

**Transnational summary  
report of all partners  
renewable energy concepts**

**WP 2.4**

**Region Blekinge, PP3**



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## 1. Introduction

This report is part of the results from the BEA-APP (Baltic Energy Areas – A Planning Perspective), specifically work package 2, 4<sup>th</sup> part. The whole project aims to meet challenges in the transition to low carbon energy by strengthening the connections between energy planning and spatial planning.

## 2. Background

### 2.1. Work package 2.4

The aim of work package 2.4 in the BEA-APP project was to elaborate or revise one’s regional renewable energy (RE) concept, by integrating territorial dimensions of renewable energy planning in the concepts. The renewable energy concepts were, in the original BEA-APP application, identified as an important steering instrument for supporting spatial planning and energy planning processes. Participating regions have been PP1, PP2, PP3, PP5, PP6, PP7, PP9, PP10 and PP11 from the BEA-APP project. For full names of the participants, please see Appendix 1.

Since every partner faces their own different challenges depending on various preconditions, all of the renewable energy concepts differs from one another. The partners in work package 2.4 were asked to upload brief summaries in English of their renewable energy concepts which constitutes the basis of this report. Since it can be difficult to see the full picture from the English summaries, the partners in WP 2.4 were also asked to fill in a questionnaire (see more below in chapter 2.2 as well as appendix 1) to complement the summaries. The first question was therefore about *what* the partners would describe their concept as, with three options; an action programme including specific targets, a strategy, or a comprehensive action plan. The answers were the following:

Definition of the RE concept	PP1	PP2	PP3	PP5	PP6	PP7	PP9	PP10	PP11
									
Action programme including specific targets		x	x	x			x		
Strategy	x							x	x
Comprehensive action plan					x	x			

Table 1.

## 2.2. The questionnaire

In addition to the question concerning what the different renewable energy concepts can be described as, the questionnaire also included questions concerning the process of developing/revising one's concept, the political anchoring, experiences on what has been especially easy or difficult and so on. It also included a question where the partners had to fill in what different parts they have in their original RE concepts. The table below shows the different answers:

Included in partners RE concept	PP1 	PP2 	PP3 	PP5 	PP6 	PP7 	PP9 	PP10 	PP11 
Baseline/ Current situation:	x	x	x	x	x	x	x	x	x
Limitations:	x	x						x	
Focus areas, prioritised areas or themes	x	x	x	x	x	x	x		x
Recommendations	x	x				x	x	x	x
Strategies	x	x			x	x	x		x
Scenarios	x	x						x	x
Spatial Planning	x	x	x		x	x	x	x	x
Overall/comprehensive target	x	x	x	x	x	x	x		x
Sub-targets	x	x	x		x	x	x		x
Actions		x	x	x	x	x			x
Process description		x	x		x	x		x	
Implementation and follow-up	x	x	x		x	x			x

Table 2.

As one can see from this table, despite some alike answers, the renewable energy concepts differs a whole lot by their assorted contents. This can be explained by aspects such as various preconditions, planning systems, political processes and so on.

### **2.3. Main issues of the summary report**

This summary report has a few limitations to it. It should be stressed that the report is build on the English summaries of each participating region's renewable energy concept and the answers from the questionnaire that was sent out. For a deeper analysis, the original renewable energy concepts would have to be studied, but this has not been possible due to linguistic barriers. The English summaries does not have the same full content as the original concepts.

### 3. Overall aim

One of the aspects that was included in almost every renewable energy concept was an overall aim, specified to a single or a few sentences. This is the comprehensive objective that will point out the directions for all other content, such as subtargets, strategies and actions.

The overall aims are alike in the way that they are based on renewable energy and energy efficiency, but then differs somewhat. Skåne Association of Local Authorities (hereafter called PP2 SEA) and Region Blekinge (called PP3 Blekinge) has almost the exact same aim. PP2 SEA, Sweden, has for example defined the overall aim as reaching for a climate neutral and fossil fuel free county, by specifying objectives to 2030 for the following areas; reduction of greenhouse gases, reduction of green house gases from consumption, more efficient use of energy and use of renewable energy, and sustainable transports. PP3 Blekinge, Sweden, defines the overall objective as a climate neutral Sweden, meaning no net emissions of greenhouse gases, in 2045. This is the same aim that's adopted by the Swedish government, meaning that PP2 SEA, Sweden, most likely also drew from this when defining the aim in their renewable energy concept.

Other project partners have other definitions for their aims. Regional Council of Central Finland (called PP5 RCCF) aims at reducing greenhouse gas emissions with 40% by 2030. Tartu Regional Energy Agency, Estonia, (called PP6 TREA) describes how the Rõuge rural municipality as Covenant of Mayors Signatory pledged action to achieve a reduction of greenhouse gases with 20% by 2020 and to the adoption of a mitigation action plan. Lithuanian Energy Institute (called PP9 LEI) aims at increasing renewable energy to 45% by 2025, as well as expecting a further increase to 60% by 2030.

Regional Office for Spatial Planning of Westpomeranian Voivodeship, Poland, (PP10 ROSPWP) aims to determine the directions of development of renewable energy sources in the Central Functional Zone of the Westpomeranian Voivodeship with the addition of specific recommendations for individual municipalities. Ministry of Energy, Infrastructure and Digitalization Mecklenburg-Vorpommern Germany, (PP1 Min MV) describes that one aim of their concept is to cover 100% of all energy needs in the region by renewable energies in 2030 and to export renewable energies to other regions.

Roskilde University, Denmark, (PP11 RUC) has chosen to call their overall aim for a 'target setting' and concludes it to the following; 2030 there should be 55% renewable energy, 100% electricity generation and 90% of district heating on renewable energy sources.

Zemgale Planning Region, Latvia, (PP7 ZPR) has gone in a bit different direction and constructed two separate aims. On one hand they describe that the aim of their action plan is to summarise and analyze the current situation in the energy sector. On the other hand they also include a "strategic aim" for ZPR, which is to involve the increased share of renewable energy sources in produced heat amount in district heating systems and road transport fuels, as well as increased amount of electrical vehicles and their charging points as well as increased amount of consumed electricity in private sector. PP7 ZPR is therefore the only participating partner to include both an internal as well as an external aim for their renewable energy concept. '

#### 4. Baseline analysis

As one can read from the table in chapter 2.2 of this report, all of the participating regions filled in that their respective renewable energy concept has some kind of chapter for a baseline. Some of the participating regions also included a brief version of this in their English-written summaries.

PP1 Min MV, Germany, describes in their summary how the primary energy consumption in the region Vorpommern, at 2012, was around 37 PJ. In these measurements, households represented the largest consumption sector. In the region a total potential of renewable energy of about 60 PJ was determined. Currently, less than 20% of this potential is being used.

PP9 LEI, Lithuania, describes how existing legislation defined obligatory planning (general, special, district heating development, renewable energy source actions plans) are often not adjusted among themselves and are not compatible with general programs, have no general vision of the planned region. Municipalities can plan the activities of only municipal utilities, or investments into buildings, owned by municipalities. On the other hand, support schemes promote business investment not just in locations, where these should be used to meet public interests in the most efficient way. There is also lack of constructive public discussions (e.g. on actual pollution for residents living in the vicinity of biomass boiler-houses due to increased transportation and solid particles from generating sources, though most often no environment impact assessment (EIA) is performed; on impact of wind farms to local population, etc.). The most appropriate technologies for urban and rural areas are neglected.

As background material, PP5 RCCF, Finland, conducted a study about the realization of the climate- and energy strategy in the region. The result of this study showed that greenhouse gas emissions were reduced, comparing the situation at 2014 to average of years 2004 and 2006 in all the studied sectors. The studied sectors were energy, transport, agriculture and waste. Some projections were also done in the study, and it was concluded that most probably the greenhouse gas emission reduction targets were about to be met in all sectors except for transport. PP5 RCCF therefore drew the conclusion that the tools for emission reduction were mainly well suited to the climate policy in international, EU and national levels. Only more concrete tools were seen to be worth of adding. The biggest need of greenhouse gas emission reductions was seen to be on the sectors of transport and energy.

PP11 RUC, Denmark, expresses issues relating to their midterm target (more closely explained under chapter 6 "International, national, regional and local targets"). Changes in production and consumption must take place, and large-scale investments are needed as well as a common implementation effort, though based on experience this will be very different from municipality to municipality.

PP3 Blekinge, Sweden, also includes a thorough baseline in the English summary. In this, PP3 Blekinge shared different statistics connected to greenhouse gas emissions, complemented with various diagrams. For example, there is a description of how the emissions in Blekinge, year 2014, reached a total of 614 000 tonnes, which is equivalent to 4 tonnes per resident. The regional target for Blekinge 2020 is 3,5 tonnes per resident. Since 1990 there has been a 38% decline in greenhouse gas emissions in Blekinge, but the target for 2020 is 50%.

The baseline descriptions above were a few examples from the summaries, but as already mentioned all participating regions filled in that they have a baseline in their concept. Drawing

from the examples, one can draw the conclusion that all participating regions have similar problems with greenhouse gas emissions, dissonance with spatial planning and so on. It strengthens the basis that BEA-APP and other sustainable development-work relies on.

## 5. Process

### *The development process and involvement of public and private actors*

The partners were also asked about the process of developing their renewable energy concepts, what actors that has been involved and how the political processes have looked like.

Which actors that were involved varies from region to region. PP10 ROSPWP, Poland, for example had a active participation of local stakeholders, and the materials and results of the analyses were brought up and discussed at regular consultative meetings. During the process six such meetings were held. The meetings consisted of a part of the lecture, during which the results of the work stages and the workshop part were presented, and during which the stakeholders submitted their comments to the current stage of work. The attendants were mainly representatives of the local government, as well as non-governmental organizations, institutions related to the broadly understood electricity and heat market, owners of biogas plants and hydroelectric plants, representatives of heating plants, vocational schools and employees of State Forests. The results of the meetings had a significant impact on the provisions of the recommendations at both local and national level. Consultation meetings also played an educational role, raising the competences of local government representatives in the field of renewable energy sources.

PP7 ZPR, Latvia, has developed their concept within the BEA-APP project, by the hands of the administration of Zemgale Planning Region, through involvement of the specialists of local government, entrepreneurs, representatives of the non-governmental sector, in consultation with ministries and experts of energy sector, all as a working group. It has been developed in line with priorities (P) and actions (A) of the ZPR Development Program 2015-2020, where a priority can be “sustainable management and development of environment and natural resources” and the following actions “to promote more efficient management of the environment and natural resources of the region, including ensuring reduction of pollution, development of sustainable waste and water management systems and implementation of energy efficiency measures in local governments”.

PP9 LEI, Lithuania, describes their stakeholder involvement process for developing their renewable energy concept as a cooperation between municipalities, utilities and other business companies, aswell as groups of citizens. This also means a very broad participation line during the development process. In Finland, PP5 RCCF arranged workshops for experts of public sector in different stages of process. They presented program work in many meetings of policy-makers and other stakeholder groups (e.g. Youth Council of Central Finland), published the web pages with preliminary ideas to be commented by anyone (e.g. inhabitants, public and private sector) and through the web page they got more than 100 feedbacks. They then sent e-mails to all schools in Central Finland to tell them that they can use this web page in climate change education.

PP6 TREA, Estonia, describes how all major public and private stakeholders were involved in the stages of finalizing and upgrading the sustainable energy plan in 2016-2017, and PP1 Min MV,

Germany, describes how their renewable energy concept were developed by external experts using data and information from various sources.

For both Swedish project partners, PP2 SEA and PP3 Blekinge, the development of the renewable energy concepts were coordinated by the counties respective County Administrative Board (in Blekinge through the 'Forum of Climate Cooperation'/in Skåne through 'Climate Cooperation', which are both run by the county's respective County Administrative Board). In both counties the public and private sector were involved. In Skåne the development and writing of the strategy has been carried out in working groups for each area of actions with experts from different organisations within the public sector. Skåne also describes how the work process of setting objectives as well as dialogue and establishment with stakeholders mainly have been coordinated with continuous work and processes in the different organisations. Information and discussions about the renewable energy concept have also taken place at forums such as network meetings and conferences for companies in different sector, and there includes the private sector as well.

PP11 RUC, Denmark, has also anchored their renewable energy concept by discussing it with Region Zealand, the municipalities, utilities and local energy companies, including both public and private sector.

As one can see from these descriptions the involvement of the public and private sector differs somewhat, but is a strongly present aspect in every renewable energy concept development process.

#### *The political process and adoption*

The partners in WP 2.4 were also asked to describe the the political involvement and the political adoption of the concepts. This part varies quite a bit. In most regions some part of the processes have been politically adopted, if not the renewable energy concept itself. In PP9 LEI, Lithuania, the concept are "typically accepted by the municipalities", which does not have to mean that they are per se formally adopted but that the local actors in the region are willing to work in line with it. For PP6 TREA, Estonia, it seems that the political adoption was similiar, whereas the majority of upgraded energy actions were inserted to the municipal development plan, which was adopted in 2018 by the Rõuge municipality council. In PP7 ZPR, Latvia, the concept was approved in January 2019.

The targets and priorities set in the concept by PP11 RUC, Denmark, has been decided or supported by Danish politicians, which shows a sort of political anchorment. PP11 RUC does however express that the targets has to be developed, implemented and adapted on municipal level, related to energy resources and political priorities, which can and will create difficulties.

For PP2 SEA, Sweden, the renewable energy concept was, as described above, developed within the Climate Cooperation. The concept was adopted by each organisation within the forum; County Administrative Board, Region Skåne and Skåne Association of Local Authorities. The last two mentioned actors have political boards which have adopted the concept. In both Skåne and Blekinge the County Administrative Boards are the government's regional representatives, and since they have the formal task of developing the climate- and energy strategies they has also anchored the strategy within the organisations, however not with a political adoption since they don't have their own political boards.

For PP10 ROSPWP, Poland, the adoption was described as in steps. A letter of intent between the Marshal of the Westpomeranian Voivodeship and representatives of local authorities was signed in 2017, and a joint statement of regional and local authorities participating in the project was signed in 2018, on creating and supporting conditions conducive to the development of local renewable energy. For PP5 RCCF, Finland, the Regional Council of Central Finland was responsible for the climate change mitigation and adaptation programme. The programme was politically approved when beginning the work, and the final programme was presented to the regional board. The programme was aiming to activate the municipalities, and it was also presented to the municipality managers meeting. PP1 Min MV, Germany, describes their renewable energy concept as in line with political targets and strategies.

A conclusion that can be made from this is that the political adoption looks very different from region to region, and from country to country. Different targets, strategies and steps in the processes has been anchored and adopted politically, but the political adoption of the renewable energy concept in itself is almost non-existent.

#### *Lessons learned from the process*

The final questions regarding the process focused on experiences – if anything had been proven especially difficult, or if the partners were especially satisfied with anything. The most common answer seemed to circle around cooperation and dialogue. PP2 SEA, Sweden, shares their satisfaction with how their three regional organisations have worked together and how the Climate Cooperation platform has been a key to a fruitful work. PP3 Blekinge, also Sweden, seconds these statements, and also adds the satisfaction of having included international and national targets but that they set their regional targets with even higher demands. PP10 ROSPWP, Poland, is also especially satisfied with how dialogue and round table meetings made stakeholders identify with the concept, which led to a concept developed beyond local boundaries. On the other hand PP7 ZPR, Latvia, reports that the involvement of the municipalities was difficult, which means that these processes in all probability looks quite different.

PP5 RCCF, Finland, describes how the open and transparent dialogue throughout the process was seen as a base for further implementation of the programme. Open process, and webpages dedicated to the Climate Change Mitigation and Adaptation Programme were extremely useful when collecting feedback and especially best practices. Via this forum PP5 RCCF received a lot of feedback. The feedback and best practices were included in the programme. Various events and presentations of the programme were a good tool to activate various stakeholders. PP5 RCCF describes it as greatly important to find solutions for smaller municipalities, since they do not necessary have the resources to tackle the climate change mitigation and adaption work into their everyday work.

Other difficulties that were discovered are ones associated with natural gas in Lithuania, pointed out by PP9 LEI, which is more widely used for individual heating as well as difficulties in setting up wind turbines.

PP6 TREA, Estonia, describes how the rural municipality, after an amalgamation in 2017, continued to support renewables and energy transition. The municipality acted as pioneering body to launch an energy awareness campaign in cross-border mode with the Latvian municipalities, as a transnational cooperation between Estonia and Latvia. Otherwise, having a

CO2 intensive oil shale electricity/energy mix in Estonia, the economic growth and welfare means in many cases higher carbon trend.

## 6. International, national, regional and local targets

The partners were asked to fill in which of the following targets their renewable energy concept includes in relation to the documents' own objectives. The options consisted of the UN's Global Goals (also called Agenda 2030), The Paris Agreement, Europe 2020, various national, regional and local targets. The table below shows the following results:

Targets included in partners RE concept	PP1 	PP2 	PP3 	PP5 	PP6 	PP7 	PP9 	PP10 	PP11 
UN's Global Goals (also called Agenda 2030)		x	X				x	x	
The Paris Agreement (signed in 2015)		x	x	x			x	x	x
Europe 2020		x	x	x	x	x	x		x
National targets	x	x	x		x	x	x	x	x
Regional and local targets	x	x	x			x	x		x

Table 3.

As one can read from this table the answers are diversified. The options available in the questionnaire were based on the most common international targets as well as the assumption that every country has politically adopted national, regional and local targets. None of the options were filled in by every partner however, which shows the diverseness in the renewable energy concepts.

PP11 RUC, Denmark, have chosen to include regional targets and compare these with national targets, yet the regional targets are set higher. Their regional targets are divided into three; short-term, mid-term and long-term. All of these are focusing on the share of renewable energy in the region.

PP6 TREA, Estonia, did this as well, and describes how they also included targets adopted by the Covenant of Mayors, which is an European cooperation for local and regional authorities committed to energy efficiency and renewable energy issues.

Some participating partners also displayed their regional and local targets in their respective renewable energy concept. PP7 ZPR, Latvia, has concretised targets to 2025 with comparable values from 2016. For example they want to increase share of renewable energy sources in heat production for district heating from 72% to 81%.

## 7. Themes and target areas

Based on the targets in previous chapter, adopted on different levels, each participating region has developed their own themes and target areas. These have different names in the renewable energy concepts – targets, themed areas, prioritised areas, regional areas and so on – but are consisting of the same idea, which are guidelines for future actions and measures.

Following this, PP2 SEA, Sweden has for example defined nine prioritised areas which contains specified actions. These prioritised areas relate to subject such as renewable energy, fossil free transports and climate smart consumption. PP3 Blekinge, Sweden, has depicted it as “regional priorities“, in which they have reduced international and national targets to the regional level as well as prioritised what kind of measures are most urgent for the county, if they are to increase the pace of their adaption process and, in doing so, reach their targets.

PP11 RUC, Denmark, describes the necessary changes (energy production and consumption, large scale investments) connected to their major challenges as the main theme of the concept.

When updating their renewable energy concept, PP5 RCCF, Finland, decided on themes that are based on regions and regional stakeholders power, i.e. sectors outside the emission trade mechanism. The themes that were selected is therefore energy, transportation, production and also adaption since the last one was identified as important in the process. In addition to this, PP5 RCCF has also developed specific subtargets, two or three, for each theme with specific actions and identified best practises.

## 8. Strategies

The different aims, objectives, conditions and so on has also led to the development of various strategies. PP1 Min MV, Germany, has for example, in order to reach their overall aim of 100% renewable energy, their regional energy production strategy relying on a replacement of fossil fuels through renewable energies, on the use of technical innovation, on the expansion of the grid, on intelligent grid control as well as energy storage. In addition, they have also developed a biomass strategy as well as a biofuel concept as part of the renewable energy concept. The biomass strategy suggests that the biomass produced in the region should be processed to higher value products for export. The biofuel concept, in its turn, builds on the biomass strategy and suggests that biofuel production should be used in the regions to gain added value.

## 9. Recommendations

PP9 LEI, Lithuania, and PP10 ROSPWP, Poland, also included what they call “recommendations“ in their concepts. PP9 LEI has identified challenges connected to renewable energy planning and spatial planning, and by assessing experience of Lithuanian spatial planners, developed recommendations for for renewable energy source planning. These recommendations consists of such as evaluating main aspects for creating space for renewable energy – energy sources, technologies, space and so on.

PP10 ROSPWP in its turn describes the development of their recommendations as the middle part of a three-step process. First they made a “diagnosis“ of the energy sector, then they made the recommendations which are individual for the municipalities and relating to energy

planning, transition to low-carbon economy and improvement of fair quality. At last they developed the final version of the renewable energy concept.

Both this chapter, that is recommendations, and the one about scenarios are two aspects that weren't too common, but still can be comparable to some of the other aspects such as themes, target areas, prioritised areas and so on. This shows that even if the documents all look different, there is still some sort of common vision and ambitions for connecting renewable energy planning with spatial planning in the Baltic Sea Region.

## 10. Scenarios

One partner in BEA-APP, PP10 ROSWP (Poland), also included scenarios in their renewable energy concept. In the three-step process described in previous chapter (recommendations), PP10 ROSWP's last step focused on developing the concept, in which they also established two scenarios – one that is passive and one that is active.

When considering the passive scenario, PP10 ROSWP assumes that fossil fuels continue to dominate the country's energy policy, which in turn would weaken the importance of climate policy in the European Union. The implementation of such a scenario will result in minor increments over the following years in the scope of energy production from renewable energy sources. Following this, PP10 ROSWP continues to describe several effects and consequences for the region and the country.

The other scenario is described as an active one. In this, PP10 ROSWP theorises on what could happen if the climate and energy policy on the European level will take on a progressive character. The energy policy of Poland regarding renewable energy, especially prosumer approach, would in this scenario gain significant importance. That would create the possibility for the funding for a low carbon economy in the next EU financing period to remain at the current level. As in the passive scenario, PP10 ROSWP describes possible outcomes and effects of this perspective, which overall are significantly more positive than the ones for a passive scenario.

Working with scenarios like this is something that is done within spatial planning in Sweden (where two of the participating regions lie) as well, even though it is not called scenarios in the Swedish planning system. When developing comprehensive plans and detailed development plans, the conventional way to go is to include a "zero option" in the environmental impact assessment which is included in the plans. This is comparable to PP10 ROSWP's passive scenario, since this option is essentially an explanation of what would happen if none of the actions in the plans would be taken. The active scenario could in its turn be comparable with the actions and suggestions in the developed plans. However, this is not something that is done in the Swedish climate- and energy strategies, only within the plans for spatial planning. This shows an additional gap between energy planning and spatial planning – the documents don't follow the same structures.

## 11. Limitations

One of the participating regions also described some limitations in their written summary. This was PP2 SEA, Sweden, who expresses how their strategy focuses on decreasing emissions of greenhouse gases and an energy conversion with increased share of renewable energy from a regional perspective. The strategy doesn't handle effects of climate changes such as rising ocean levels, flooding, earth slips, heatwaves, etc. Actions for decreasing greenhouse gas emissions can have synergies with measures for adaptation to climate change and there are advantages of handling these areas in an integrated way in the society planning work.

PP2 SEA also describes, following the limitations above, that for regional guidance in the work for adaptation to climate change, one is referred to the Regional Action Plan for climate adaptation in Skåne, and that the County Administrative Board of Skåne is coordinating work in this area.

## 12. Spatial planning and planning criterias

One part of the BEA-APP project has been to develop a set of common spatial planning criterias, more specifically called 'integrated joint planning criterias' or 'general planning criterias'. This has been one of the outputs in work package 2.2. The purpose of this was to optimise spatial planning instruments to steer the sustainable growth of renewable energy in the participating regions. These general planning criterias have then been implemented in the partners renewable energy concepts. Since the legal and formal planning system varies from country to country and the concepts thus also varies, the implementation of the planning criterias has been executed in different ways.

The partners were therefore asked to describe how spatial planning and the general planning criterias have been integrated in their concepts. PP2 SEA, Sweden, for example has nine prioritised areas of action, one of which focuses on climate smart spatial planning and describes the connection between spatial planning and climate- and energy issues. There are also actions suggesting on how to improve the work with spatial planning in the region. PP1 Min MV, Germany, describes how spatial planning is a significant aspect in their renewable energy concept. In the detailed version of the concept, the steering of regional processes and regional land use for renewable energy is described. This is also briefly described in PP1 Min MV's English summary, where they describe studies and analyses about the required spatial structures for energy planning as well as describing the general planning criterias and how these will be tackled.

PP9 LEI, Lithuania, emphasizes great importance to investments in renewable energy-plants and it focuses on the spatial planning and the barriers associated with the spatial planning. However, PP9 LEI also describes how they may have underestimated the historical context and firmly anchored spatial planning, which they consider largely impedes the conversion of spatial planning and renewable energy, in its current form.

PP10 ROSWP, Poland, used spatial planning analysis as well as the planning criteria at the stage of estimating the potential and indicating recommendations on location of the renewable energy source installations. As part of the Climate Change Mitigation and Adaptation Strategy updating work PP5 RCCF, Finland, studied the effects of Central Finland regional plan to climate change from the aspects of bioeconomy and renewable energy.

For PP6 TREA, Estonia, district heating areas and systems were reassessed and validated considering shrinking population, renovation prospects and innovative renewable energy technologies. For PP3 Blekinge, Sweden, spatial planning is integrated in the action programme, which lies as an appendix to the renewable energy concept. Also, the general criteria for spatial planning and renewable energy is included in the English summary of PP3 Blekinges concept.

PP7 ZPR, Latvia, declares that there is no direct link between their renewable energy concept and spatial planning, since the main issue is that they need to integrate their concept both horizontally and vertically the the long-term strategies as well as their new Development Programme 2021-2027.

In the questionnaire, PP11 RUC, Denmark, makes it clear that they have not implemented the general planning criterias for two reasons. One is that they view the planning criterias as too general, the second is that they do not have any mandate for spatial planning. However, in their summary they do describe how they can play a positive role in several issues by supporting the municipal strategic planning as well as the spatial planning. This is much similar to the Swedish planning system, where the regions neither have any formal mandate for spatial planning but work with it by supporting the municipalities and allowing a regional perspective. This has also been highlighted by the Swedish participating regions throughout the BEA-APP project.

Given PP9 LEI's, Lithuania, comment on underestimating the historical context as well as firmly anchoring spatial planning, in addition to the fact that all renewable energy concepts are different and therefore also the implementation of the criterias, a conclusion can be drawn that the viewpoint on spatial planning have to be flexible and adjustable. The spatial planning system can not be fixed if necessities as renewable energy planning are going to be a part of it.

### 13. Implementation and follow-up

Some of the last questions were about about how the concepts of the participating regions will be implemented and followed-up. Regarding this, every partner has the intention of doing so even though the processes of implementation and follow-up varies. For PP2 SEA and PP3 Blekinge, Sweden, the follow-up process looks the same, given that both partners follow the same formal planning system. In both counties the respective climate- and energy strategy will be followed-up each year by the County Administrative Board since these are formally responsible for the strategies. The strategies will also be revised every fourth year, in line with new political terms.

PP1 Min MV, Germany, is already ongoing with implementation and follow-up. Since their renewable energy concept was developed 2015, implementation of the concept is being forced to change from fossil to renewable energy sources, to implement energy storage concepts, and to develop e-mobility as well as financial participation of the inhabitants in renewable energy projects. During the implementation phase of the renewable energy concept, several studies and measures were carried out. PP1 Min MV also underlined that the project BEA-APP brings the implementation to a new stage by conducting an analysis of the possibilities to link the requirements of the energy transition with the spatial planning of settlement development.

One thing that PP2 SEA, PP3 Blekinge, Sweden, and PP1 Min MV, Germany, thus have in common is that these processes are already ongoing. The same can be interpreted from PP5 RCCF's answer, who described that there is a specific plan for implementation and follow-up as part of the renewable energy concept. The fact that these four participating regions already have

ongoing processes in the matter, is most likely connected to the fact that these participating regions are also the ones that already had a developed renewable energy concept and choose to “just” revise these in BEA-APP.

Unlike the participating regions mentioned above, PP10 ROSPWP, Poland, developed their renewable energy concept within BEA-APP. This is interpreted as that PP10 ROSPWP has not had a renewable energy concept before the BEA-APP project, and therefore has not had the time to implement and follow-up the concept either. The same interpretation applies to PP6 TREA, Estonia, who has also developed their renewable energy concept within BEA-APP. PP10 ROSPWP describes that they do not have any legal instruments that would oblige municipalities to implement the concept. However, they do have a number of recommendations that will gradually affect the implementation of the concept. The implementation of the concept assumptions depends on the individual decision of municipalities. PP6 TREA marked out how the municipality government is looking forward to upgrade Sustainable Energy and Climate Action Plan (SECAP) with stronger commitments - 40% greenhouse gas-reduction target by 2030.

PP7 ZPR, Latvia, is planning to implement and follow-up their renewable energy concept by elaborating a monitoring system which they hope will help with the processes. PP11 RUC, Denmark, also plan to implement and follow-up their concept since their set targets are national political agreements.

PP10 ROSPWP, Poland, also stresses that the way the recommendations and proposals are implemented depends on the nationwide legal conditions and the current economic situation. The implementation of the renewable energy concept will result in the continuation of cooperation between local and regional authorities. This goes in line with the perception that the renewable energy concepts differ depending on different conditions, such as national structures, systems and processes.

## 14. Conclusion

Discussions and conclusions have been made throughout the whole report and this chapter is written to summarise those discussions. Given the arguments that have been presented and reflected on all through the report, it can be claimed that all renewable energy concepts are quite different from each other.

Every participating region faces their own different challenges and issues and has therefore chosen to develop a renewable energy concept in their own way. This can be explained by aspects such as dependence on various preconditions, planning systems as well as political processes. Different frameworks for economical and legal boundaries makes it difficult to compare countries and regions, and for those to work with some sort of common standard template.

Deriving from the fact that all participating regions vary a whole lot in which content they have chosen to include in their concepts (see table on page 4), they have also interpreted the different headlines and questions from the questionnaire differently. The only headline from this report that is interpreted in the same way by almost every participating region, is the one focusing on overall aims. Including an overall aim in an aspect that every participant has in common, and it shows that there is similar ambitions and interests in all of the participating regions. However

the level of the aims differs considerably, which also can be explained by the different existing prerequisites.

Some of the headlines from the report that has been interpreted differently are the ones about the development process. For example the involvement of the public and private sector differs between the participating regions. Still, it is a strongly present aspect in every development process for a renewable energy concept. It too supports the argument made above about similar ambitions.

The participating regions also applies differently to the various international, national as well as regional and local goals. Some participating regions have chosen to include own, or others, regional and local goals and some has chosen not to.

The implementation of the general planning criterias in the renewable energy concepts was up to each partner. Since the legal and formal planning system varies from country to country and the concept therefore also varies, the implementation of the planning criterias has been executed in different ways. Most participating regions has implemented the criterias in some way, while some has not been able to due to lack of mandates.

Even though the headlines have been interpreted differently, much of the content from the partners concepts can be comparable. An example given earlier was the chapters for recommendations and scenarios that was shown comparable with other aspects such as themed areas and target areas. This shows that even if the documents all looks different, there is still common visions and ambitions for connecting renewable energy planning with spatial planning in the Baltic Sea Region. By decomposing the content, one can see that what really separates the renewable energy concepts are what one chose to name the content, but the underlying ambitions are still very alike.

Drawing from the arguments made above, one can draw the conclusion that all participating regions have similar problems with greenhouse has emissions and dissonance with spatial planning. It strengthens the basis that BEA-APP and other work for sustainable development work relies on. But since the content still differs depending on what the participating regions chose to call it, it is possible to detect different mandates and political decisions behind it. A conclusion is that the political processes and adoptions looks very different in the participating regions and countries. Various targets, strategies and steps in the processes has been anchored and adopted politically, but the political adoption of the renewable energy concept in itself is almost non-existent.

Given that legal and economical boundaries, formal planning systems and political processes is unique in each country and therefore for the participating regions, how can common tools and actions still be developed for integrating renewable energy with spatial planning? PP9 LEI wrote a comment about not to underestimate the historical context and anchoring of spatial planning. For common tools and action to work, spatial planning in all formal national systems has to be flexible and adjustable. The spatial planning system can not be fixed if necessities as renewable energy planning are going to be a part of it.

When the participating regions were asked to share what they are most satisfied with in the process of developing their concepts, the most common answer seemed to circle around cooperation and dialogue. Several participating regions shared descriptions of cooperation, collaboration, dialogue and round table meetings and how this made stakeholders identify with

the renewable energy concept. It is therefore possible to deduce that methods for dialogue and stakeholder involvement are essential aspects for a successful process.

PP6 TREA, Estonia, also wrote the following comment:

“The rural energy plans should be really specific action plans addressing real issues in energy transition, supported by the conceptual framework provided by EU and the national government.”

A renewable energy concept can, as seen from this work package in the BEA-APP project, be developed in plenty of ways, depending on existing formal boundaries. But it should include concrete actions for real issues, supported by national and international frameworks that will ease a transnational cooperation. Issues connected to renewable energy and energy transition is something concerning actors on all levels, and should be dealt with in that way.

## Appendix 1: Project partners: Full names and shortenings of the participating regions

PP = Project partner.

PP1 Min MV = *Ministry of Energy, Infrastructure and Digitalization Mecklenburg-Vorpommern*. DE. 

PP2 SEA = *Skåne Association of Local Authorities*. SE. 

PP3 Blekinge = *Region Blekinge*. SE. 

PP5 RCCF = *Regional Council of Central Finland*. FI. 

PP6 TREA = *Tartu Regional Energy Agency*. EE. 

PP7 ZPR = *Zemgale Planning Region*. LV. 

PP9 LEI = *Lithuanian Energy Institute*. LT. 

PP10 ROSPWP = *Regional Office for Spatial Planning of Westpomeranian Voivodeship*. PL. 

PP11 RUC = *Roskilde University*. DK. 

## Appendix 2: The full questionnaire

- 1) Which of the following options best describe your RE concept? Only one option is possible to choose (please see table 1 for the different options).
- 2) Which of the following targets are taken into consideration in your RE concept? More than one option is possible to choose (please see table 3 for the different options).
- 3) Please specify the comprehensive/overall target of your RE concept in one or two sentences.
- 4) Which of the following aspects have you included in your RE concept? More than one option is possible to choose (please see table 2 for the different options).
- 5) Describe the process of developing your RE concept. Did you involve the public sector? Did you involve the business sector? Did you involve the inhabitants? Describe if and how.
- 6) Describe the political involvement during the process. Are the RE concepts politically adopted?
- 7) Regarding the process of developing your concept, is there anything you are especially satisfied with? Is there anything that has been difficult? Are there any other experiences you would like to share?
- 8) Describe how spatial planning has been integrated in your RE concept and/or in the process of developing it. Have you integrated the general planning criterias in your concept? If yes, specify how.
- 9) Will your RE concept be implemented and followed-up? If yes, specify how.
- 10) Anything other you like to comment or add regarding your RE concept.