

# State of Hesse

## Green Bond 2023 – Investor presentation



As of June 2023

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# Executive Summary

## State of Hesse

- GDP: EUR 323.4 bn
- S&P rating: A-1+ (short-term), AA+ (long-term), outlook stable\*

## Sustainability strategy

- Kick-off of the sustainability strategy in 2008
- In 2015, the State of Hesse decided to become climate neutral; in 2021, it was decided to move up the climate neutrality target from 2050 to 2045 (in line with the federal government's target)
- Adoption of a climate protection plan in March 2017 including 140 measures, of which 127 measures have already been completed or are in ongoing realization
- Principle of sustainability as a state objective embedded in the constitution in 2018
- To achieve the climate policy goals, the Climate Plan with 57 new measures was concluded in 2023
- Hessian Climate Act: Net greenhouse gas neutrality by 2045 and negative greenhouse gas emissions starting in 2050

## Green Bond Framework

- Focus on the standards of the ICMA Green Bond Principles (GBP) and sustainability targets of the United Nations (UN SDGs); Allocation of the project categories to EU environmental objectives as a first step towards EU taxonomy has already started
- External independent opinion from ISS ESG that the framework meets the ICMA GBPs and contributes significantly to the achievement of the UN SDGs
- Commitment to publish a Green Bond reporting (Allocation and Impact Report)

## Green Bond issuance

- Marketing and issuance of second Green Bond planned for June/July 2023
- The total amount of eligible green expenditures in the fiscal years 2021 and 2022 is EUR 1,107.69 mn
- Benchmark format (at least EUR 500 mn)
- Bond volume in an amount of up to EUR 1,000 mn



# **STATE OF HESSE: KEY DATA AND BUDGET**

# State of Hesse

## Key data at a glance

- **Area** 21,115 km<sup>2</sup>
- **Population** 6.4 million inhabitants
- **Largest city** Frankfurt am Main
- **State capital** Wiesbaden
- **Government** Coalition between CDU and BÜNDNIS 90/DIE GRÜNEN
- **State election** Autumn 2023
- **GDP** EUR 323.4 bn\*. The economic performance therefore ranks behind Denmark
- **GDP/inhabitant** With a GDP of EUR 50.8k per inhabitant, the State of Hesse ranks between Austria and Sweden in the EU comparison in 2022
- **Unemployment rate** 5.1 % (as of May 2023)



# State of Hesse

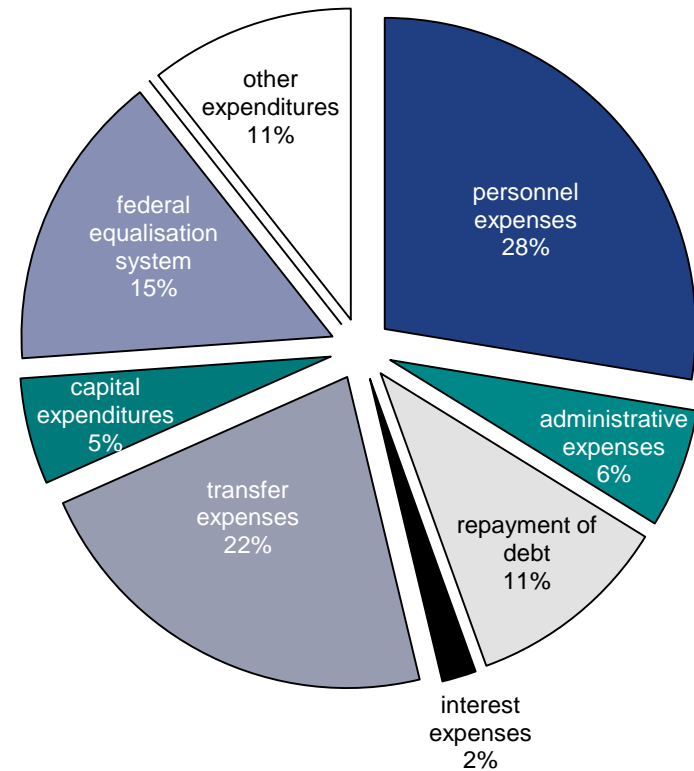
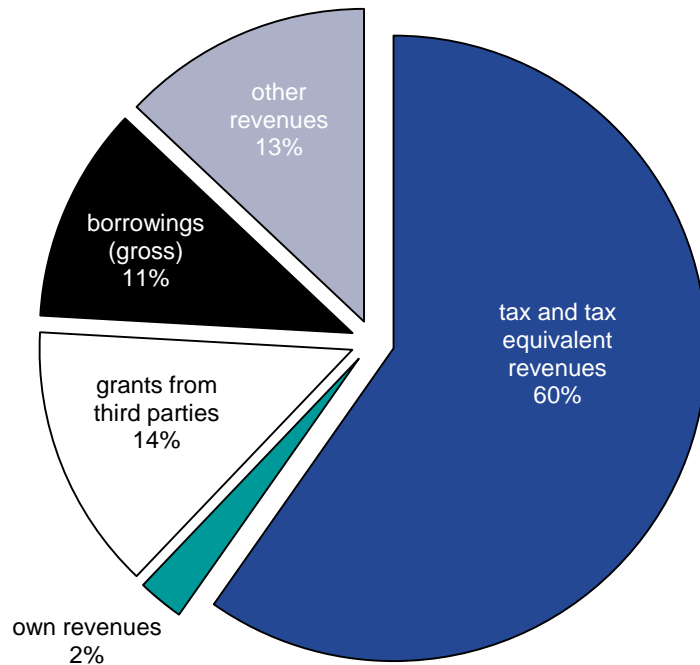
## Balanced economy

- With about 250 banks and insurance institutions, Frankfurt is the leading financial and supervisory center in continental Europe. The headquarters of the ECB, the Bundesbank, the Frankfurt Stock Exchange, EUREX and the Leibniz Institute for Financial Market Research SAFE are based in Frankfurt.
- Employment structure:
  - 79.1 % Service
  - 20.2 % Industry
  - 0.7 % Other sectors
- Hesse is a center of European information and communication technology; the largest internet hub worldwide DE-CIX is based in Frankfurt.
- Frankfurt has one of the most experienced start-up pools in the world and offers best access to international companies and customers. According to the startup Genome Report 2022, the Frankfurt/Rhine-Main region is one of the top 30 most dynamic startup regions for fintechs.\*
- Settlement of the key location of the "International Sustainability Standards Board" (ISSB) in Frankfurt, for the development of uniform and worldwide basic standards for sustainability reporting by companies.
- Satellite control centre of the European Space Agency (ESA) in Darmstadt.
- Hesse's industry is closely linked to the global economy and it is internationally well connected. Major foreign trade goods mainly stem from the chemical and pharmaceutical industry.
- One of the world's largest production facilities for the SARS-CoV-2 vaccine of BioNTech is located in the city of Marburg (Hesse).



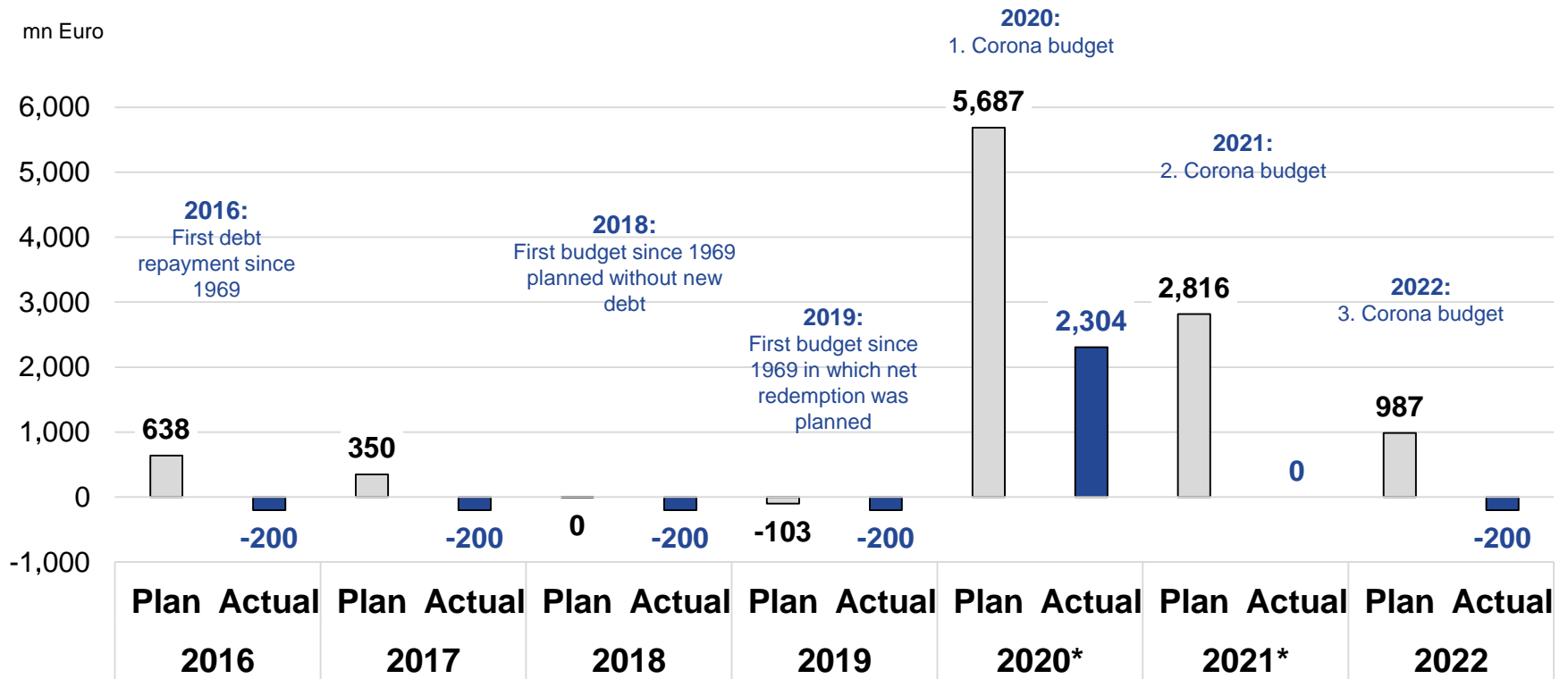
# State budget 2023

Income and expenses (as planned): EUR 44.4 bn



# Development of net borrowing

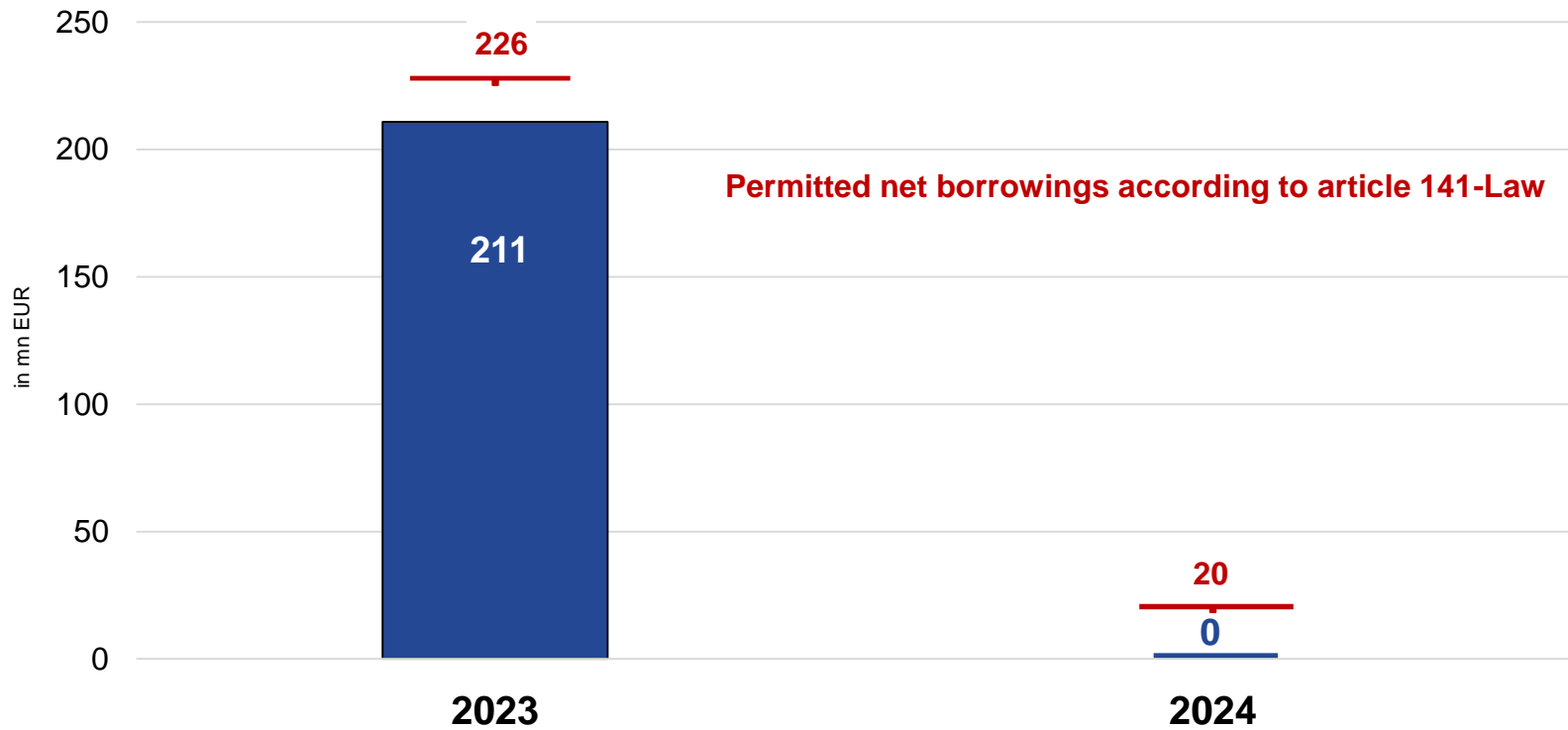
Plan carefully, perform better



\*incl. EUR 3,560 mn net borrowing in the special fund "Securing Hesse's Good Future" in 2020 and 2021. This debt was transferred to the state budget as of 01/01/2022.

# Budget 2023/24

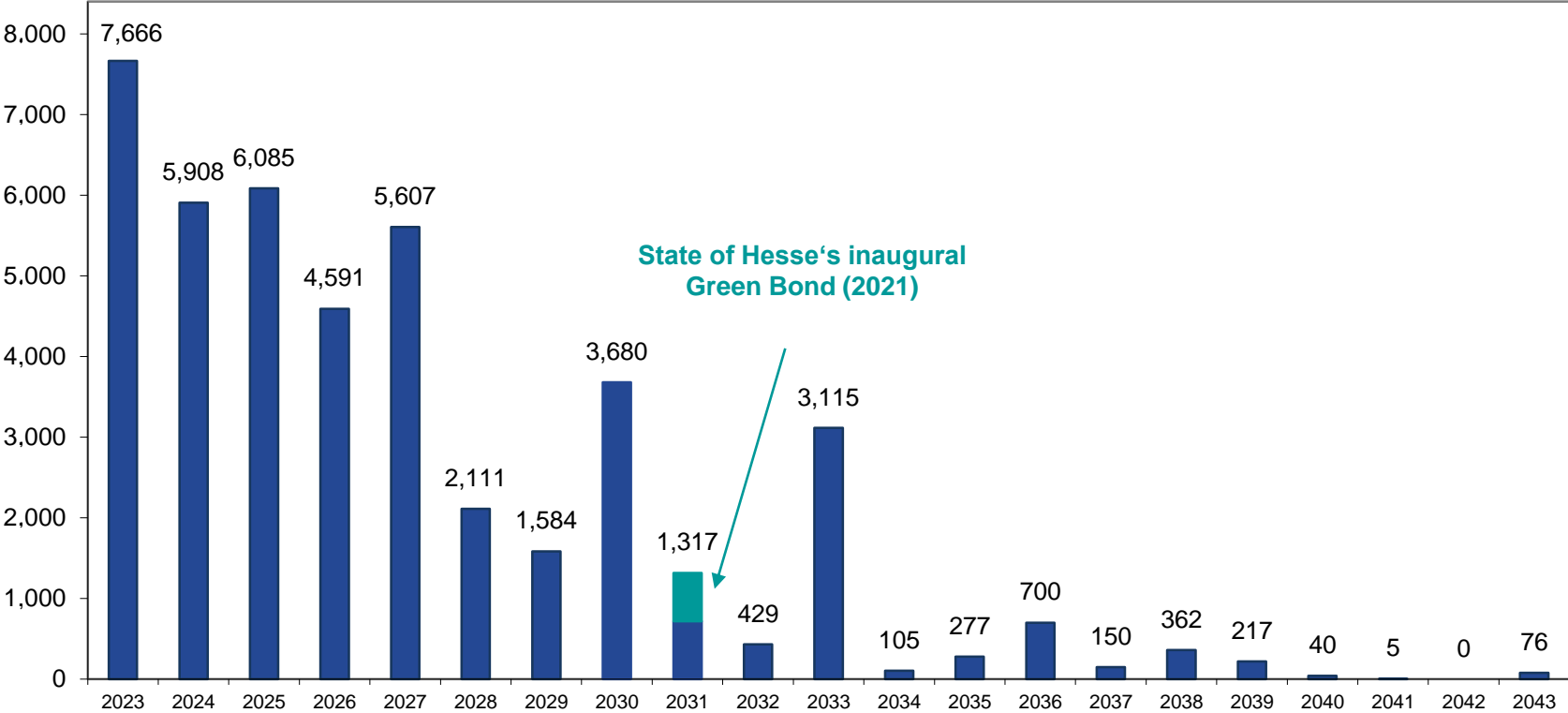
## Compliance with the regulatory limit



Data status: 2023 and 2024 adopted target of 26 January 2023.

# Balanced maturity profile of the State of Hesse

Redemptions in mn EUR



# Bonds issued by the State of Hesse

## Benefits for investors

Bonds issued by the State of Hesse represent a good investment opportunity in the segment of European sovereign issuers with regards to risk diversification.

- Attractive yield premium for investors compared to BUNDS, subject to maturity and market conditions
- Certification of high credit quality by Standard & Poor´s
  - Short-term rating: A-1+
  - Long-term rating: AA+, outlook stable, last confirmed as of 14 April 2023
- 0 % risk weighting
- ECB repo eligible assets
- Very stable development of asset-swap-spreads
- Gross borrowing 2023: EUR 4,953.2 mn



# **STATE OF HESSE'S SUSTAINABILITY STRATEGY**

# Sustainability as a state objective in the Hessian Constitution since 2018

## New article 26c:

Article 26c

**„The Federal State, the municipalities and local communities consider the principle of sustainability in their actions to protect the interests of future generations“**

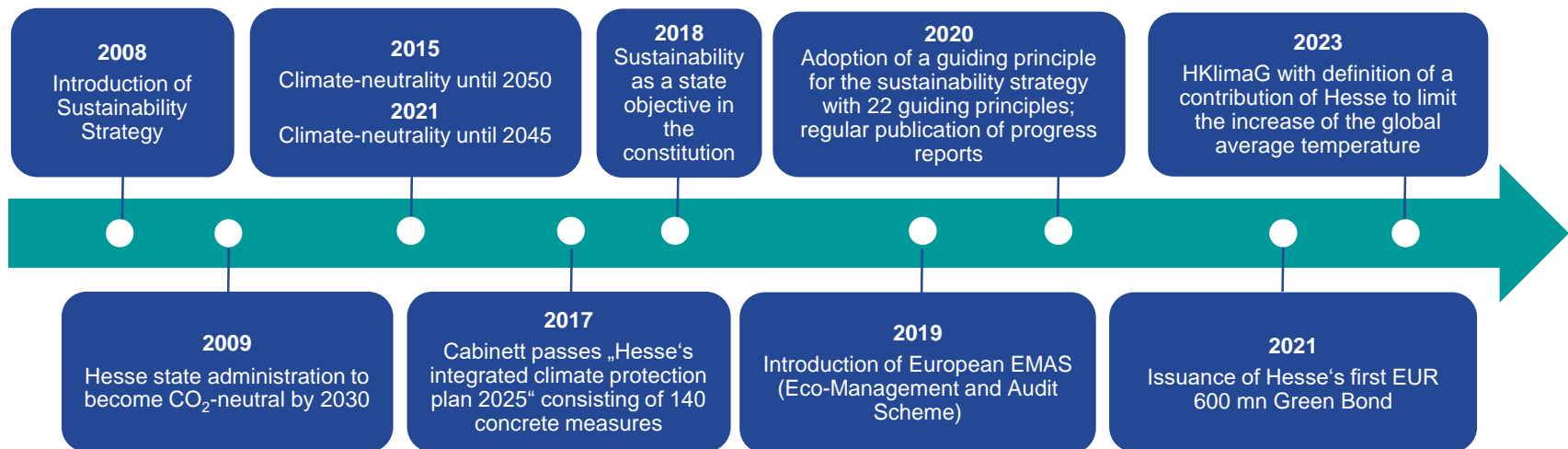
- Present generations should not live at the cost of future generations
- The result of the referendum in 2018 showed very high approval among eligible voters:

Yes-votes: 89.1 %

No-votes: 10.9 %

# State of Hesse's Sustainability Strategy

The State of Hesse bears responsibility for future generations and strives for a balance between economic growth and sustainable development. The Hessian sustainability strategy brings together people from politics, business, science, administration and society to find innovative solutions.

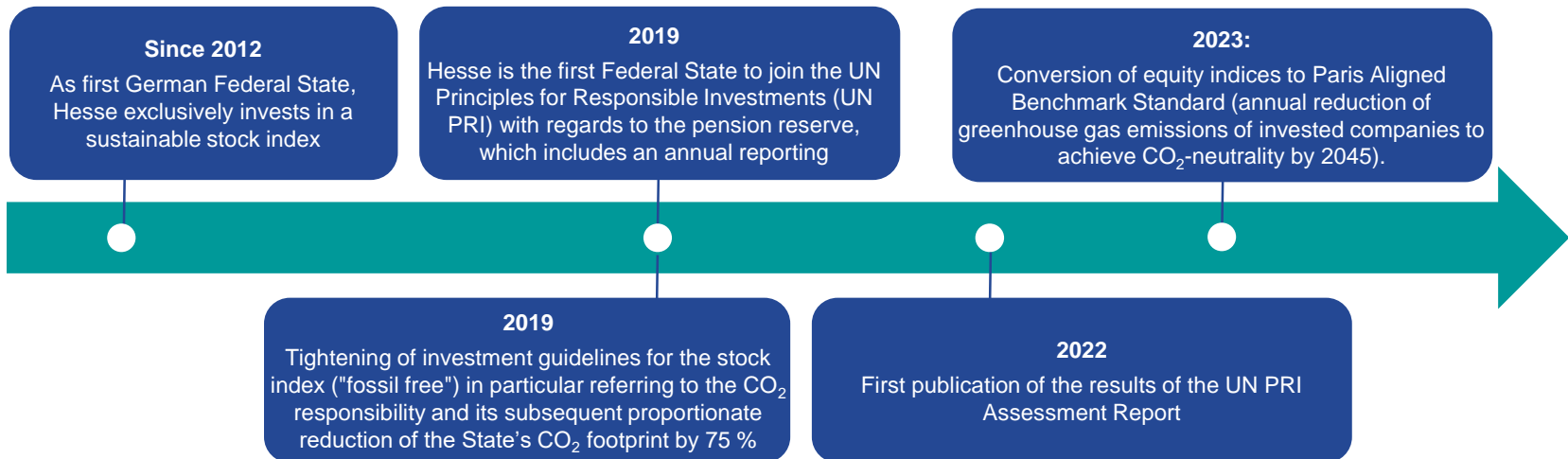


In addition to this overarching strategy, the state is working together with 367 municipalities in the alliance "Hessen aktiv: Die Klima-Kommunen". Climate protection can only succeed through action at all political levels, especially since the municipalities are the state's most important partner for local implementation.

# State of Hesse's Sustainability Strategy

## Pension reserve

Hesse also pursues a sustainable investment strategy in the investment of the State's pension reserve (around EUR 5 bn total assets).



# Green and Sustainable Finance Cluster Germany e.V.

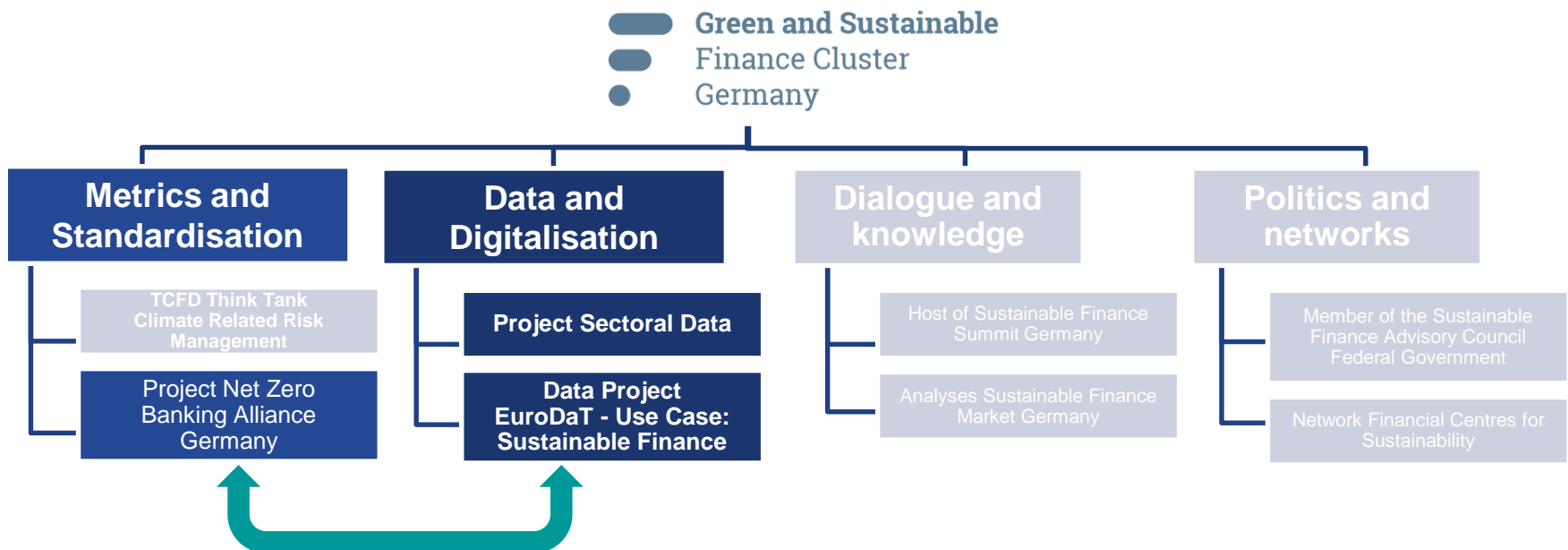
## Central Financial Market Initiative

The GSFCG aims to represent current activities of the German financial market in the area of sustainable financing and identifies possible innovation potentials. The GSFCG offers an incessant exchange platform sustainable financing issues by consulting all relevant stakeholders – economy, society, science, politics as well as authorities.

Data represents a central aspect sustainable finance. The Cluster aims to tackle issues and questions such as alternative investment strategies and requirements for digital data. In addition, connections between sustainability and digitalization of the financial sector are analyzed.

The State of Hesse is actively supporting the Cluster since 2017 to ensure that the key financial market in Europe is developed in line with global standards which are developing rapidly.

In order to stop climate change – the effects of which have long since been noticeable – enormous investments are needed. This is why the Hessian government is embracing the idea that private capital is also mobilised for the transformation. The Cluster aims to further promote this movement.



# Hessian Energy Act (HEG) amended as of 29 Nov 2022

In force since  
29 Nov 2022

Der Landtag hat das folgende Gesetz beschlossen:  
**Gesetz zur Änderung des Hessischen Energiegesetzes  
und der Hessischen Bauordnung**  
vom 22. November 2022

**Artikel 13**  
**Änderung des Hessischen Energiegesetzes**

Das Hessische Energiegesetz vom 21. November 2012 (GVBl. S. 644), geändert durch Gesetz vom 5. Oktober 2017 (GVBl. S. 284), wird wie folgt geändert:

1. Die Präambel wird aufgehoben.

2. § 1 wird wie folgt geändert:

a) Abs. 1 wird wie folgt geändert:

(1) Ziele dieses Gesetzes sind die Deckung des Energieverbrauchs von Strom und Wärme zu 100 Prozent aus erneuerbaren Energiequellen, die Anhebung der öffentlichen energetischen Sanierungsquote im Gebäudebestand auf mindestens 2,5 bis 3 Prozent sowie die Erreichung der Klimaziele des Klimaschutzgesetzes bis zum Jahr 2045. Ziele sind auch die Ausweitung von Vorzugsflächen zur Nutzung von Windenergie in Hesse der Fläche des Landes Hessen.

b) Abs. 2 wird wie folgt geändert:

(2) In den Regionalplänen sind angelegte Vorzugsflächen zur Nutzung der Windenergie im Sinne des § 3 Abs. 1 in Verbindung mit Anlage 1 des Windenergieflächenanforderungsgesetzes des Bundes vom 20. Juli 2022 (BfUG) i. S. V. d. F. für das Land Hessen festgelegte Flächenanforderungen sind die Nutzung von Photovoltaikanlagen in einer Größenordnung von 1 Prozent der Fläche des Landes Hessen.

c) Nach Abs. 4 werden Abs. 5 bis 7 angefügt:

(5) Die Errichtung und der Betrieb von Anlagen zur Erzeugung von Strom und Wärme aus erneuerbaren Energien sowie aus übertragbaren Wasserstoffen liegt im überwiegenden öffentlichen Interesse und dient der öffentlichen Sicherheit.

(6) Hessische Förderschritte oder Förderprogramme, die zum Teilweise der Beschaffenheit der Gebäudeteile entsprechen, werden durch eine neue Richtlinie des für Energieeffizienz zuständigen Ministeriums ersetzt. Diese fördert Maßnahmen, die die jeweils geltenden gesetzlichen energetischen Mindestanforderungen für Neu- und Erweiterungsbauten sowie die Sanierung von Beständen in einer mit den geltenden Werten übereinstimmenden, dabei weiteren Gebiete, die zusätzlich Fördermaßnahmen zur Erreichung der Ziele des Förderelementes honorieren.

(7) Die Errichtung der Ziele des Abs. 1 wird durch die Erreichung der Energieeffizienz, die Verbesserung der Energieerzeugung, die Förderung der Nutzung erneuerbarer Energien und soweit sinnvoll weiteren Energieeffizienter aus erneuerbaren Energien, die Förderung des Energieeffizienter bei Baumaßnahmen und Baustoffen, die Schaffung der gesellschaftlichen Akzeptanz für den Umbau bis zu einer Erneuerung aus erneuerbaren Energien und die Begrenzung der negativen Auswirkungen des Klimawandels gewährleistet werden. Landesregierungen können dabei weitere Vorkehrungen zu.

3. § 5 wird wie folgt geändert:

a) Abs. 1 wird wie folgt geändert:

a) Das Wort „auch Wärme-Kopplung“ wird durch die Wörter „auch thermische Kraft-Wärme-Kopplung, der Mischenerzeugung des Energieeffizienter bei Baumaßnahmen und Baustoffen“ ersetzt.

b) Folgender Satz wird angefügt:

„Bei der Entscheidung über die zu ergreifenden Maßnahmen werden auch die Auswirkungen der Maßnahmen auf die Qualität der Luft und die Erreichung der Energieeffizienz auf der Grundlage einer kommunalen fachlichen Prüfung energetisch bedingte Anforderungen sind bei der Umsetzung der Maßnahmen einzuhalten.“

4. In § 6 wird nach dem Wort „verwendend“ das Wort „und“ durch ein Komma ersetzt und werden nach dem Wort „Energieeffizienter“ die Wörter „und Energieeffizienter“ eingefügt.

5. § 6 Satz 2 wird wie folgt geändert:

„Gegenstand des Förderprogramms sind insbesondere innovative Verfahren zur nachhaltigen Energiebereitstellung auf Basis



Renewable energies are given a special status and, according to Section 1 (5) HEG, are "in the overriding public interest and serve public safety".

**Target:** 100 % electricity & heat consumption to come from renewable energy by 2045.



### Promotion and expansion of renewable energy:

Designation of utilization areas for wind energy and photovoltaics, as well as mandatory photovoltaic installations on new suitable parking lots and on state-owned buildings.



### Energy efficiency improvement in the building sector:

At least 2.5 to 3 percent annual energy refurbishment rate in existing buildings. More stringent energy requirements for state-owned buildings (*New construction: Efficiency House 40, refurbishment: Efficiency House 55*).



**Preparation of heat plans** by around 60 municipalities and cities in Hesse with 20,000 or more inhabitants. This is intended to make the heat supply and the associated infrastructures more efficient and climate-neutral in the long term and to secure the energy supply.



**Climate-neutral Hesse until 2045**

# Hesse's sustainability strategy

## Objectives and Indicators

The 13 target indicators of Hesse's sustainability strategy are based on the global Sustainable Development Goals adopted by the United Nations and are consistent with the indicators at federal level. The indicators refer to the target year 2030, unless otherwise stated.



### Ecological agriculture

Increase the share of area with ecological agriculture to 25 % of the total utilized agricultural area



### Nitrogen balance

Reduce the nitrogen surplus of the utilized agricultural area (with regards to the area balance) to 40 kg/ha (in relation to the 5-year rolling average)



### Adult obesity

Slow down the average increase of the proportion of the adult population with obesity, that was recorded between 1999 and 2017.



### Early school- and apprenticeship leavers

Limit the proportion of the 18 to under 25 year olds who do not attend school or higher education, who do not participate in any apprenticeship or further training and who do not have a secondary level II qualification (Sekundarabschluss II) to 10 % (as a proportion of the population of the same age)



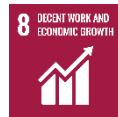
### Nitrate in groundwater

Reduction of the proportion of nitrate content measurements over 50mg/l at groundwater nitrate content measurement stations to 0 %



### Renewable energies

Increase the share of renewable energies in gross final energy consumption to 30 %



### Structural prohibition of new debt

Reduction of net borrowing below the threshold resulting from Article 141 of the Constitution of the State of Hesse



### Private and public expenditures on research and development

Increase the share of private and public expenditures on research and development in the gross domestic product to at least 3.5 %



### Broadband coverage

Area-wide expansion of fiber optic connecting networks, i.e. increase the share of households with a fiber optic connection (FTTB/H) to 95 % in relation to total households



### Final energy consumption of private households

Qualitative objective: "Reduce final energy consumption of private households continuously"



### Greenhouse gas emissions

Reduction of greenhouse gas emissions by 50 % compared to 1990 levels\*



### Biodiversity (and landscape quality)

Increase bird species numbers overall and by landscape type to an index of 100 by 2020, update of target index values planned for 2030



### Residential areas and traffic areas

Reduce increase in area coverage or residential and traffic area to less than 2.5 hectares per day (relative to the 4-year annual average)

\*With the Hessian Climate Act of 26 January 2023, the Hessian State Parliament adopted a greenhouse gas reduction of 65 % by 2030 compared to the reference year 1990.

# The Hessian greenhouse gas balance and CO<sub>2</sub>e emissions of the Hessian state administration in the year 2020

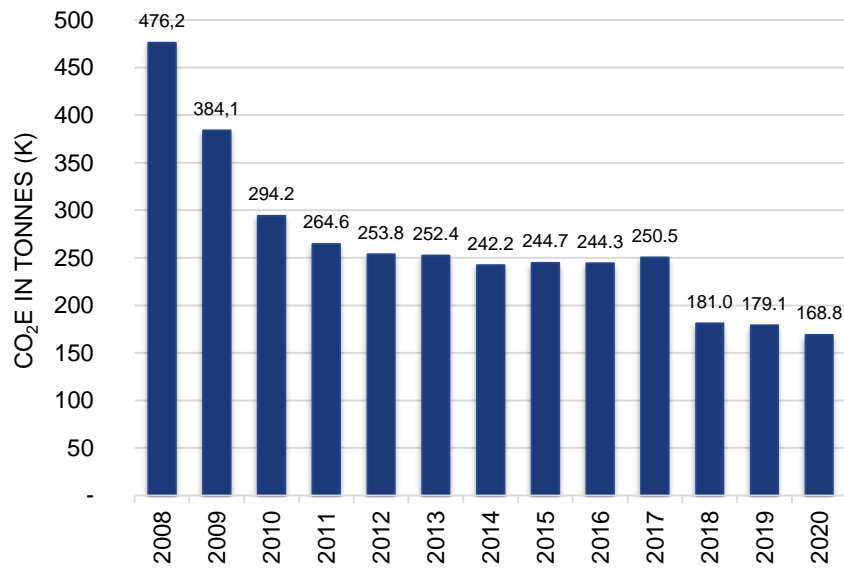
## Hesse (greenhouse gas balance)

- Already achieved (2020): Reduction of energy-related CO<sub>2</sub>-emissions by 2.5 m tonnes CO<sub>2</sub> (-7.4 %) compared to the previous year
- CO<sub>2</sub>-emissions were 10.5 m tonnes (24.8 %) lower than in the base year of 1990\*

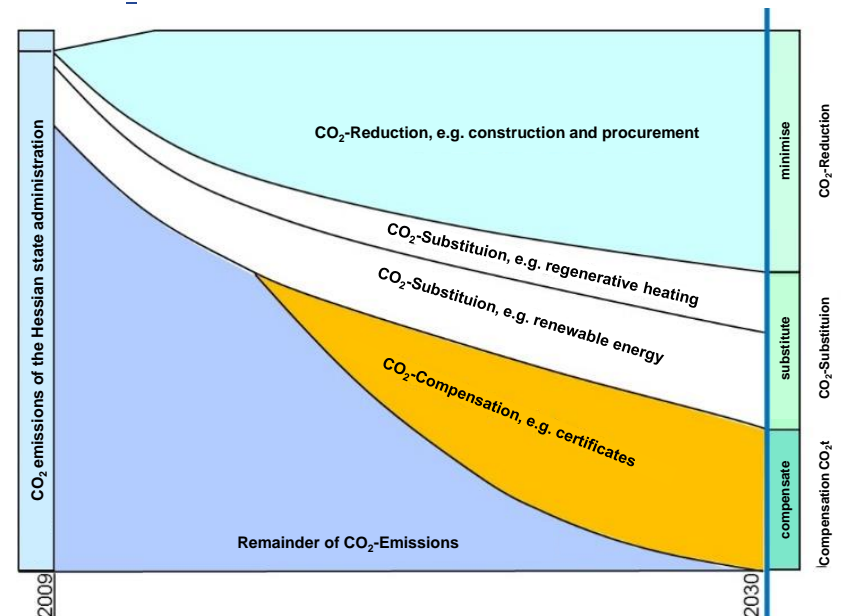
## Hessian state administration (Carbon footprint)

- The calculation of the CO<sub>2</sub>e-footprint covers a total of around 2,000 buildings, including state-owned properties, universities and rentals
- CO<sub>2</sub>-footprint: 168,834 t CO<sub>2</sub>-equivalent (2020)

## Hessian state administration: Development of CO<sub>2</sub>e-emissions



## Ziel: CO<sub>2</sub>-neutral state administration until 2030

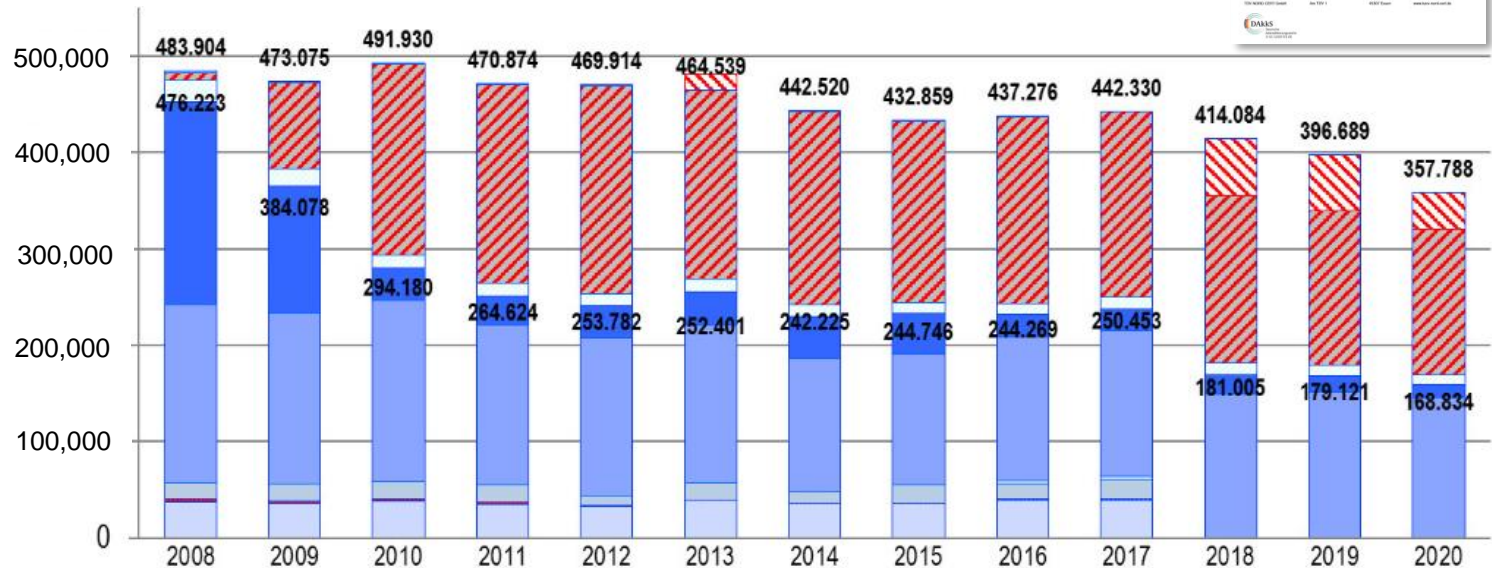


\* Hessian greenhouse gas balance, Balance year 2020, Page 16

# Development of CO<sub>2</sub>e-Emissions of the hessian state government by sources



Emissions  
[t CO<sub>2</sub>e /a]



Direct compensation						16,230	0	0	0	0	58,761	57,951	38,132
Reduction through eco-power	7,681	88,997	197,750	206,250	216,132	195,908	200,295	188,113	193,007	191,877	174,318	159,617	150,822
Uncertainty	22,621	18,244	13,974	12,570	12,055	13,571	11,506	11,625	11,430	11,714	11,989	11,289	9,856
Electricity	210,141	131,934	33,229	30,823	33,353	35,021	43,909	41,883	23,356	22,536	19,843	16,438	13,276
Heat	184,010	176,437	187,632	165,041	164,136	162,368	137,711	135,649	149,249	151,141	149,173	151,394	145,702
Private cars (compensated)	0	0	0	0	0	0	0	0	3,458	3,652	-5,525	-5,362	-3,222
Air travel (compensated)	17,331	17,720	18,191	18,261	9,093	18,238	12,128	18,337	15,698	20,305	-17,755	-18,447	-1,897
Rail travel (compensated)	2,600	1,970	2,154	1,782	1,739	402	434	413	420	362	-316	-261	-74
Vehicle fleet (compensated)	37,786	36,814	38,264	35,486	32,771	39,171	35,931	36,226	39,874	39,934	-35,165	-33,881	-32,939
Emissions w/o market instruments	483,904	473,075	491,930	470,874	469,914	464,539	442,520	432,859	437,276	442,330	414,084	396,689	357,788
Emissions with market instruments	479,223	384,078	294,180	264,624	253,782	252,401	242,225	244,746	244,269	250,453	181,005	179,121	168,834



# **GREEN BOND FRAMEWORK FOR HESSE'S SECOND GREEN BOND**

# Framework for the second Green Bond by the State of Hesse



For the issuance of its second Green Bond, the State of Hesse has published a new Green Bond Framework

The Framework complies with the ICMA Green Bond Principles 2021, an internationally renowned market standard

Hesse has mandated ISS ESG as an independent agency to provide a Second Party Opinion on the Framework prior to the issuance



## Reasons for the update of the Framework

First Green Bond of the State of Hesse	Second Green Bond of the State of Hesse
Refinancing of actual expenditures of 2018, 2019 and 2020	Refinancing of actual expenditures of 2021 and 2022
20 projects	30 projects <i>(of which 14 are new compared to the first Green Bond)</i>
Presentation of the current sustainability strategy (as of 2021)	Presentation of the current sustainability strategy (as of 2023)
	<p>Additions and specifications:</p> <ul style="list-style-type: none"> <li>Mapping the EU environmental objectives for each strategic priority of the focus area</li> <li>The interministerial working group will consider - if necessary - ESG controversies that could call into question the quality of the corresponding Green Bond expenditures.</li> <li>By complying with the EU legal system (e.g. the international labour standards of the International Labour Organization), the eligible green expenditures of the State of Hesse also meet requirements for minimum social standards.</li> </ul>

# Use of Proceeds (1/2)

- Eligible green expenditures are expenditures made by the State of Hesse which are considered as ecologically sustainable ("green") for the environment and climate
- Expenditures for armaments, oil and coal as fossil fuels, shale gas / fracking, nuclear energy (e.g. production, transport, storage and power generation) or tobacco were and are explicitly excluded from being eligible

## Eco-friendly public transport



### Expenditures to promote and improve sustainable and environmentally friendly transport systems

- Financing of public transport associations to ensure comprehensive passenger transport in Hesse
- Financing of specific public transport projects (e.g., station modernization, rail network expansion)
- Expenditures to promote more climate-friendly means of transport and its usage (e.g., job tickets, student tickets)
- Funding and promotion of municipal measures to improve infrastructure for pedestrian and bicycle traffic

## Measures concerning forests



### Expenditures promoting reforestation and restoration of forest damage in order to strengthen the climate resilience of Hessian forests

- Expenditures to finance the 12-point plan for the reforestation of Hessian forests and to restore forest damage
- Expenditures for environmental protection in the state forest (e.g., for the preservation of species and development of biotopes)
- Expenditures for nature conservation and landscape management in the national park

## CO<sub>2</sub>-neutral state administration / energy efficiency of public buildings



### Expenditures to reduce energy consumption and emissions from public buildings

- Expenditures to increase energy efficiency and to promote the use of renewable energy, as well as to promote energetic renovation of public buildings
- Investment program to implement the goals of the Hessian Energy Act (Hessisches Energiegesetz)

# Use of Proceeds (2/2)

## Organic farming and nature conservation



### Expenditures to promote organic farming land

- Expenditures to promote low-carbon farming and climate-friendly and organic practices
- Expenditures to finance advisory and information events for low-emission farming and horticultural businesses

## Climate Plan



### Expenditures to finance the Integrated Climate Protection Plan Hesse (ICPP 2025) and Climate Plan Hesse (2030) to achieve the climate targets and adapt to the consequences of climate change

- Projects for the development and ramp-up of electric drives in public transport
- Expenditures for the creation of concepts and strategies in the field of sustainability and biodiversity
- Projects to implement the local mobility strategy to strengthen pedestrian and bicycle traffic
- Expenditures for ecological flood protection and floodplain restoration
- Measures to preserve and further develop biotope network systems

## Sustainable (waste) water management



### Expenditures for the preservation and restoration of natural waters, improvement of the water quality and the development of flood protection

- Measures to preserve and restore natural waters
- Expenditures for the development of flood risk management plans and the construction of appropriate protection systems

## Further climate and environmental protection measures



### Other expenditures related to environmental and climate protection in Hesse

- Establishment of the State Energy Agency with the tasks of consulting, education and public relations on the topics of energy efficiency, renewable energies and climate protection
- Expenditures related to climate protection (e.g. implementation of climate protection projects, promotion of climate analyses and studies)
- Acquisition of electric vehicles at the Hessian police departments

# Selection process of projects as well as the refinancing concept of Green Bonds

## Allocation process

- The debt management office records all input on projects that were subject of the first Green Bond as well as on new projects with a particular scale of environmental expenditures received from the respective ministries and pre-screen past expenditures to determine their eligibility for the portfolio of eligible green expenditures in coordination with the interministerial working group.
- On that basis, the employees of the debt management office establish an initial list of potential eligible green expenditures.
- Only eligible green expenditures contributing towards environmental, or climate change mitigation objectives will be selected based on eligibility criteria for use of proceeds
- In addition, the eligible green expenditures should be assignable to one of the ICMA GBP categories and the funded projects should contribute to at least one of the UN SDGs and one of the EU Environmental Objectives.
- The management of the proceeds (including allocation and monitoring) is based on the state budget planning adhering to the principle of non-committed total coverage.

## Management of proceeds

- At least an equivalent amount of proceeds of this second Green Bond of the State of Hesse shall be earmarked to eligible green expenditures made in the budget years prior to the issuance (2021 and 2022), as shown in the appendix of the Framework. The amount allocated to green expenditures will exceed the amount of net proceeds.
- Hesse intends to fully allocate Green Bond proceeds within one year after issuance. Unallocated proceeds are managed according to the general liquidity guideline until full allocation.

## Refinancing concept

- Refinancing of eligible green expenditures made in budget years 2021 and 2022.
- Only funds from the general state budget without taking into account EU funds, federal funds or measures in connection with the dissolved special fund "Hessens gute Zukunft sichern" ("Securing Hesse's Good Future") from 2021.

# Transparent reporting

## Allocation report

- Green Bond Reporting will be published annually from the year following the issue (at the latest) until the bond proceeds have been fully allocated
- The allocation report contains details on the allocation of the issue proceeds to eligible green expenditures

## Impact report

- The impact report assesses measurable impacts of projects allocated to eligible green expenditures
- The impact report can be valid for several years and updated as needed. It contains the presentation of actual expenditures and key figures on a portfolio basis per expenditure category

### Indicative impact metrics

<b>Eco-friendly public transport</b>	<ul style="list-style-type: none"> <li>▪ Train-km performance in local rail passenger transport</li> <li>▪ Number of measures funded per year</li> <li>▪ Number of issued state tickets / tickets sold per year</li> </ul>
<b>Measures concerning forests</b>	<ul style="list-style-type: none"> <li>▪ Number of disbursed applications forest owners and timber marketing organizations (HVO) per year</li> <li>▪ Amount allocated in EUR per ha of operational area state forest</li> <li>▪ Amount allocated in EUR per ha national park area</li> </ul>
<b>CO<sub>2</sub>-neutral state administration / energy efficiency of public buildings</b>	<ul style="list-style-type: none"> <li>▪ CO<sub>2</sub> savings in tons per year</li> <li>▪ Number of measures funded per year</li> <li>▪ Capacity in planning in kWp</li> </ul>
<b>Organic farming and nature conservation</b>	<ul style="list-style-type: none"> <li>▪ Number of customer contacts per year</li> <li>▪ Hectares of diverse arable crops (approved area)</li> <li>▪ Hectares of extensive grassland management per year (commitment area)</li> </ul>
<b>Climate Plan</b>	<ul style="list-style-type: none"> <li>▪ Number of measures funded per year</li> </ul>
<b>Sustainable (waste) water management</b>	<ul style="list-style-type: none"> <li>▪ Number of measures funded per year</li> <li>▪ Length of developed waters in km</li> </ul>
<b>Further climate and environmental protection measures</b>	<ul style="list-style-type: none"> <li>▪ Number of consultations per year</li> <li>▪ Number of measures funded per year</li> <li>▪ Number of electric vehicles procured per year (CO<sub>2</sub> emission limit &lt; 50 g CO<sub>2</sub>/km according to the EU-wide WLTP measurement procedure)</li> </ul>

# Positive Second Party Opinion received by ISS ESG

The State of Hesse engaged ISS ESG as independent reviewer to provide a Second Party Opinion prior to the issuance of the second Green Bond:

- ISS ESG confirms that Hesse's Green Bond Framework is in line with ICMA Green Bond Principles 2021.
- The framework received a positive SPO from ISS ESG for the expected sustainability contribution as well as risk avoidance and mitigation.
- The focus areas defined for the use of proceeds positively contribute to the Sustainable Development Goals of the United Nations according to the SPO
- The use of proceeds categories are consistent with Hesse's sustainability strategy and represent material ESG topics for sovereign and sub-sovereign issuers.

**ISS CORPORATE SOLUTIONS** Powered by **ISS ESG** **THE STATE OF HESSE GREEN BOND**

**SECOND PARTY OPINION (SPO)**  
Green Bond Framework as of 28.04.2023

**ALIGNMENT WITH ICMA GREEN BOND PRINCIPLES**

1. Use of Proceeds	✓	<b>ALIGNED</b>
2. Process for Project Evaluation and Selection	✓	
3. Management of Proceeds	✓	
4. Reporting	✓	

**CONTRIBUTION TO THE UN SUSTAINABLE DEVELOPMENT GOALS**

Obstruction: No  
Net Impact: Contribution

Improve the operational impacts of the issuer operational impacts and mitigate potential negative externalities on:

- Climate Action
- Responsible Consumption and Production
- Life Below Water

**ASSET CATEGORIES ALIGNMENT WITH ISS ESG GREEN KPIs**

• Eco-friendly public transport	• Climate Plan	<b>POSITIVE</b>
• Measures concerning forests	• Sustainable (waste) water management	
• Green Buildings	• Further climate and environmental protection measures	
• Organic farming and nature conservation	• CO2-neutral state administration / energy efficiency of public buildings	

**SUSTAINABILITY PROFILE & STRATEGY**

The State of Hesse strives to approximate the UN SDGs and the Green Twin Bonds issued by the Republic of Germany. It recognizes the central goal of the 2015 Paris Climate Agreement as well as the European Green Deal, with which Europe is seeking to become climate neutral by 2050.

ISS ESG finds that the key sustainability objectives and the rationale for issuing green bonds are clearly described by the issuer. All the project categories financed are in line with the sustainability objectives of the issuer.

**Our SPOs provide Sustainability, Green and Social bond issuers with a credible and independent assessment of the sustainability quality of their bonds.**

Our evaluation is valid as long as there is no material change to the framework. The issuer's country rating used was retrieved on 08.03.2023. At the date of publication, we have not identified any severe controversies in which the issuer would be involved.

**ISS CORPORATE SOLUTIONS** Powered by **ISS ESG**

**LEADING SPO MARKET EXPERTISE** **EXPERIENCE ACROSS ISSUER TYPES AND ASSET CLASSES** **SUPPORTED BY WIDER ISS FUNCTIONS**

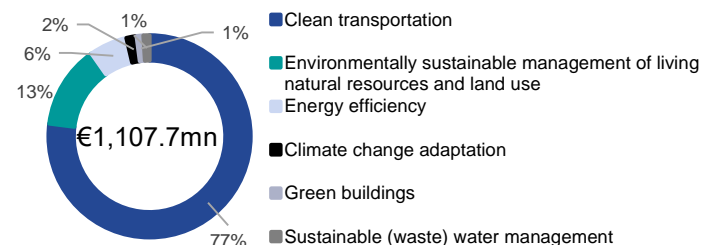


# **STATE OF HESSE'S SECOND GREEN BOND**

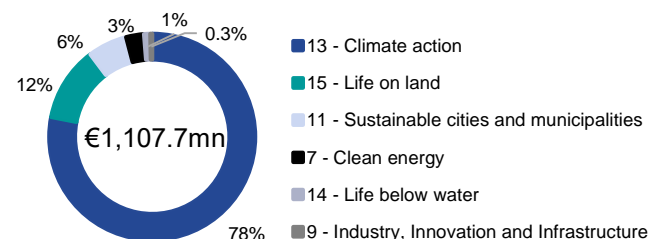
# Indicative allocation and breakdown by ICMA GBP, UN SDGs as well as EU Taxonomy Environment Objective

in mn EUR	2021	2022	Total
Description	Actual expenditures	Actual expenditures	Actual expenditures
Eco-friendly public transport	352.80	483.46	<b>836.26</b>
Measures concerning forests	60.28	55.22	<b>115.50</b>
CO <sub>2</sub> -neutral state administration / energy efficiency of public buildings	17.54	30.62	<b>48.16</b>
Organic farming and nature conservation	17.35	8.66	<b>26.01</b>
Climate Plan	8.64	13.66	<b>22.30</b>
Sustainable (waste) water management	8.91	9.60	<b>18.51</b>
Further climate and environmental protection measures	17.43	23.52	<b>40.95</b>
<b>Eligible green expenditures</b>	<b>482.95</b>	<b>624.74</b>	<b>1,107.69</b>
<b>Expected size for the second Green Bond issuance</b>			<b>1,000</b>

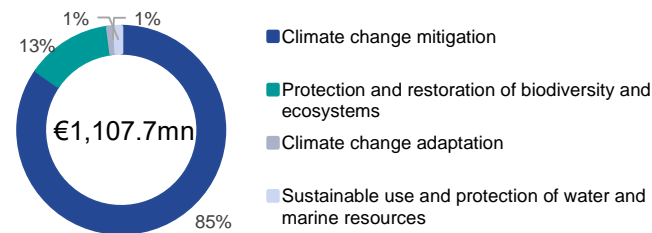
## Breakdown by ICMA GBP<sup>(1)</sup>



## Breakdown by UN SDGs<sup>(1)</sup>



## Breakdown by EU Taxonomy Environmental Objectives<sup>(1)</sup>



(1) Mapping based on primary category

## > Case Study – Eco-friendly public transport

# Funding of public transport

The state supports the transport associations in their efforts to meet the challenges of the future in local public transport with a quality offensive.

The range of public transport services and their further development in terms of quality and quantity are to be continuously strengthened and improved in line with the public service mission.

The funding provided by the state to promote local public transport services is intended to close the financing gap between fare revenues and the running costs of timetable operations, helping to provide an appropriate range of passenger services in Hesse.

The state provides its funding to the three transport associations *Rhein Main Verkehrsverbund (RMV)*, *Nordhessischer Verkehrsverbund (NVV)* and *Verkehrsverbund Rhein-Neckar (VRN)*.



**Expenditures in  
2021/2022**  
EUR 415.15 mn



**ICMA Green Bond Principles**  
Clean Transportation



**Reference to the budget**  
EP 17(7) Chapter 30 Product 22

## > Case Study – Measures concerning forests

# 12-Point Forest Plan

The 12-Point Forest Plan promotes reforestation and assures comprehensive support for the elimination of forest damage caused by storms, drought and pests. To mitigate climate change, Hesse has set itself the goal of intensifying the development of species-rich and climate-stable mixed forests.

At the same time, the aim is to build up the forests of tomorrow. The state provides financial support for this purpose. On the basis of the applicable funding guidelines, the Hesse-Forst state agency advises forest owners on financial support for the management of their private or communal forests.

The aim is, in particular, to safeguard the useful function as well as the contribution towards climate protection of forests. On the one hand, the ecological stability of the forest and the implementation of the requirements in Natura 2000 areas will be secured, and on the other hand, the production, working and sales conditions in forestry will be improved.



### ICMA Green Bond Principles

Environmentally sustainable management of living natural resources and land use



### Reference to the budget

EP 09 Chapter 22 Products 8, 10  
EP 09 Chapter 60 Products 1, 5, 6, 7



› Case Study – Further climate and environmental protection measures

# State Energy Agency

The State Energy Agency (Landesenergieagentur - LEA) Hesse assumes central tasks in the implementation of the energy transition and climate protection on behalf of the state government.

LEA offers information, initial consultations and accompanying advisory in the selection and implementation of measures for climate protection, energy efficiency, transport and local mobility, energy saving or the expansion of renewable energies in one's own environment.

LEA Hesse provides services to all Hessian citizens, social organizations, energy experts, municipalities and companies.



**ICMA Green Bond Principles**  
Energy efficiency



**EU Taxonomy**  
Climate change mitigation



**Reference to the budget**  
EP 07 chapter 05 Products 05  
EP 09 chapter 21 Products 02a

**Expenditures in  
2021/2022**

EUR 28.74 mn



## > Case Study – Energy efficient public buildings

# CO<sub>2</sub>-neutral state administration


### COME Universities

The energy efficiency program *COME Hochschulen* serves to sustainably increase energy efficiency and CO<sub>2</sub> savings in university buildings in Hesse. With the participation of eleven universities and colleges, around 40 building projects are to be implemented by 2025.


The target set in 2018 aims to achieve at least the new building standard according to the EnEV for overall energy refurbishments. In the building energy act (GEG 2020), the standards for energy refurbishments were tightened, but the state's requirements are still above the legal standard according to the GEG.

In the case of insulation values for the building envelope, the energy efficiency program requires that projects achieve an improvement over the legal requirements. For major renovations, Hesse's energy efficiency values are above the federal building code requirements for the Efficient Building (Bund) 55.



 **Reference to the budget**  
EP 18 Chapter 01 Product 13



 **ICMA Green Bond Principles**  
Energy efficiency

## > Case Study – Sustainable water management Renaturation

The implementation of the Water Framework Directive is in full swing in Hesse. By 2027, all water bodies should be in good ecological status within the framework of EU standards.

To further advance the achievement of the goal, Hesse has established the program "100 wild streams for Hesse". The program has selected 100 Hessian streams which will be recultivated.

Renaturation measures improve the structure of the water bodies and the ecological continuity. The restoration of Hesse's water bodies as natural habitats has a positive environmental contribution. It will also improve biodiversity in and around the water bodies.



**ICMA Green Bond Principles**

Sustainable (waste) water management

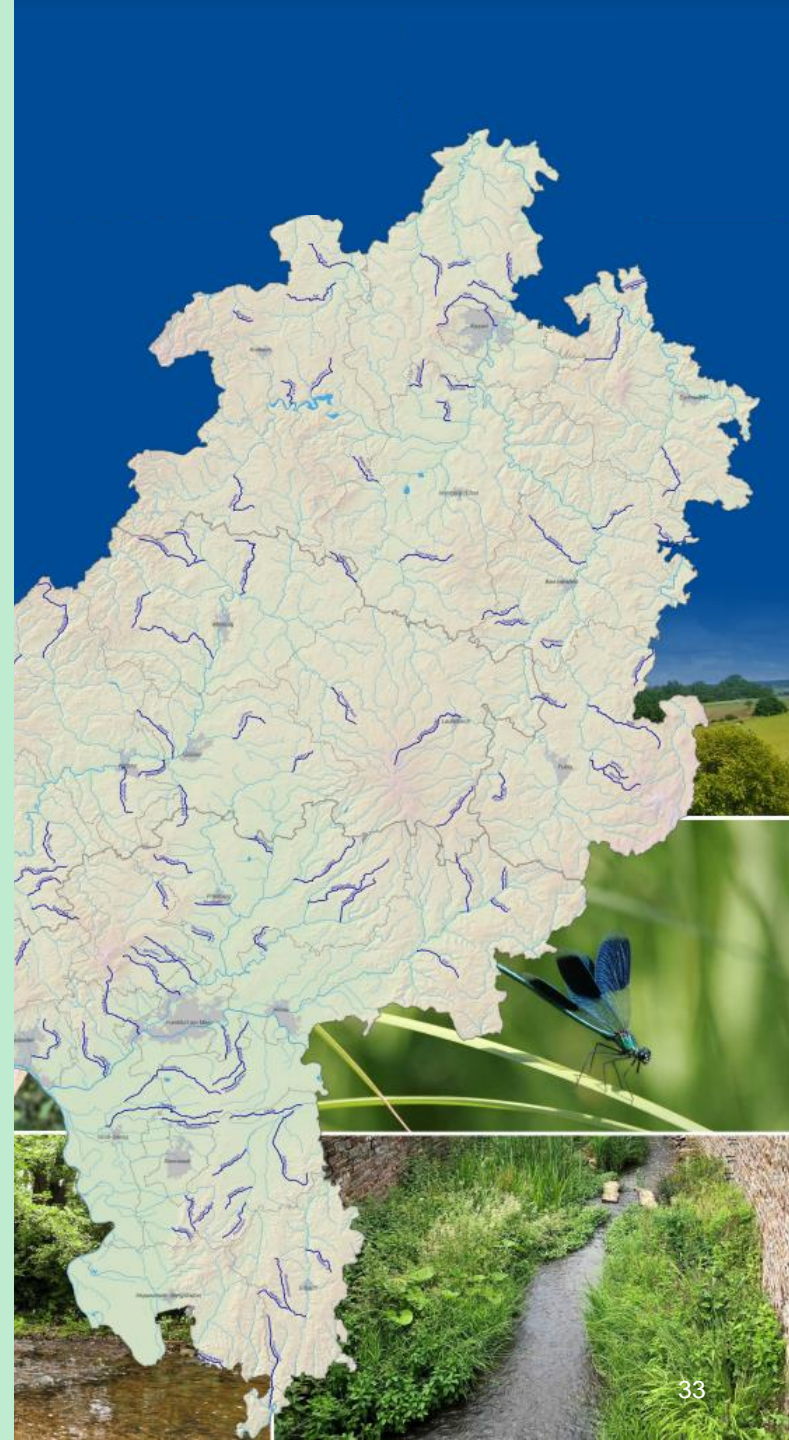
**Expenditures in  
2021/2022**

EUR 10.73 mn



**Reference to the budget**

EP 17(9) Chapter 41 Product 38



## > Case Study – Organic farming and nature conservation

# HALM Diverse arable crops

The HALM diverse arable crops program aims to support sustainable agriculture in Hesse. The project aims to contribute towards biodiversity, water, soil and climate protection as well as towards the preservation of the cultivated landscape.

The State of Hesse grants aid to farms that commit to a particularly sustainable form of land management.

The objective of the program HALM diverse arable crops is to promote the cultivation of five different main types of crops, including leguminous crops. The objective is to have a positive effect on soil fertility and water quality and to contribute to the conservation and improvement of biodiversity in the area.



### ICMA Green Bond Principles

Environmentally sustainable management of living natural resources and land use



### EU Taxonomy

Protection and restoration of biodiversity and ecosystems



### Reference to the budget

EP 09 Chapter 23 Product 23



Expenditures in  
2021/2022

EUR 8.74 mn

## › Case Study – Climate Plan

# Strengthen pedestrian and bicycle traffic

The State of Hesse considers the sustainable development of transportation as one of its fundamental responsibilities. Improving bicycle and pedestrian traffic is a key element of its mobility policy. The objective is to have climate-friendly and socially friendly mobility, accessible to all citizens.

A majority of the pedestrian and bicycle roads in Hesse are managed by the cities and municipalities. The State of Hesse provides technical and financial support to the municipalities to develop the pedestrian and bicycle infrastructure as well as numerous measures to strengthen local mobility.

Bicycle paths next to federal and state roads lie under the responsibility of the state and are planned, built and maintained by *Hesse Mobil*. For years, the State of Hesse has been working to provide good bicycle and pedestrian infrastructure to meet the objectives of its urban mobility strategy to strengthen and expand cycling traffic by improving the network of bicycle paths.

Expenditures in  
2021/2022

EUR 4.03 mn



Reference to the budget

EP 07 Chapter 15 Title 74



ICMA Green Bond Principles

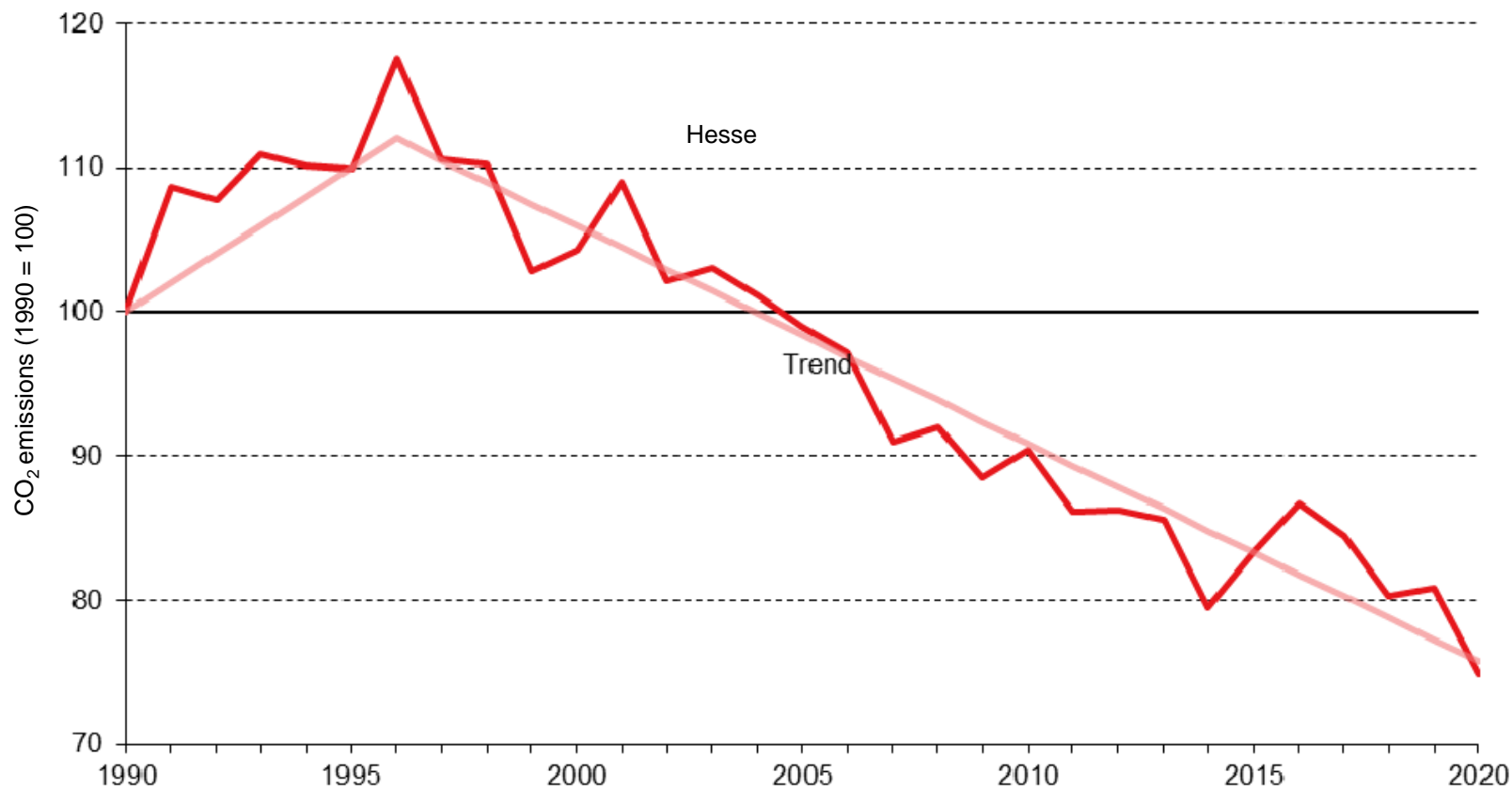
Clean transportation













# APPENDIX

# Development of energy-related CO<sub>2</sub>-emissions in Hesse between 1990 and 2020


















Source: Statistical Office of the Federal State of Hesse; UGRdL; Calculations of the Hessian Statistical Office; preliminary values for 2020; linear trend for the periods 1990-1996 and 1996-2020

# Project overview (1/2)

#	Project	Eligible expenditures in mn EUR	Impact indicator	Impact 2021	Impact 2022	UN SDG
1	Funding of public transport	415.15	Train-km performance in local rail passenger transport	59.6 mn	59.5 mn	
2	Funding of local public transport infrastructure	138.22	Number of measures funded per year	65	183	
3	Roll-out of the job ticket for all state employees	101.13	Number of issued state tickets per year	165,807	168.971	
4	Funding of measures according to the "Mobilitätsfördergesetz" in the area of public transport	96.64	Number of measures funded per year	68	180	
5	12-Point Forest Plan (Zukunft Wald)	83.18	Number of disbursed applications forest owners and timber marketing organizations (HVO) per year	993	1,563	
6	Ticket for all pupils in Hesse to use public transport	40.00	Number of tickets sold per year	415,000	410,000	
7	Funding of public transport	30.93	*	*	*	
8	State Energy Agency	28.74	Number of consultations per year	3.455	3.955	
9	CO <sub>2</sub> -neutral state administration, COME Universities	20.05	CO <sub>2</sub> savings in tons per year	118.13	397.12	
10	Funding of the state-owned enterprise for forest management ("Hessen Forst"): For environmental protection of the state forest (excl. national park area)	16.22	Amount allocated in EUR per ha operational area state forest	22.37	25.76	
11	Funding for nature conservation and landscape management - National park Kellerwald-Edersee	16.10	Amount allocated in EUR per ha national park area	985.64	1,135.22	
12	Expansion of public transport and cycling	14.18	Number of measures funded per year	74	114	
13	CO <sub>2</sub> -neutral state administration, energy efficiency building standards for new construction and renovation	12.00	CO <sub>2</sub> savings in tons per year	623.89	619.75	
14	Renaturation – Implementation of the European Water Policy for the protection of water resources and securing and improvement of water quality	10.73	Length of developed waters in km	38.00	71.41	
15	Education, advisory and technical information for agriculture and horticulture	8.83	Number of customer contacts per year	129,763	136,748	

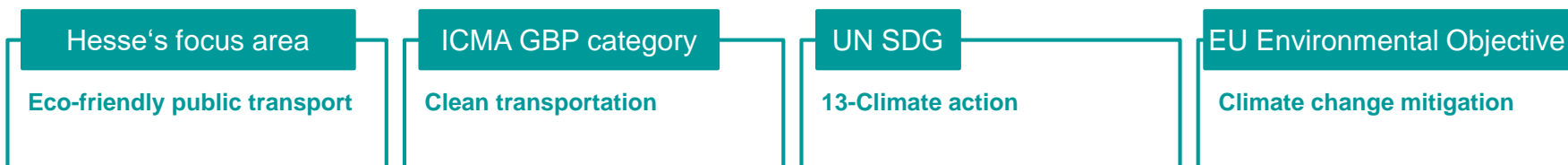
\*The expenditures of project 1 and project 7 will be used for the same rail network. The same impact figures 'train-km performance in local passenger rail transport' are shown for both projects 1 and 7 (not additive).

# Project overview (2/2)

#	Project	Eligible expenditures in mn EUR	Impact indicator	Impact 2021	Impact 2022	UN SDG
16	HALM Diverse arable crops	8.74	Hectares of diverse arable crops (approved area)	103,125	0	
17	HALM Extensification of grassland	8.44	Hectares of extensive grassland management per year (commitment area)	62,207	64,133	
18	Increasing energy efficiency and renewable energy use, energy rehabilitation of municipal buildings	8.41	Number of measures funded per year	34	44	
19	Municipal flood protection (reservoirs)	7.78	Number of measures funded per year	14	23	
20	Transition to climate-friendly transport	7.57	Number of measures funded per year	60	78	
21	Climate protection policy – investment measures	6.19	Number of measures funded per year	48	103	
22	Promoting the development of sustainable (and climate-neutral) universities	5.45	Number of measures funded per year	31	31	
23	Climate protection policy – non-investment measures	4.09	Number of measures funded per year	33	95	
24	Strengthen pedestrian and bicycle traffic	4.03	Number of measures funded per year	6	7	
25	CO <sub>2</sub> -neutral state administration, COME Mobility	3.34	CO <sub>2</sub> savings in tons per year	126	1,122	
26	Ecological flood prevention and wetland restoration	2.87	Number of measures funded per year	26	22	
27	CO <sub>2</sub> -neutral state administration, COME Solar	2.39	Capacity in planning in kWp	2,630	6,800	
28	Maintain and develop biotope network systems and avoid further landscape fragmentation	2.39	Number of measures funded per year	30	44	
29	CO <sub>2</sub> -neutral state administration	1.97	CO <sub>2</sub> savings in tons per year	160,000	160,000	
30	Acquisition of electric vehicles at the Hessian police departments	1.93	Number of (electric) vehicles procured per year (< 50 g CO <sub>2</sub> /km according to the EU-wide WLTP measurement procedure)	2	27	

# Project #1

## Funding of public transport



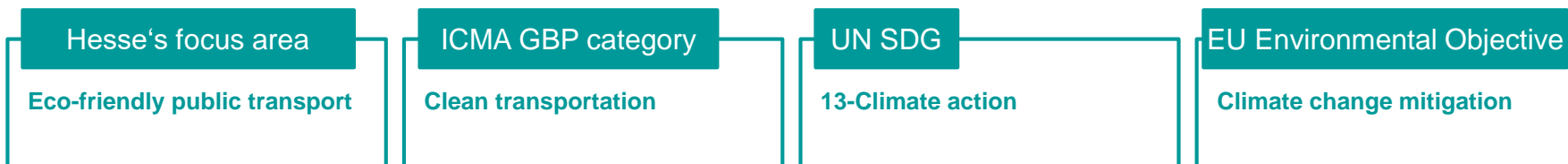
<b>Description</b>	<ul style="list-style-type: none"> <li>With the voluntary and additional state funds provided from the area of municipal financial equalization for the promotion of public transport services, an appropriate range of passenger services is to be ensured, continuously strengthened and improved in line with demand</li> <li>In 2021, about 88 % of the total expenditures of the three Hessian public transport associations were dedicated to rail and only about 12 % for other public transport services</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 147.58 mn</li> <li>2022: EUR 267.58 mn</li> </ul>
<b>Expected Impact</b>	<b>Train-km performance in local rail passenger transport</b> <ul style="list-style-type: none"> <li>2021: 59,557,764*</li> <li>2022: 59,528,000*</li> </ul>
<b>Reference to the budget</b>	EP 17 Chapter 30 Product 22



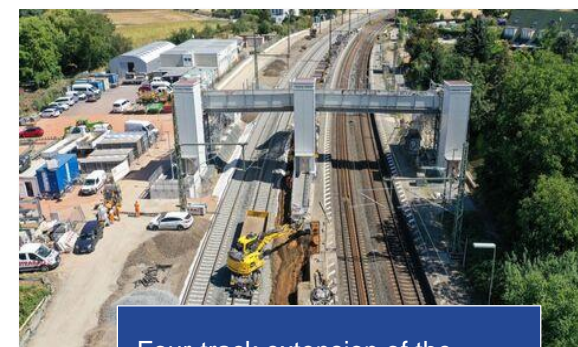
\*The expenditures of project 1 and project 7 will be used for the same rail network. The same impact figures 'train-km performance in local rail passenger transport' are shown for both projects 1 and 7 (not additive).

# Project #2

## Funding of local public transport infrastructure



<b>Description</b>	<ul style="list-style-type: none"> <li>▪ This state funding is provided for the co-financing of public transport projects as well as for measures under the municipal transport financing law<sup>(1)</sup> and local rail passenger transport, including S-Bahn</li> <li>▪ Measures include the construction of the line Regionaltangente West, the extension of the line U2, and the four-track extension of the line S6</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>▪ 2021: EUR 57.40 mn</li> <li>▪ 2022: EUR 80.82 mn</li> </ul>
<b>Expected Impact</b>	<b>Number of measures funded per year</b> <ul style="list-style-type: none"> <li>▪ 2021: 65</li> <li>▪ 2022: 183</li> </ul>
<b>Reference to the budget</b>	EP 17 Chapter 30 Product 24

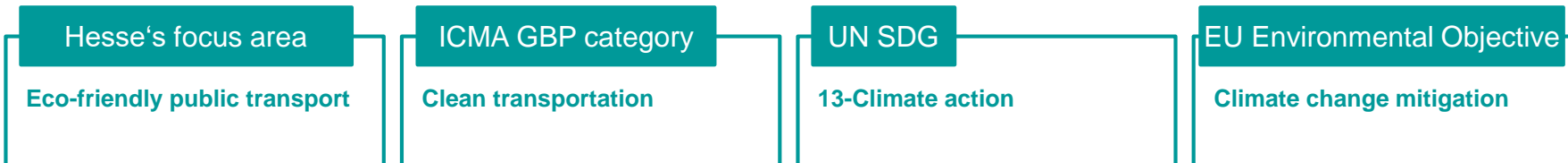


Four-track extension of the line S6 to Friedberg

(1) Gemeindeverkehrsfinanzierungsgesetz

# Project #3

## Roll-out of the job ticket for all state employees



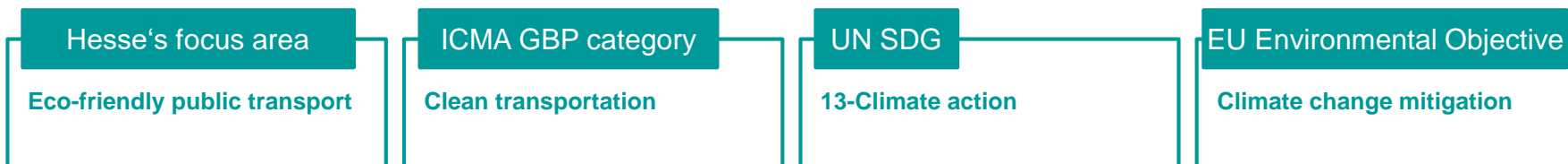
<b>Description</b>	<ul style="list-style-type: none"> <li>Roll out of a job ticket for public transport throughout Hesse offered to all state employees</li> <li>Providing the job ticket as incentive for state employees to reduce the usage of private transportation and contributing to sustainable environmental and climate protection at no cost for the state employees</li> <li>Enable change of mode to low-emission transportation</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 53.36 mn</li> <li>2022: EUR 47.77 mn</li> </ul>
<b>Expected impact*</b>	<p><b>Number of issued state tickets per year</b></p> <ul style="list-style-type: none"> <li>2021: 165,807</li> <li>2022: 168,971</li> </ul>
<b>Reference to the budget</b>	EP 03 Chapter 01 Title 429



\*According to a study from July 2019, CO<sub>2</sub> savings of 30,000 tons CO<sub>2</sub> per year were estimated. The report is currently being updated, as Corona pandemic and the option to work from home have changed the mobility behavior of employees. Until then, the number of state tickets issued will be used as impact indicator.

# Project #4

## Funding of measures according to the “Mobilitätsfördergesetz“ in the area of public transport

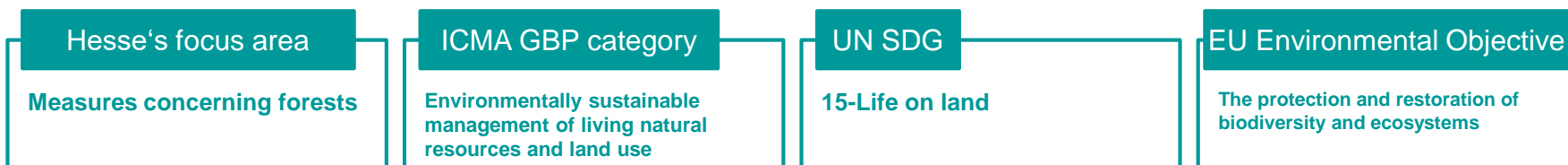


<b>Description</b>	<ul style="list-style-type: none"> <li>▪ Funding measures aiming to improve transportation and sustainable mobility in Hessian municipalities</li> <li>▪ The construction and extension of rail infrastructure and acceleration of public transport are selected key measures</li> <li>▪ Funding for municipal road construction are explicitly excluded for the allocation to the Green Bond</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>▪ 2021: EUR 50.12 mn</li> <li>▪ 2022: EUR 46.52 mn</li> </ul>
<b>Expected Impact</b>	<p><b>Number of measures funded per year</b></p> <ul style="list-style-type: none"> <li>▪ 2021: 68</li> <li>▪ 2022: 180</li> </ul>
<b>Reference to the budget</b>	EP 07 Chapter 15 Product 68

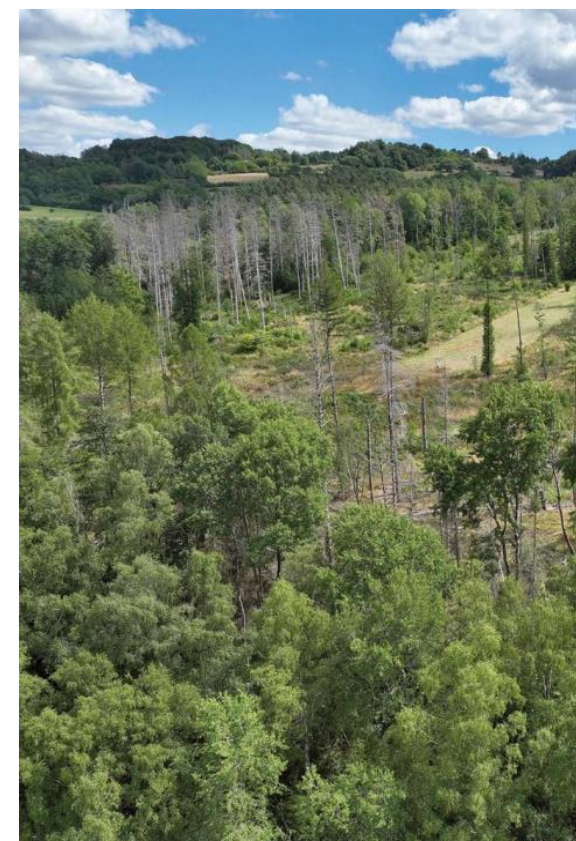


# Project #5

## 12-Point Forest Plan (Zukunft Wald)

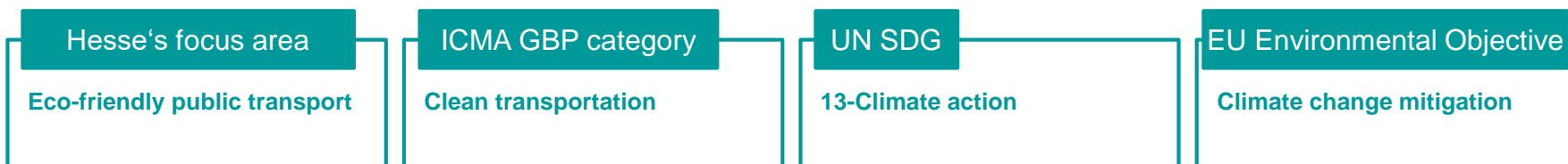


<b>Description</b>	<ul style="list-style-type: none"> <li>The 12-Point Forest Plan promotes reforestation and assures comprehensive support for the elimination of forest damage caused by storms, drought and pests</li> <li>To mitigate climate change, Hesse has set itself the goal of intensifying the establishment of species-rich and climate-stable mixed forests and building the forest of tomorrow</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 45.37 mn</li> <li>2022: EUR 37.81 mn</li> </ul>
<b>Expected Impact</b>	<p><b>Number of disbursed applications forest owners and timber marketing organizations per year</b></p> <ul style="list-style-type: none"> <li>2021: 993</li> <li>2022: 1,563</li> </ul>
<b>Reference to the budget</b>	<p>EP 09 Chapter 22 Products 8, 10</p> <p>EP 09 Chapter 60 Products 1, 5, 6, 7</p>

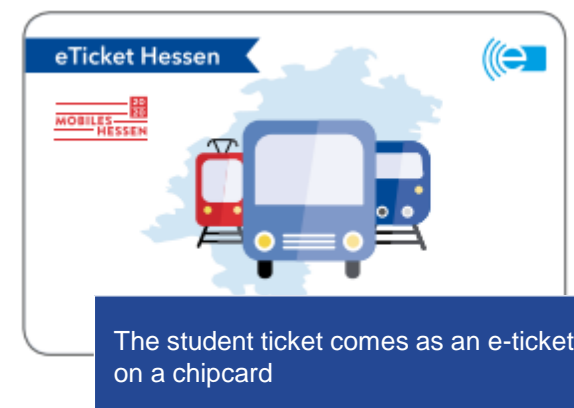


# Project #6

## Ticket for all pupils in Hesse to use public transport

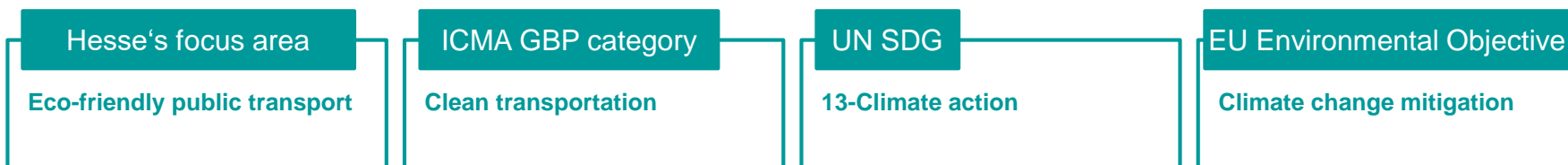


<b>Description</b>	<ul style="list-style-type: none"> <li>The hessian student ticket is a personal annual ticket for public transport available for all pupils and apprentices living, attending school or doing an apprenticeship in Hesse</li> <li>The measure aims to make the usage of local transport attractive to pupils and apprentices, reducing the usage of private transport while giving ability to travel flexibly in Hesse</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 20.00 mn</li> <li>2022: EUR 20.00 mn</li> </ul>
<b>Expected Impact</b>	<b>Number of tickets sold per year</b> <ul style="list-style-type: none"> <li>2021: 415,000</li> <li>2022: 410,000</li> </ul>
<b>Reference to the budget</b>	EP 07 Chapter 15 Product 69



# Project #7

## Funding of public transport



<b>Description</b>	<ul style="list-style-type: none"> <li>▪ The State of Hesse provides additional funding for the provision of public transport services, enabling passenger transportation, which is continuously strengthened and improved to meet the evolving demands</li> <li>▪ In 2021, about 88 % of the total expenditures of the three Hessian public transport associations were dedicated to rail and only about 12 % for other public transport services</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>▪ 2021: EUR 18.20 mn</li> <li>▪ 2022: EUR 12.73 mn</li> </ul>
<b>Expected Impact</b>	<p><i>The same impact figures 'Train-km performance in local rail passenger transport' are shown for projects 1 and 7 (not additive), as expenditures from both projects will be used for the same rail network.</i></p>
<b>Reference to the budget</b>	<p>EP 07 Chapter 15 Product 69</p>

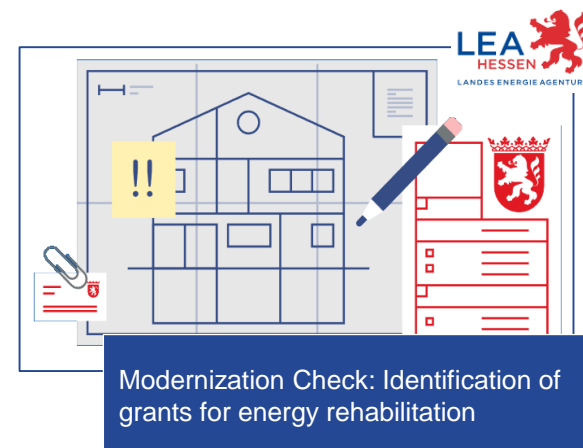


# Project #8

## State Energy Agency



<p><b>Description</b></p>	<ul style="list-style-type: none"> <li>▪ The LandesEnergieAgentur (LEA) Hesse assumes central tasks in the implementation of the energy transition and climate protection on behalf of the state government</li> <li>▪ The LEA offers information, initial consultations and accompanying support in the selection and implementation of measures for climate protection, energy efficiency, transport and local mobility, energy saving or the expansion of renewable energies in one's own environment.</li> </ul>
<p><b>Expenditures</b></p>	<ul style="list-style-type: none"> <li>▪ 2021: EUR 13.93 mn</li> <li>▪ 2022: EUR 14.81 mn</li> </ul>
<p><b>Expected Impact</b></p>	<p><b>Number of consultations per year</b></p> <ul style="list-style-type: none"> <li>▪ 2021: 3,455</li> <li>▪ 2022: 3,955</li> </ul>
<p><b>Reference to the budget</b></p>	<p>EP 07 Chapter 05 Product 05 EP 09 Chapter 21 Product 02a</p>



# Project #9

## CO<sub>2</sub>-neutral state administration, COME Universities

### Hesse's focus area

CO<sub>2</sub>-neutral state administration / energy efficiency of public buildings

### ICMA GBP category

Energy efficiency

### UN SDG

11-Sustainable cities and communities

### EU Environmental Objective

Climate change mitigation

### Description

- The energy efficiency program COME Hochschulen serves to sustainably increase energy efficiency and CO<sub>2</sub>-savings in university buildings in Hesse
- The state's requirements are above the legal energy standard according to GEG 2020
- With the participation of eleven universities and colleges, around 40 building projects are to be implemented by 2025

### Expenditures

- 2021: EUR 4.43 mn
- 2022: EUR 15.62 mn

### Expected Impact

#### CO<sub>2</sub>-savings in t per year

- 2021: 118.13
- 2022: 397.12

### Reference to the budget

EP 18 Chapter 01 Product 13



Technical University of Mittelhessen, Energetic renovation of facades Building C10, Gießen

# Project #10

## Funding of the state-owned enterprise for forest management ("Hessen Forst")

### Hesse's focus area

Measures concerning forests

### ICMA GBP category

Environmentally sustainable management of living natural resources and land use

### UN SDG

15-Life on land

### EU Environmental Objective

The protection and restoration of biodiversity and ecosystems

### Description

- The state-owned operation Hesse-Forst is responsible for the multifunctional sustainable forest management
- The project will finance environmental protection in the State Forest, including:
  - Conservation of species and development of biotopes outside the designated protected areas
  - Climate protection and adaptation
  - Various afforestations



### Expenditures

- 2021: EUR 7.54 mn
- 2022: EUR 8.68 mn

### Expected Impact

#### Amount allocated in EUR per ha operational area state forest

- 2021: 22.37
- 2022: 25.76

### Reference to the budget

EP 09 Chapter 60 Product 02

# Project #11

## Funding for nature conservation and landscape management - National park Kellerwald-Edersee

### Hesse's focus area

Measures concerning forests

### ICMA GBP category

Environmentally sustainable management of living natural resources and land use

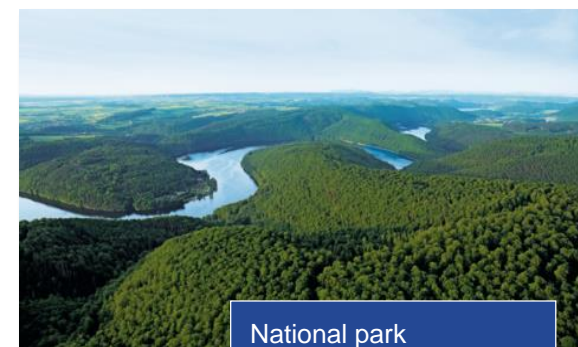
### UN SDG

15-Life on land

### EU Environmental Objective

The protection and restoration of biodiversity and ecosystems

<p><b>Description</b></p>	<ul style="list-style-type: none"> <li>▪ The State of Hesse finances the conservation of nature and the landscape management in the national park Kellerwald-Edersee</li> <li>▪ The aim is to strengthen climate protection and to develop climate adaptation strategies, aiming to preserve and promote biodiversity, to promote sustainable development and to implement sustainability strategies</li> </ul>
<p><b>Expenditures</b></p>	<ul style="list-style-type: none"> <li>▪ 2021: EUR 7.37 mn</li> <li>▪ 2022: EUR 8.73 mn</li> </ul>
<p><b>Expected Impact</b></p>	<p><b>Amount allocated in EUR per ha national park area</b></p> <ul style="list-style-type: none"> <li>▪ 2021: 985.64</li> <li>▪ 2022: 1,135.22</li> </ul>
<p><b>Reference to the budget</b></p>	<p>EP 09 Chapter 60 Product 03</p>



National park Kellerwald-Edersee

# Project #12

## Expansion of public transport and cycling



<b>Description</b>	<ul style="list-style-type: none"> <li>Financial support for measures conducted by municipalities to improve the infrastructure for walking and cycling under the state directive to promote local mobility<sup>(1)</sup></li> <li>It will support structural measures to improve the attractiveness and safety of foot and bicycle transport, in particular the refurbishment of nodes through cycling routes and footpaths</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 6.15 mn</li> <li>2022: EUR 8.03 mn</li> </ul>
<b>Expected Impact</b>	<b>Number of measures funded per year</b> <ul style="list-style-type: none"> <li>2021: 74</li> <li>2022: 114</li> </ul>
<b>Reference to the budget</b>	EP 17 Chapter 30 Product 51



(1) Richtlinie des Landes Hessen zur Förderung der Nahmobilität

# Project #13

## CO<sub>2</sub>-neutral state administration, energy efficiency building standards for new construction and renovation



<b>Description</b>	<ul style="list-style-type: none"> <li>▪ The State of Hesse aims to have a climate-neutral state administration by 2030</li> <li>▪ New buildings and existing buildings of the state shall outperform the requirements for building envelope defined by the Building Energy Act (GEG 2020) by 50 % on average</li> <li>▪ New buildings and renovations will comply with the building standard "Efficiency Buildings (Bund) 40", and "Efficiency Buildings (Bund) 55", respectively. Primary energy demand will be at least 60 % and 45 % lower than required by the GEG.</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>▪ 2021: EUR 6.02 mn</li> <li>▪ 2022: EUR 5.98 mn</li> </ul>
<b>Expected Impact</b>	<p><b>CO<sub>2</sub> savings in tons per year</b></p> <ul style="list-style-type: none"> <li>▪ 2021: 623.89</li> <li>▪ 2022: 619.75</li> </ul>
<b>Reference to the budget</b>	EP 18



# Project #14

## Renaturation – Implementation of the European Water Policy for the protection of water resources and securing and improvement of water quality



<b>Description</b>	<ul style="list-style-type: none"> <li>The implementation of the Water Framework Directive is in full swing in Hesse. By 2027, all water bodies should be in good ecological condition within the framework of EU standards</li> <li>Renaturation measures improve the structure of the water bodies and the ecological continuity</li> <li>To further advance the achievement of the goal, Hesse has established the program "100 wild streams for Hesse". The program has selected 100 Hessian streams which will be recultivated.</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 4.00 mn</li> <li>2022: EUR 6.73 mn</li> </ul>
<b>Expected Impact</b>	<p><b>Length of developed waters in km</b></p> <ul style="list-style-type: none"> <li>2021: 38.00</li> <li>2022: 71.41</li> </ul>
<b>Reference to the budget</b>	EP 17 Chapter 41 Product 38



# Project #15

## Education, advisory and technical information for agriculture and horticulture

### Hesse's focus area

Organic farming and nature conservation

### ICMA GBP category

Environmentally sustainable management of living natural resources and land use

### UN SDG

13-Climate action

### EU Environmental Objective

The protection and restoration of biodiversity and ecosystems

### Description

- Consultancy service, expert seminar and publications on climate change and adaptation for agricultural and horticultural enterprises
- Customer-oriented educational services and awareness creation for decarbonization and adaptation measures to changing climatic conditions using a variety of methods, media and platforms



### Expenditures

- 2021: EUR 4.39 Mio. mn
- 2022: EUR 4.44 Mio. mn

### Expected Impact

#### Number of customer contacts per year

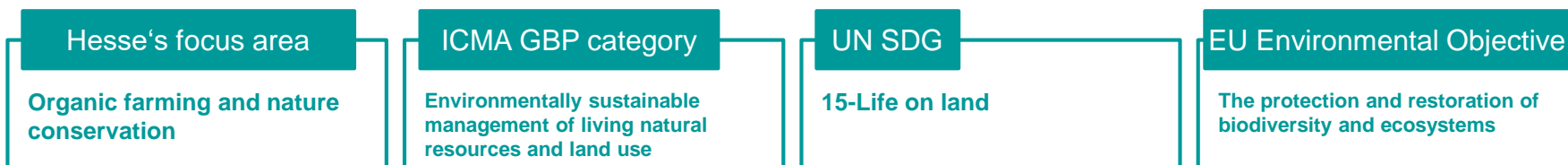
- 2021: 129,763
- 2022: 136,748

### Reference to the budget

EP 09 Chapter 31 Products 1, 2, 3

# Project #16

## HALM Diverse arable crops



**Hesse's focus area**

**Organic farming and nature conservation**

**ICMA GBP category**

**Environmentally sustainable management of living natural resources and land use**

**UN SDG**

**15-Life on land**

**EU Environmental Objective**

**The protection and restoration of biodiversity and ecosystems**

<p><b>Description</b></p>	<ul style="list-style-type: none"> <li>▪ The aim of the program (HALM C.1) is to support sustainable agriculture in Hesse. The project is intended to contribute towards biodiversity, water, soil and climate protection as well as towards the preservation of the cultivated landscape.</li> <li>▪ The program promotes the cultivation of five different main types of crops, including leguminous crops</li> <li>▪ The objective is to have a positive effect on soil fertility and water quality, and to contribute to the conservation and improvement of biodiversity in the area</li> </ul>
<p><b>Expenditures</b></p>	<ul style="list-style-type: none"> <li>▪ 2021: EUR 8.74 mn</li> </ul>
<p><b>Expected Impact</b></p>	<p><b>Hectares of diverse arable crops (approved area)</b></p> <ul style="list-style-type: none"> <li>▪ 2021: 103,125</li> </ul>
<p><b>Reference to the budget</b></p>	<p>EP 09 Chapter 23 Product 23</p>



# Project #17

## HALM Extensification of grassland

### Hesse's focus area

Organic farming and nature conservation

### ICMA GBP category

Environmentally sustainable management of living natural resources and land use

### UN SDG

13-Climate action

### EU Environmental Objective

The protection and restoration of biodiversity and ecosystems

### Description

- The extensification of grass land (HALM D.1) supports the extensive management of permanent grassland
- The operator does not use fertilizers and plant protection products as well as turn-and-relax soil processing

### Expenditures

- 2021: EUR 4.22 mn
- 2022: EUR 4.22 mn

### Expected Impact

#### Hectares of extensive grassland management per year (commitment area)

- 2021: 62,207
- 2022: 64,133

### Reference to the budget

EP 09 Chapter 23 Product 23f



# Project #18

## Increasing energy efficiency and renewable energy use, energy rehabilitation of municipal buildings

### Hesse's focus area

CO<sub>2</sub>-neutral state administration / energy efficiency of public buildings

### ICMA GBP category

Energy efficiency

### UN SDG

11-Sustainable cities and communities

### EU Environmental Objective

Climate change mitigation

### Description

- Funding provided to municipalities under the Local Energy Directive to achieve the objectives of the Hessian Energy Act
- The state supports investments in municipal buildings to reduce final energy consumption, to use renewable energy, highly efficient cogeneration, or related to limit greenhouse gas emissions

### Expenditures

- 2021: EUR 4.56 mn
- 2022: EUR 3.85 mn

### Expected Impact

#### Number of measures funded per year

- 2021: 34
- 2022: 44

### Reference to the budget

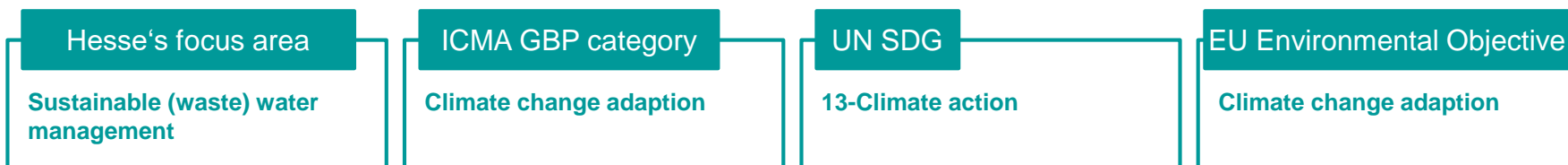
EP 17 Chapter 30 Product 50



Support for eligible individual measures

# Project #19

## Municipal flood protection (reservoirs)



<p><b>Description</b></p>	<ul style="list-style-type: none"> <li>▪ Allocations to municipalities for flood protection, for the planning, extension or rehabilitation of water-related installations and for the drainage of water-protected areas</li> <li>▪ Implementation of ecological, flood protection and exterior restoration systems and the development of flood risk management plans and heavy rain events</li> </ul>
<p><b>Expenditures</b></p>	<ul style="list-style-type: none"> <li>▪ 2021: EUR 4.91 mn</li> <li>▪ 2022: EUR 2.87 mn</li> </ul>
<p><b>Expected Impact</b></p>	<p><b>Number of measures funded per year</b></p> <ul style="list-style-type: none"> <li>▪ 2021: 14</li> <li>▪ 2022: 23</li> </ul>
<p><b>Reference to the budget</b></p>	<p>EP 17 Chapter 41 Product 38</p>



# Project #20

## Transition to climate-friendly transport

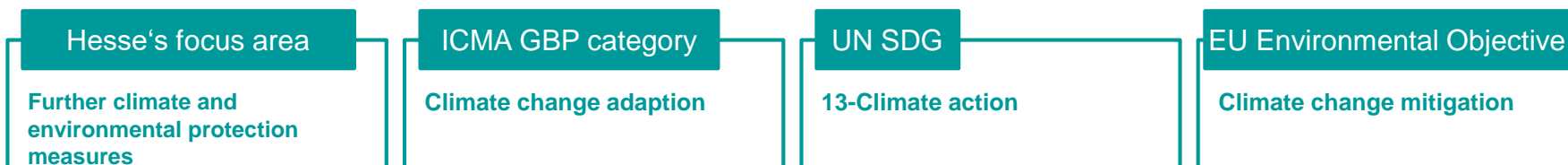


<b>Description</b>	<ul style="list-style-type: none"> <li>▪ The "Mobile Hesse 2030" program aims to implement a sustainable mobility policy that reduces CO<sub>2</sub>-emissions and contributes to the prevention of air pollution and noise protection, as well as solutions to urban transport problems</li> <li>▪ Projects to develop and accelerate the usage of electric drives, establish a sustainable passenger and freight transport system, promote sustainable mobility plans in municipalities and promote public information will be financed to implement the transition</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>▪ 2021: EUR 3.39 mn</li> <li>▪ 2022: EUR 4.18 mn</li> </ul>
<b>Expected Impact</b>	<p><b>Number of measures funded per year</b></p> <ul style="list-style-type: none"> <li>▪ 2021: 60</li> <li>▪ 2022: 78</li> </ul>
<b>Reference to the budget</b>	<p>EP 07 Chapter 15 Product 73</p>



# Project #21

## Climate protection policy – investment measures



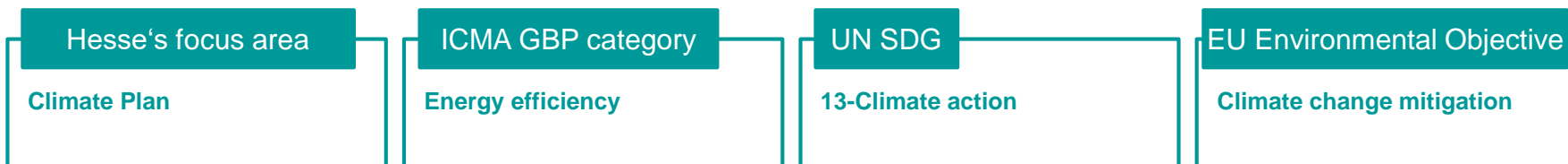
<b>Description</b>	<ul style="list-style-type: none"> <li>The project encourages municipalities to plan and implement local climate protection projects and other measures as defined by the Hessian Climate Plan</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 2.19 mn</li> <li>2022: EUR 4.00 mn</li> </ul>
<b>Expected Impact</b>	<p><b>Number of measures funded per year</b></p> <ul style="list-style-type: none"> <li>2021: 48</li> <li>2022: 103</li> </ul>
<b>Reference to the budget</b>	EP 17 Chapter 41 Product 40



Ministry of the Environment, Nature and Transport financially supports ten e-cargo bicycles in Rodgau

# Project #22

## Promoting the development of sustainable (and climate-neutral) universities



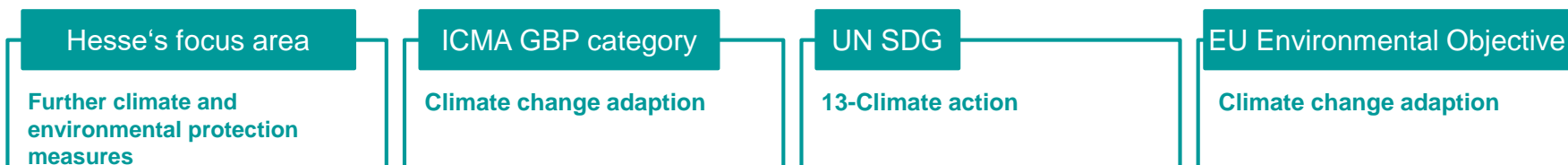
<b>Description</b>	<ul style="list-style-type: none"> <li>Universities are considered as one of the major energy consumers in public sector real estate. The State of Hesse promotes the development of concepts in the field of sustainability and biodiversity with the aim of a carbon-neutral state administration.</li> <li>Actions include the establishment of sustainability offices, the development of sustainability and mobility strategies, the development of energy management and environmental management systems, analyses and approaches to the development of climate-neutral universities</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 0.85 mn</li> <li>2022: EUR 4.60 mn</li> </ul>
<b>Expected Impact</b>	<p><b>Number of measures funded per year</b></p> <ul style="list-style-type: none"> <li>2021: 31</li> <li>2022: 31</li> </ul>
<b>Reference to the budget</b>	EP 15 Chapter 02 Product 07



Green campus: Urban Gardening at the TU Darmstadt

# Project #23

## Climate protection policy – non-investment measures



<b>Description</b>	<ul style="list-style-type: none"> <li>Measures to reduce greenhouse gas emissions by improving climate protection, adapting to climate change and increasing the use of renewable energy</li> <li>Non-investment measures include studies and analyses to identify the urban vulnerability, climate analyses, simulations and analyses of runoffs and necessary measures in the event of heavy rains and, municipal information measures on climate change mitigation and adaption</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 1.12 mn</li> <li>2022: EUR 2.88 mn</li> </ul>
<b>Expected Impact</b>	<b>Number of measures funded per year</b> <ul style="list-style-type: none"> <li>2021: 33</li> <li>2022: 95</li> </ul>
<b>Reference to the budget</b>	EP 09 Chapter 21 Product 02a/b



# Project #24

## Strengthen pedestrian and bicycle traffic



<b>Description</b>	<ul style="list-style-type: none"> <li>Projects to implement the urban mobility strategy to strengthen pedestrian and bicycle traffic. The following measures will be implemented, among others:               <ul style="list-style-type: none"> <li>Supporting intermodal and climate-friendly transport</li> <li>Strengthening mobility in rural areas</li> <li>Promotion of climate-friendly local mobility</li> </ul> </li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 1.51 mn</li> <li>2022: EUR 2.52 mn</li> </ul>
<b>Expected Impact</b>	<p><b>Number of measures funded per year</b></p> <ul style="list-style-type: none"> <li>2021: 6</li> <li>2022: 7</li> </ul>
<b>Reference to the budget</b>	<p>EP 07 Chapter 15 Product 74</p>



# Project #25

## CO<sub>2</sub>-neutral state administration, COME Mobility

### Hesse's focus area

CO<sub>2</sub>-neutral state administration / energy efficiency of public buildings

### ICMA GBP category

Clean transportation

### UN SDG

9-Industry, innovation and infrastructure

### EU Environmental Objective

Climate change mitigation

### Description

- As part of the 'COME Mobility' program of the CO<sub>2</sub>-neutral state administration, the State company is advancing the expansion of the e-vehicle fleet.
- By 2023, 1,000 bicycle parking spaces will be built on state property. Financial support will also be provided for bicycle rack and charging infrastructure.

### Expenditures

- 2021: EUR 1.09 mn
- 2022: EUR 2.25 mn

### Expected Impact

CO <sub>2</sub> -savings in t per year	Installed charging points
2021: 126	2021: 21
2022: 1,122	2022: 187

### Reference to the budget

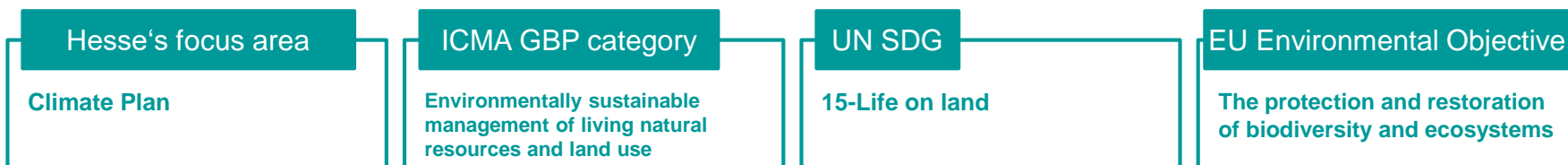
EP 18 Chapter 01 Product 15



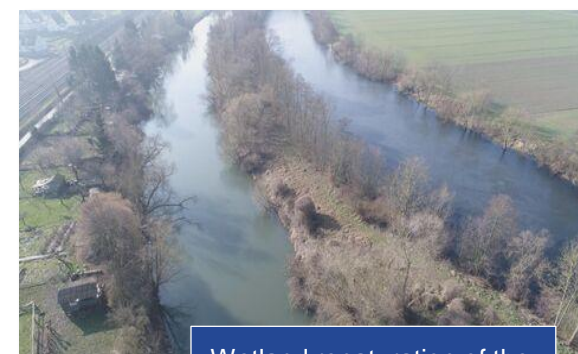
Charging infrastructure District Court Fritzlar

# Project #26

## Ecological flood prevention and wetland restoration



<b>Description</b>	<ul style="list-style-type: none"> <li>Measures to improve water retention in the wetlands, as included in the Hessian Flood Protection Concept. The measures are becoming more urgent due to expected climate changes.</li> <li>Contentious interests relating to the different land use entitlements will be managed, e.g. balance between an agricultural use and the intended wetland renaturation for flood prevention.</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 1.65 mn</li> <li>2022: EUR 1.22 mn</li> </ul>
<b>Expected Impact</b>	<p><b>Number of measures funded per year</b></p> <ul style="list-style-type: none"> <li>2021: 26</li> <li>2022: 22</li> </ul>
<b>Reference to the budget</b>	EP 09 Chapter 21 Product 02c



Wetland renaturation of the Eder near Felsberg

# Project #27

## CO<sub>2</sub>-neutrale state administration, COME Solar



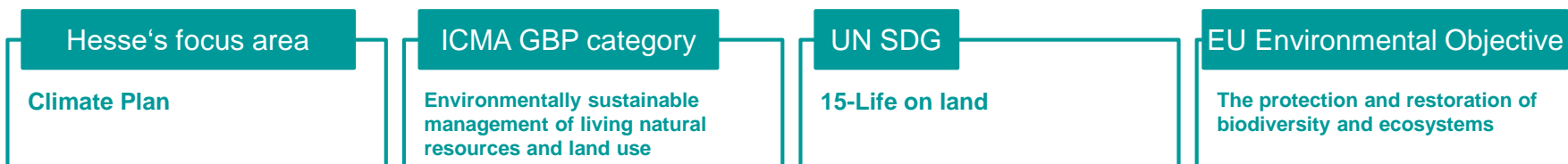
<b>Description</b>	<ul style="list-style-type: none"> <li>The program will equip buildings and properties, which are managed by the Hessian State Office for Construction and Real Estate with photovoltaic and solar thermal systems</li> <li>The aim is to significantly increase the use of solar energy for heat production and for the production of self-generated electricity by state-owned properties</li> <li>By 2024, approximately 130,000 m<sup>2</sup> of roof space will be equipped with photovoltaic systems</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 0.65 mn</li> <li>2022: EUR 1.74 mn</li> </ul>
<b>Expected Impact</b>	<p><b>Capacity in planning in kWp</b></p> <ul style="list-style-type: none"> <li>2021: 2,630</li> <li>2022: 6,800</li> </ul>
<b>Reference to the budget</b>	EP 18 Chapter 01 Product 15



Technical college Hadamar

# Project #28

## Maintain and develop biotope network systems and avoid further landscape fragmentation



<b>Description</b>	<ul style="list-style-type: none"> <li>▪ The biotope network shall promote the growth of habitable areas, in particular, for species affected by climate change and allow them to reach those along corridors or through steppingstones</li> <li>▪ Biotope-related projects, such as wetland renaturation, also promote ecological flood protection. The biotope system is valuable in terms of nature protection and also helps to stabilize the water balance.</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>▪ 2021: EUR 1.24 mn</li> <li>▪ 2022: EUR 1.15 mn</li> </ul>
<b>Expected Impact</b>	<b>Number of measures funded per year</b> <ul style="list-style-type: none"> <li>▪ 2021: 30</li> <li>▪ 2022: 44</li> </ul>
<b>Reference to the budget</b>	EP 09 Chapter 21 Product 02c

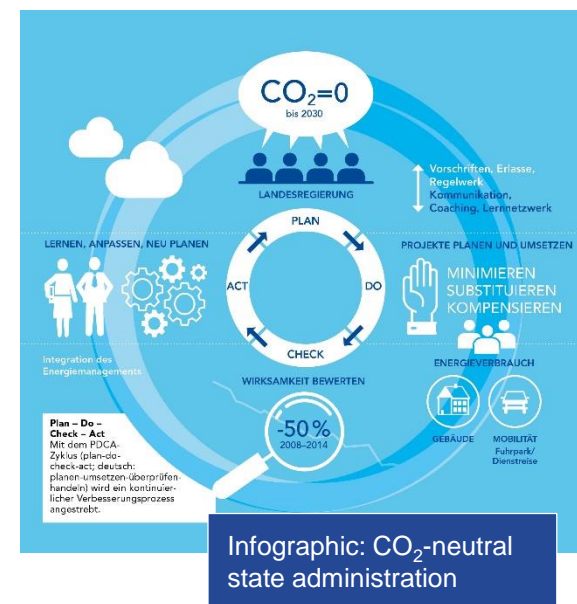


# Project #29

## CO<sub>2</sub>-neutral state administration



<b>Description</b>	<ul style="list-style-type: none"> <li>The aim of the project is to make the entire state administration climate-neutral by 2030. This will be achieved, inter alia, through energy efficiency plans, building rehabilitation programs and energy management systems.</li> <li>By widespread procurement of green electricity it is expected to reduce CO<sub>2</sub>-emissions by 160,000 tons per year</li> </ul>
<b>Expenditures</b>	<ul style="list-style-type: none"> <li>2021: EUR 0.79 mn</li> <li>2022: EUR 1.18 mn</li> </ul>
<b>Expected impact</b>	<p><b>CO<sub>2</sub>-reduction in tons p.a.</b></p> <ul style="list-style-type: none"> <li>2021: 160,000</li> <li>2022: 160,000</li> </ul>
<b>Reference to the budget</b>	EP 06 Chapter 01 Product 10



# Project #30

## Acquisition of electric vehicles at the Hessian police departments

### Hesse's focus area

Further climate and environmental protection measures

### ICMA GBP category

Clean transportation

### UN SDG

13-Climate action

### EU Environmental Objective

Climate change mitigation

### Description

- The fleet of Hesse's police will be further electrified in the next few years as part of the replacement efforts, if technically and tactically possible.

### Expenditures

- 2021: EUR 0.10 mn
- 2022: EUR 1.83 mn

### Expected impact

#### Number of (electric) vehicles procured per year\*

- 2021: 2
- 2022: 27

### Reference to the budget

EP 03 Chapter 81



Acquisition of electric vehicles

\*CO<sub>2</sub> emission limit < 50 g CO<sub>2</sub>/km according to the EU-wide WLTP measurement procedure

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**Slide 5:** stock.adobe.com

**Slide 18:** CO<sub>2</sub>-neutral state administration

**Slide 29 and 40:** HMWEVW / Corinna Spitzbarth

**Slide 30 and 44:** NW-FVA, HMKLV / Jörg Weymar

**Slide 31:** <https://www.lea-hessen.de/>

**Slide 32:** Visualization; SHP Architekten BDA Deforth Opitz PartG mbB, Darmstadt

**Slide 33 and 53:** [https://wildebaechehessen.de/wp-content/uploads/2020/07/Karte\\_der\\_Baeche-4.pdf](https://wildebaechehessen.de/wp-content/uploads/2020/07/Karte_der_Baeche-4.pdf)

**Slide 34 and 55:** HMKLV / Department VII 3

**Slide 35 and 63:** HMWEVW

**Slide 41:** <https://rp-darmstadt.hessen.de/presse/viergleisiger-ausbau-der-s6-bis-friedberg-rp-veroeffentlicht-erneute-planaenderung>

**Slide 42:** [https://innen.hessen.de/sites/innen.hessen.de/files/2021-12/raeumlicher\\_gueltigkeitsbereich\\_anlage\\_2\\_0.pdf](https://innen.hessen.de/sites/innen.hessen.de/files/2021-12/raeumlicher_gueltigkeitsbereich_anlage_2_0.pdf)

**Slide 43:** Hesse Mobil Road and Traffic Management

**Slide 45:** <https://www.schuelerticket.hessen.de/#showfaq>

**Slide 46:** stock.adobe.com

**Slide 47:** <https://www.lea-hessen.de/buergerinnen-und-buerger/testen-sie-unsere-energie-checks/modernisierungscHECK/>

**Slide 48:** Visualization: HEGGER HEGGER SCHLEIFF HHS Planer + Architekten AG, Kassel

**Slide 49:** Hesse-Forst / Sandra Eifert

**Slide 50:** National park Kellerwald-Edersee / Manfred Bauer

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**Slide 57:** LEA Hesse

**Slide 58:** Water board Kinzig

**Slide 59:** HMKLV

**Slide 60:** HMKLV / Timo Meyer

**Slide 61:** TU Darmstadt

**Slide 62:** stock.adobe.com

**Slide 64:** LBIH

**Slide 65:** RP Kassel / Werner Haaß

**Slide 66:** LBIH / Kai Sander

**Slide 67:** Northwest German Forestry Laboratory / Philipp Küchler

**Slide 68:** HMdF

**Slide 69:** Hesse Police

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More information are available at <https://www.hessen.de/>, regarding the Green Bond at <https://finanzen.hessen.de/> and in Reuters using RIC HESSEN and in Bloomberg using HESSEN or RESP LAEN.

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