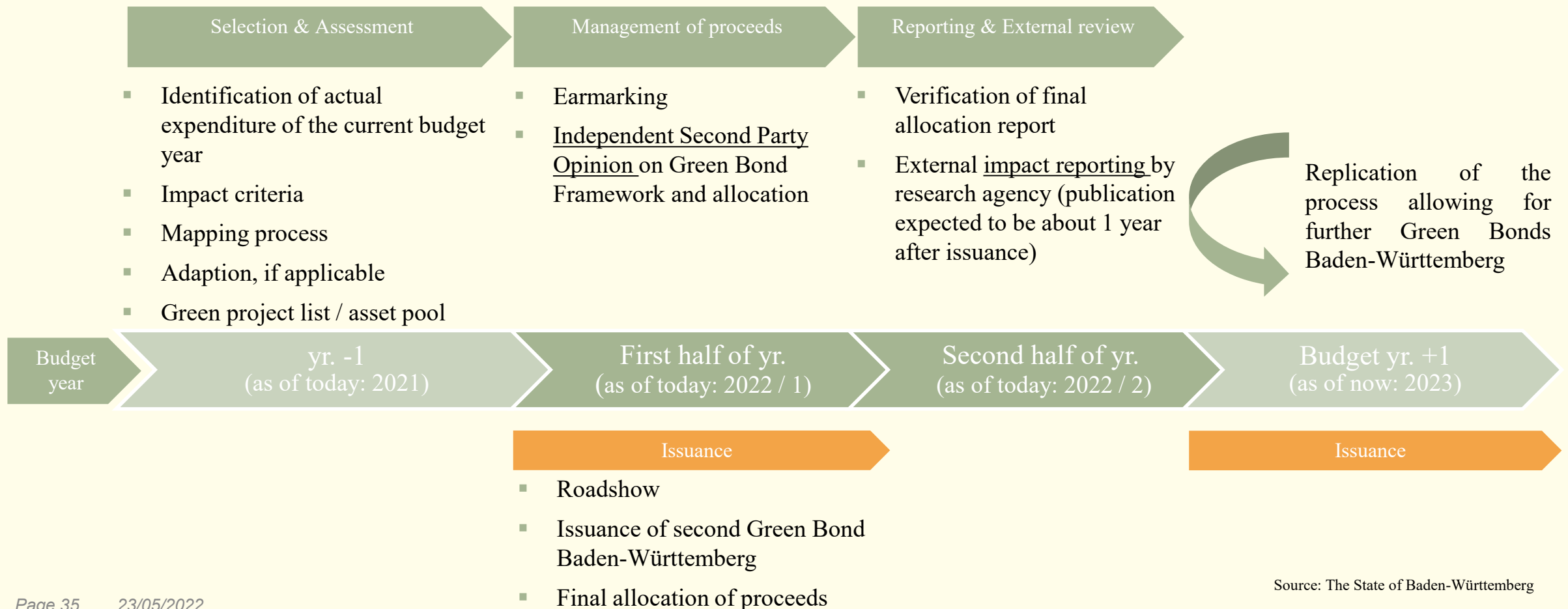
ICMA Green Bond Principles Category



Full project list is available at:

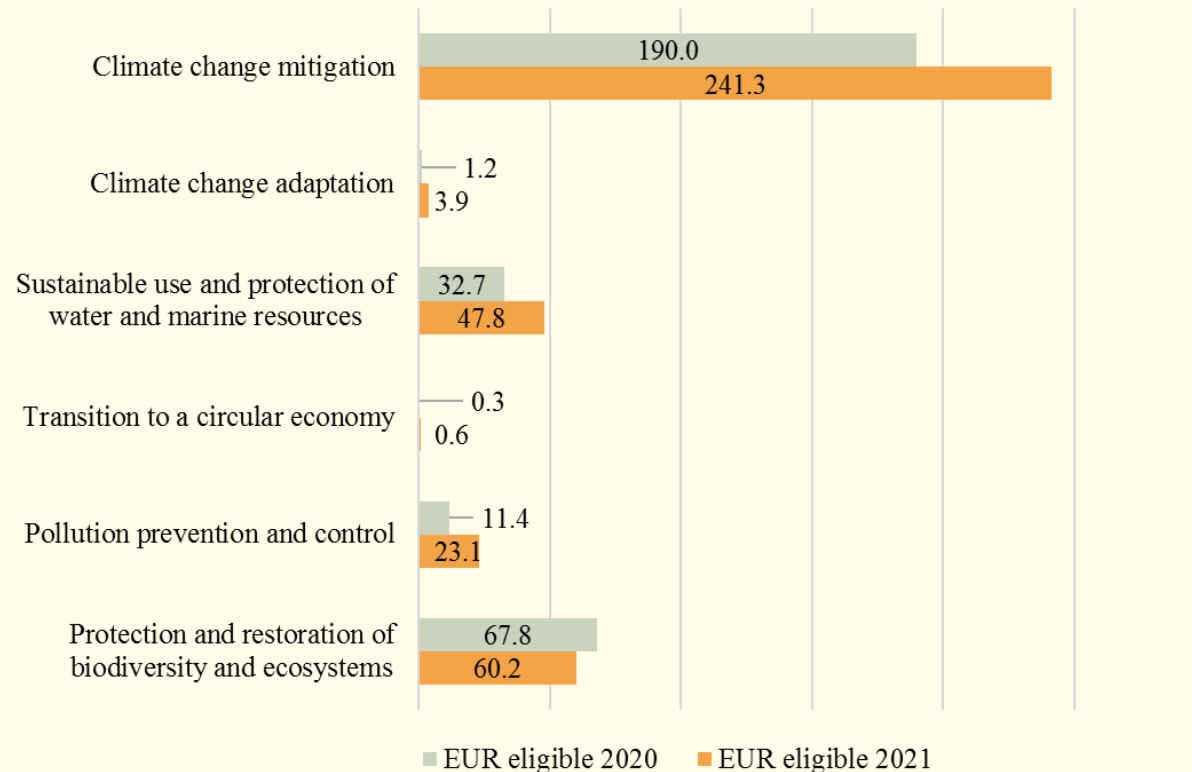
<https://fm.baden-wuerttemberg.de/de/haushalt-finanzen/haushalt/green-bond-bw/>

Annual Green Bond Baden-Württemberg issues will continue in the same pattern

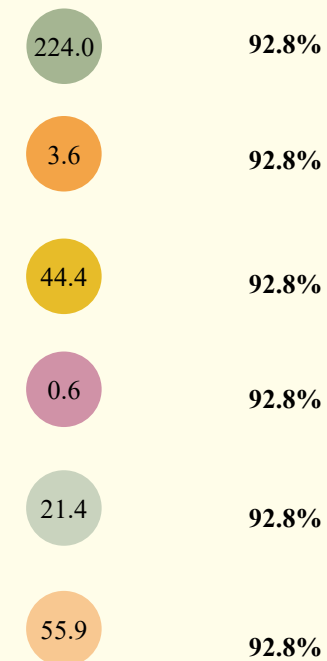


The second Green Bond will aim to raise EUR 350 million - allocation of 92.8% of eligible expenditure

Eligible expenditure¹⁾
2020 vs. 2021, EUR mn



Planned allocation¹⁾
2022, EUR mn / in %



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