



Action Plan for Brandenburg

Implementation and monitoring 1 December 2021–31 May 2023

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Introduction

This Action Plan was created by project partner 5, the Ministry of Economic Affairs, Labour and Energy of the State of Brandenburg, as part of the Interreg DeCarb project and contains information on how the experiences and expertise gained via the international partnership can be used to influence the political instrument Energy Strategy 2040 in the State of Brandenburg. Particular attention is paid to the Lusatia coal region in regard to establishing the targets of the overall project. The document covers the planned actions and their timescales, as well as the stakeholders, costs, and financing involved.

2. General information

Project: Interreg DeCarb

Partner organisation: Ministry of Economic Affairs, Labour and Energy of the State of Brandenburg (MWAE)

Other organisations involved: -

Country: Germany

NUTS 2 Region: Brandenburg

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3. Political and regional context

As part of the 2030 climate and energy framework, the EU has defined the following key targets:

A reduction in greenhouse gas emissions of at least 40% in comparison to 1990, at least 32% share for renewable energies and an improvement in energy efficiency by at least 32.5%.¹ The coal industry currently employs approximately 240,000 people in the EU.² Fossil fuels will become less important for power supply in the future. This decarbonisation process has enormous economic and social effects on the regions directly involved in the carbon value chain. For the transition to take place as fairly as possible, DeCarb rises to these socio-economic challenges by facilitating regional authorities and stakeholders in their communication and supporting the exchange of experiences between international project partners.

3.1 The Interreg DeCarb project

The project consists of nine partners (Spain, Greece, Romania, Bulgaria, Slovenia, Hungary, Poland, Germany and Denmark) and will run from 1 June 2018 to 31 May 2023.

The first phase focused on the exchange of experiences between the project partners. Stakeholder meetings, study trips and events focused on, for example, dialogue, were held and good practice examples swapped. The goal of the first phase is the development of action plans. Individual actions will be implemented and monitored in the second phase.

¹ https://ec.europa.eu/clima/policies/strategies/2030_de

² https://www.eib.org/attachments/thematic/coal_regions_in_transition_overview_2020_de.pdf

The following table lists the partner organisations.

Partner	Country	Organisation
1	Bulgaria	Stara Zagora Regional Economic Development Agency
2	Poland	Lodzkie Region
3	Hungary	ENERA Eszak-Alfold Regional Energy Agency Nonprofit Ltd.
4	Romania	South-West Oltenia Regional Development Agency
5	Germany	Ministry of Economic Affairs, Labour and Energy of the State of Brandenburg
6	Denmark	House of Energy
7	Greece	Regional Association of Local Governments of Western Macedonia
8	Slovenia	Energy Agency of Savinjska and Koroska Region
9	Spain	Extremadura Energy Agency

More information at <https://www.interregeurope.eu/decarb/>.

3.2 Regional context

The Action Plan aims for the following outcomes:	<input checked="" type="checkbox"/> Investments in growth and creation of jobs <input type="checkbox"/> Programme for European Territorial Cooperation <input checked="" type="checkbox"/> Another instrument for regional development policy
Name of the political instrument:	Energy Strategy 2030 and its update into Energy Strategy 2040

In Germany, coal is mined in three lignite coal fields: the Rhenish coal field, the Lusatian coal field and the Central German coal field. The Lusatian coal field extends across the states of Brandenburg and Saxony.

The project focuses on the Brandenburg part of Lusatia (Lausitz-Spreewald), which constitutes five NUTS 3 regions (see Figure 1). There are two active mines in Lusatia: Jänschwalde and Welzow-Süd. The Cottbus-Nord mine had already been depleted by the end of 2015. The Jänschwalde and Schwarze Pumpe power stations have a combined capacity of 3,600 MW in normal operations. Two other power station blocks in Jänschwalde with a total of 1,000 MW are now only used as emergency reserves.

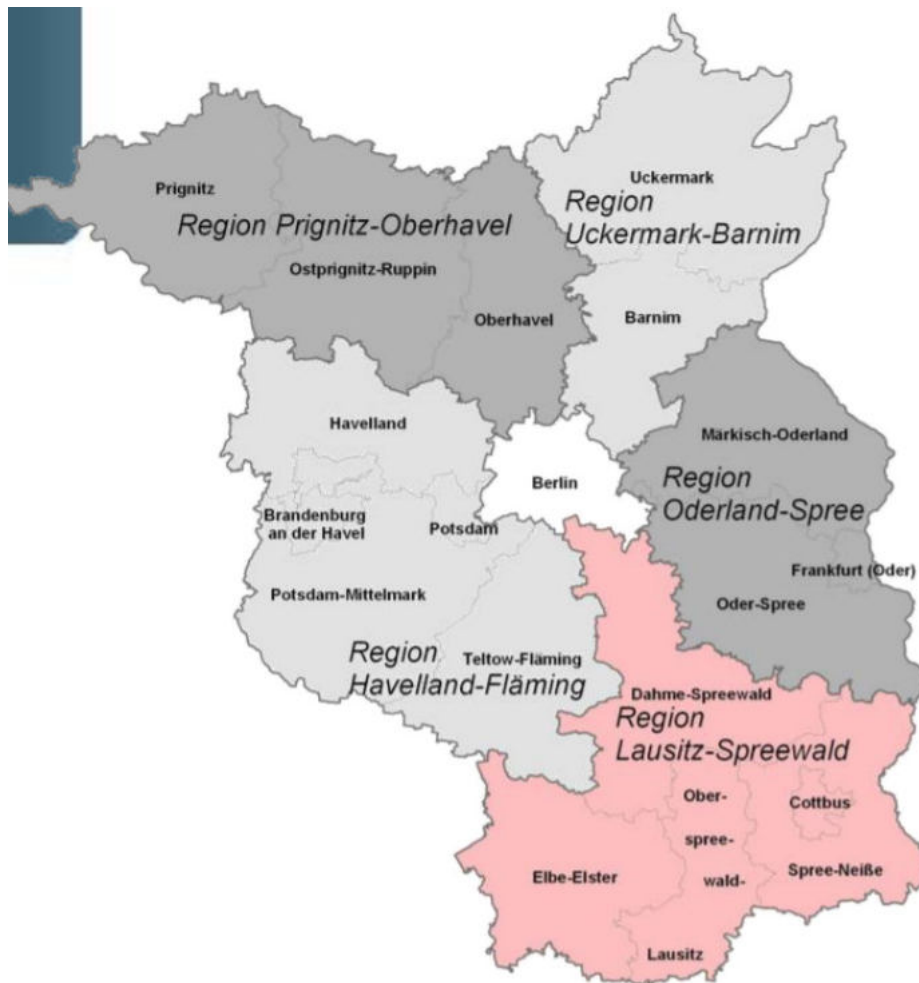


Fig. 1: Location of the Spreewald-Lausitz coal area in the Brandenburg region³

The Lusatia region is made up of five NUTS 3 regions:

- DE407 Elbe-Elster district
- DE40B Oberspreewald-Lausitz district
- DE402 Cottbus urban district
- DE40G Spree-Neiße district
- DE406 Dahme-Spreewald district

Brandenburg is one of Germany's most significant energy producers and exporters. Around one tenth of the energy currently consumed in Germany is generated from a mix of conventional and renewable sources in the State of Brandenburg. The region was once the centre of coal mining in eastern Germany. From the 19th century onwards, Brandenburg developed into an industrial region producing a significant amount of brown coal and energy. The first mine was opened in 1844 alongside briquet factories, where

³ 2019_05_08_DeCarb SWOT analysis_Report_Brandenburg.docx

the coal was compressed into burnable bricks, and the processing and metal industries related to this. In terms of output (approx. 34 mil tonnes) and power station capacity (approx. 3,600 MW) Brandenburg remains one of Germany's biggest lignite coal fields to this day.⁴

According to a 2021 report from the company prognos AG around two thirds of jobs (as of 2018: 9,100) directly or indirectly linked to coal mining will be lost due to the closure of coal power stations in the region. In 2040 the number of employees will sink to 2,000.⁵

The full phase-out of coal power in Germany is meant to be completed by 2038. In the four coal states Brandenburg, North-Rhine Westphalia, Saxony and Saxony-Anhalt, the federal government is supporting measures to combat the associated structural changes with a total of 40 billion euros. 26 billion euros of this are being invested as part of federal programmes and projects, while 14 billion euros are being provided as federal financial assistance to the four coal states. On 3 July 2020 legislation regarding the coal phase-out and structural reinforcement⁶ was passed at the federal level.

Additionally, as a foundation for developing renewable energies, the Renewable Energy Law (EEG) has existed for almost 20 years with the target of 40-45% of the power consumed in Germany to come from renewable energy by 2025.⁷

At the state level an agency for structural development⁸ was established in Brandenburg. In addition to the Energy Strategy 2030 of the State of Brandenburg, the state government has created a lead scenario for the development of energy policy in Brandenburg. Owing to new challenges presented by the coal phase-out, this will be updated in the current Energy Strategy 2040.

Brandenburg's Minister President Dietmar Woidke wants to shape Lusatia into a powerful, innovative region with a high quality of life, into a model region for climate protection and economic growth.⁹

⁴ MWAE, Needs analysis report on environmental restitution & land restoration in decarb regions

⁵ Energy Strategy Brandenburg 2040, p. 49.

⁶ <https://www.brandenburg.de/cms/detail.php/bb1.c.672193.de>

⁷ <https://www.bmwi.de/Redaktion/DE/Dossier/erneuerbare-energien.html>

⁸ <https://www.brandenburg.de/cms/detail.php/bb1.c.672193.de>

⁹ <https://www.brandenburg.de/cms/detail.php/bb1.c.672193.de>

3.3 SWOT analysis of Lusatia

The SWOT analysis is taken from the “Final report – Case study and SWOT analysis, identifying the most advantageous growth areas”. This was compiled in the third semester by the Danish partners from the House of Energy as part of the Interreg DeCarb project with input from the individual project partners (Methodology and Report on A 1.3).

Strengths	<ul style="list-style-type: none"> - The local energy sources, particularly wind and solar, can cover most power and heat consumption by 2040. - Potential of geothermal energy for generating heat for warm water and central heating. - The federal government has driven forward legislation in the form of an excellently financed programme to follow the final phase-out of coal extraction in Germany. - The unemployment rate is relatively low (6%) and, with large companies, the industrial and engineering sectors are very well developed in the region. This presents good opportunities for employing people from the carbon value chain. - The region has developed multiple strategies with a firm basis in policy for the transition to renewable energy in the heat and power sectors.
Weaknesses	<ul style="list-style-type: none"> - Just over 10% of required heat is covered by district heating. This must be expanded in order to facilitate efficient use of renewable energy and the transition to fuels other than coal. - Almost 5,600 jobs (as of 2018) in Lusatia are directly connected to the carbon value chain¹⁰ - Heat and power from coal remains the cheapest source of energy. - Some technologies (especially high-capacity heat pumps, mass storage and geothermal energy) are still in the development phase. - The switch to biomass is not the definitive solution; among renewable energies biomass currently represents the biggest share in heat supply (60% of overall renewable heat production), non-combustion technologies are to be favoured.
Opportunities	<ul style="list-style-type: none"> - The Lausitz-Spreewald region can benefit from decarbonisation and trends in the energy sector and create new industrial value chains by developing renewable energies, producing hydrogen on an industrial-scale, energy-oriented building refurbishment, and energy-optimised transformation for cities and rural areas. - The power station locations in Jänschwalde and Spremberg can be redesigned into next-generation industrial parks, with a view to using renewable energies. - The closed mining locations can be restored to their original purpose via recultivation (e.g. for forestry, agriculture) or used for renewable energy exploitation. Based on existing examples the post-mining landscapes can be transformed into artificial lakes and leisure parks.

¹⁰ Energy Strategy 2040, p. 48.

Threats	<ul style="list-style-type: none"> - Necessity of maintaining energy security could delay the complete phase-out of coal power. - The constraints on district heating could be changed and make individual systems more appealing, thus leading to changes in the overall flexibility of the energy system. - The EU could reduce ambitions in terms of climate change prevention. - Ensuring electricity supply if the base load from nuclear and coal power stations cuts out. - Risk of endangering European competitiveness in cheap power supply. - High degree of expensive investments.
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4. Budget

The total budget of the project is 1,807,739.00 euros.

The share dedicated to Brandenburg is 245,468.00 euros. 85% is financed by the European Regional Development Fund (ERDF), and 10% via the FIBE Guideline of the State of Brandenburg. 5% are own funds. The diagram below shows the budget according to budget line.

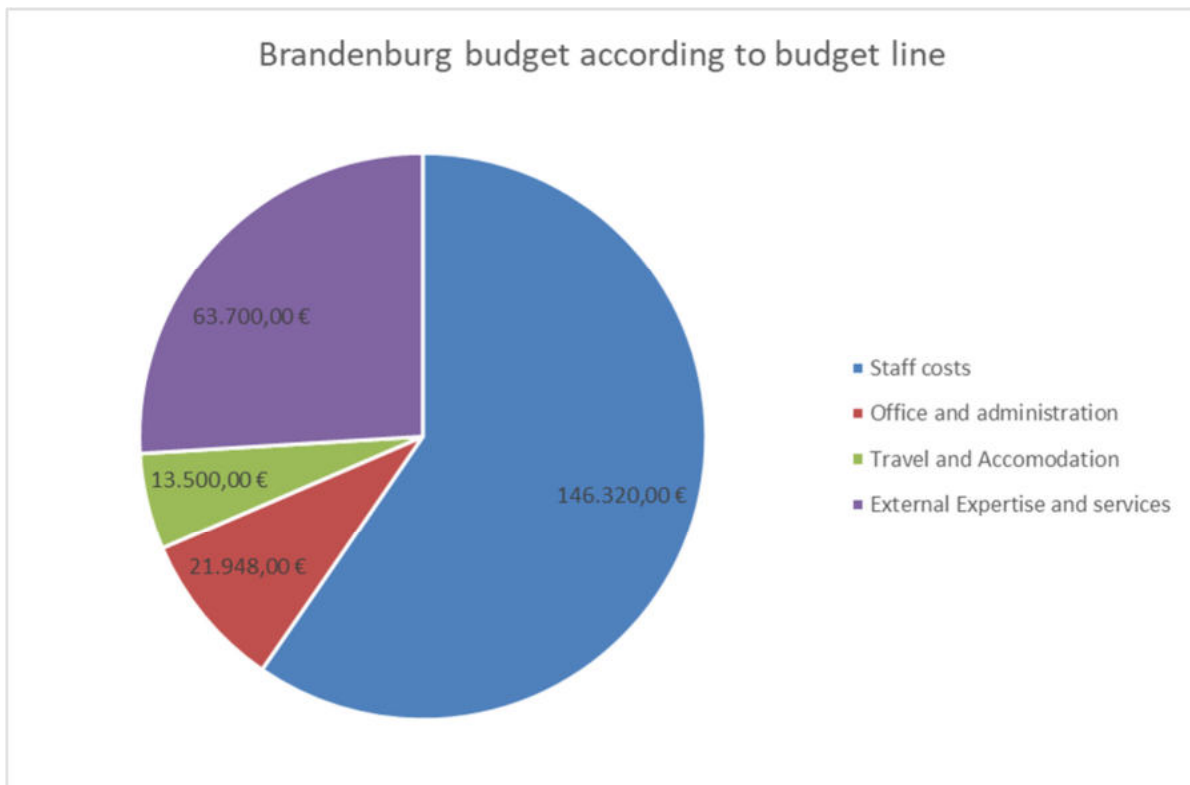


Fig. 2: Own diagram

5. Phase 1 Development of the action plan

5.1. Methodology

The Interreg DeCarb project is divided into two phases. The first phase ran from 1 June 2018 until 31 May 2021.

Each partner analysed their region affected by the coal phase-out in regard to specific local situations and problems and acquired stakeholders to oversee the project in future.

Regular meetings and communication between the partners and regional stakeholders guarantee that decarbonisation experiences are shared, creating value for all project participants in the process.

The partners developed various methodologies for creating the action plan over the course of the project. Thanks to surveys, partners are directly involved in the methodology creation process.

5.2 Implementation in Brandenburg

At the beginning of the project, the then Ministry of Economic Affairs and Energy of the State of Brandenburg (MWE), with the assistance of a service provider, developed a methodical framework and input screen for the partners in order to analyse territorial needs and to suggest recultivation and re-use concepts for post-mining landscapes.

In the third semester, the first study trip was made to Brandenburg from 6 to 7 November 2019. The exchange with business and administration representatives from Brandenburg on the potential of recultivation and use of post-mining landscapes took centre stage. “Brandenburg is a Europe-wide role model when it comes to remodelling mining landscapes for the future. Lusatia’s recultivation technologies and reuse concepts can be used as a draft for other European coal regions. For Brandenburg in particular, it leads to opportunities in the field of renewables and the use of hybrid and storage technologies,” said economic minister Jörg Steinbach in a press release on the occasion of the partner regions’ visit to Lusatia. The itinerary included a meeting with regional stakeholders and companies on the evening of 6 November in Cottbus with the goal of forming direct contacts. On 7 November, Lausitz Energie Bergbau AG (LEAG) presented recultivation projects in the Welzow-Süd region as examples of private and public cooperation with scientific institutions.



Stakeholder meetings also regularly took place, which ensured regional collaboration and significantly contributed to the project's success.

5.3 Project stakeholders

The following stakeholders assisted and supported the creation of the Action Plan.

- Brandenburg State Office for Mining, Geology and Raw Materials
- LEAG
- State Chancellery of the State of Brandenburg, Office of the Commissioner for the Lusatia Region
- Brandenburg Economic Development Agency (WFBB)
- Cluster Energy Technology Berlin-Brandenburg (WFBB)
- Cottbus Chamber of Commerce and Industry
- Innovationsregion Lausitz agency
- Brandenburg University of Technology Cottbus-Senftenberg
- Regional Planning Department Lausitz-Spreewald
- Cit GmbH, economic development for the Spree-Neiße district
- Wirtschaftsregion Lausitz agency
- Lausitzrunde (Citizen representatives of various regional administrative bodies of Lusatia)
- Lausitzer und Mitteldeutsche Bergbau-Verwaltungsgesellschaft mbH (LMBV)

Due to the pandemic-related restrictions, partner events were carried out online as of the fourth semester in order to ensure regular communication.

The planned dialogue event was also held online due to contact restrictions. Focusing on the question “Will Lusatia remain the energy heart of Brandenburg?”, the event took place on 24 November 2020 with stakeholders from the energy sector and representatives of the municipalities and associations. Presentations were held following a welcome speech from the MWAE Energy and Raw Materials division manager. Participants were invited to join the discussions. They covered prospective business areas of LEAG, the state chancellor’s current report on structural development in Lusatia, as well as the successful study trip to Brandenburg and the additional value it has brought via international information sharing and the networks.

5.4 Good practice examples

The following good practice examples were mentioned by the Brandenburg project partners:

<p>Fraunhofer Research Institution for Energy Infrastructures and Geothermal Systems</p>	<p>Founded in 2019, the research institution focuses on the development of new cross-sector technologies for joint infrastructures. The research focuses on Lusatia. In combination with the existing capacity in North-Rhine Westphalia, a bridge can be built between the western and eastern German regions especially affected by structural changes. Developing technologies to link heat supply and traffic with energy generated from renewable sources can strengthen Germany’s position as a technological hub in the long term. However, an array of important technological challenges must be solved first.</p>
<p>Institute of Low-Carbon Industrial Processes</p>	<p>The institute, likewise founded in 2019, is broadening the research portfolio of the German Aerospace Center (DLR) with a new focus of CO₂ reduction for industrial processes. Specific requirements and research needs for the decarbonisation of large, energy-intensive industrial sectors (power plants, steel manufacture, cement industry, petrochemistry, chemical industry, aluminium production) can be covered by this.</p>
<p>Competence Centre on Climate Change Mitigation in Energy-intensive Industries</p>	<p>The KEI was founded in 2019 in Cottbus. It consults and supports scientific institutions and energy-intensive industries with reducing greenhouse gases. In its role as a think tank, the KEI is aligned with business, politics, science, and the general public. It aims to offer an interdisciplinary, cross-sectoral exchange platform for the development of springboard innovations for climate-neutral industry.</p>

MinGenTec	<p>A network initiative from the Cottbus Chambers of Commerce and Industry (IHK) and the Economic Development Agency Brandenburg (WFBB), operated in cooperation with IHK Dresden and the Saxony Economic Development Corporation (WFS).</p> <p>Lusatia has set a worldwide standard along the entire value chain, from mining and energy production all the way to recultivation. MinGenTec aims to promote more innovations in these fields and in doing so help companies bring their expertise and technologies to new markets. MinGenTec supports mining and energy technology companies in Lusatia in the following ways: Networking, internationalisation including market development, innovation and training, international marketing.</p>
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For more information on the good practice examples: <https://www.interregeurope.eu/decarb/good-practices/>

6. Action Plan actions in detail

6.1 Action 1: Potential analysis of areas available for solar systems in the State of Brandenburg (PV analysis)

Action 1	Potential analysis of areas available for solar systems in the State of Brandenburg (PV analysis)
1. Context	<p>According to the Energy Strategy 2030 (ES 2030)¹¹ of the State of Brandenburg, 3.5 GW PV capacity should be installed in Brandenburg in 2030. This target was already reached in 2018. According to a study by prognos AG¹² it appears that significantly increasing photovoltaic (PV) targets may be possible in the State of Brandenburg.</p> <p>Due to the 2014 and 2017 revisions of the EGG¹³, remunerated service quotas for PV power stations over 750 kW are only tendered by the Federal Network Agency (BNetzA) in very limited funding scenarios (conversion areas and verges at infrastructure facilities).</p> <p>As expanding PV remains the focus, the PV analysis is part of the coalition contract of the State of Brandenburg's government parties. This is why "the coalition partners want to significantly increase photovoltaic capacities in Brandenburg and conduct a potential analysis. To do this, we want to install more solar panels on suitable state roofs and commercial properties and take innovative concepts into increased consideration."</p>

¹¹ <https://energieagentur.wfbb.de/de/Energiestrategie-2030>

¹² https://mwae.brandenburg.de/media/bb1.a.3814.de/Prognos_Studie_Energieszenarien_ES2030_BB_2017_07_13.pdf

¹³ https://www.bmwi.de/Redaktion/DE/Downloads/G/gesetzentwurf-aenderung-erneuerbare-energien-gesetzes-und-weiterer-energierechtlicher-vorschriften.pdf?__blob=publicationFile

2. Interregional Aspect	<p>The interregional aspect of the proposed action lays in the following project activities:</p> <p>A1.3 SWOT analysis identifying the most advantageous growth areas done by Business Aalborg, Denmark – as a basis for further exploration of the PV potential in Brandenburg.</p> <p>A3.1 Interregional workshop on large-scale PV renewables and the provided input paper.</p>
3. Action description	<p>The goal is, using the analysis, to determine the areas still available and suitable for tendering as PV power stations and to determine the realisable potential in the State of Brandenburg, even beyond the requirements of the EGG. Large free spaces and individual buildings alike are considered. The Lusatia region receives special attention as a post-mining landscape.</p> <p>The project is divided into three work packages:</p> <p>Work package 1 (WFBB) focuses on the preparation, coordination and supervision of the PV analysis, the creation of the criteria catalogue, and the involvement of external expertise.</p> <p>Work package 2 (external) includes the methodology and conduction of the PV analysis and the final presentation of the results, including the creation and operation of the solar map which, in the interests of transparency, is available online to the general public.</p> <p>The third work package (WFBB) involves surveying municipalities and evaluating the results.</p> <p>A steering committee was formed to coordinate the approach and develop the criteria catalogue. The first meeting took place on 11 November 2020.</p>
4. Participating stakeholders	<p>The MWAE commissioned the Energy Agency of the Economic Development Agency Brandenburg (WFBB) with developing the PV analysis. WFBB will ensure scientific supervision is provided for the second package.</p> <p>The following stakeholders are, alongside MWAE, involved in the project and form the steering committee.</p> <p>Ministry of Agriculture, Environment and Climate Protection (MLUK) Ministry of Infrastructure and Federal State Planning (MIL) Ministry of Finance and for European Affairs (MdFE)/ Brandenburg State Office for Property and Construction (BLB) Economic Development Agency Brandenburg (WFBB) Ministry of Science, Research and Culture (MWFK) Ministry of Justice (MdJ)</p>

	5 Regional Planning Departments (RPD): Havelland-Fläming, Lausitz-Spreewald, Oderland-Spree, Prignitz-Oberhavel, Uckermark-Barnim Leibnitz Centre for Agricultural Landscape Research (ZALF) External service providers
5. Timescale	The timescale for the project extends from Quarter 4 2020 to 31 December 2021.
6. Costs	205,000.00 euros.
7. Financing	The costs will be paid in full out of the MWAE budget.

6.2 Action 2: Update the Regional Energy Concept for the Spreewald-Lausitz region

Action 2	Update the Regional Energy Concept for the Spreewald-Lausitz region
1. Context	The ES 2030 defines further developing renewable energies as a focus point. Renewables should be increased to a share of 40% of end energy consumption or 32% of primary consumption. ¹⁴ The creation of Regional Energy Concepts (REC) in all five planning regions of Brandenburg is part of the ES 2030. Regional Energy Managers have been put in place to create and implement these concepts. The Regional Energy Concepts provide information for municipalities, companies and citizens and include measures for developing a sustainable energy supply and the regional economy.
2. Interregional Aspect	The interregional aspect of the proposed action lays in the following project activities: A1.3 SWOT analysis identifying the most advantageous growth areas done by Business Aalborg, Denmark – as a basis for further exploration of the PV potential in Brandenburg. A3.1 Interregional workshop on large-scale PV renewables and the provided input paper.
3. Action description	Targets of the REK update (also for Lausitz-Spreewald): - Creation of 5 Regional Energy Concepts comparable in terms of content - Standardised, expert minimum content - Reflection and evaluation of the process since 2013 - Update of the work orders - Recommendations for action

¹⁴ <http://www.energiemanagement-brandenburg.de/energiepolitik.html>

	Various measures, such as establishing networks, creating a monitoring report and an internal energy map, are carried out to implement the REC.
4. Participating stakeholders	Other partners of this process are the commissioning party (seecon Ingenieure GmbH), the Economic Development Agency Brandenburg (Energy Agency Brandenburg), other Brandenburg planning departments, as well as the districts in the planning region, and the Climate Protection Manager of the municipality/region.
5. Timescale	The action timescale began on 1 July 2019 and will likely end on 31 December 2021.
6. Costs	93,284.10 euros including taxes.
7. Financing	According to the funding agreement of 23 December 2019 from the Investment Bank of the State of Brandenburg, 75,000.00 euros were approved as a purpose-specific subsidy from ERDF funds within the framework of the Operational Program of the State of Brandenburg. Further costs will be covered by the Elbe-Elster, Oberspreewald-Lausitz, Spree-Neiße, Dahme-Spreewald districts and the City of Cottbus.

7. Monitoring of the Action Plan

The second phase will run from 1 June 2021 until 31 May 2023 and will concern the implementation of the actions and monitoring of the results. Adherence to action timescales and objectives is continually checked and effects on the instrument are consistently tracked.



This action plan is implemented and reviewed by the State of Brandenburg.

Surname, name Prof. Möller
Position Head of Renewable Energies, Energy Efficiency

Signature _____
Date 21 March 2022

Stamp