State of Sustainable City Planning, implementation and key issues in the Baltic states

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Contents

Summary

Both Riga Technical University and Riga Energy Agency were responsible for this task and based upon their interviews and additional information received they delivered this report on the state of sustainable city planning, implementation and key issues in Baltic States.

The cities of Tallinn and Jekabpils have already developed a Sustainable Energy Action Plan (SEAP), and Tartu is developing one. All cities are working on improving their energy efficiency and developing renewable energies in all concerned sectors. However, a lot of barriers to effective implementation of plans exist. One of the most important issues is full stakeholder involvement; it is important that the ambitions translated into the cities' SEAPs are understood by all and some kind of ownership takes place.

In short, the following issues and needs for the companion cities and the learning network of Riga as a whole are:

- Stronger support in City Projects across all stakeholders in society, companies and public bodies;
- In the future the support for development of close cooperation among these stakeholders is required;
- Co-financing by European Structural Funds or current lack of financing in general;
- Raising interest and engagement of inhabitants (grassroots and bottom-up stakeholders);
- Training programs for learning more about SEAPs and the measures within it;

Apart from the financial barriers above also technical, social and legal barriers (higher policy level) exist to implement the SEAPs.

1 Context

The companions of Riga for the STEP-UP project are three cities of the Baltic States. Two of them are largest Estonian cities - **Tallinn** and **Tartu** and one of Latvia's large cities – **Jekabpils.** The Baltic States are located in north-central Europe, on the eastern edge of the Baltic Sea, and along the western border of the Russian Federation and Belarus. All of these cities have differences in size and population, but all of them share a history and now are aiming to be energy efficient and environmentally sustainable.

Figure 1. Map of the Baltic States

Tallinn is an old Hanseatic League city. It is very famous, known for its medieval historical centre, which is on the UNESCO World Heritage list. Tallinn is the capital and the largest city of the Republic of Estonia. It is situated on the northern coast of the country, on the shore of the Gulf of Finland, 80 km south of Helsinki (Finland) and east of Stockholm (Sweden) and west of Saint Petersburg (Russian Federation). Tallinn also has close relations with Riga, capital city of the Republic of Latvia, and Stockholm, capital city of Sweden.

Tartu is the second largest city of Estonia. Tartu, lying 185 kilometres south of Tallinn, is also the centre of Southern Estonia. The Emajõgi River, which connects the two largest lakes of Estonia, flows for the length of 10 kilometres within the city limits and adds colour to the city. In contrast to Estonia's political and financial capital Tallinn, Tartu is often considered the intellectual centre of the country, especially since the eldest and most renowned University in Estonia is located there. The city also houses the Supreme Court of Estonia and the Ministry of Education and Research. The city of Tartu is very interested in finding ideas and in drawing up initiatives to develop its capacity of fostering innovation and entrepreneurship.

Jekabpils is the eighth biggest city in Latvia according to 2009 data. The city is located in south-east region of Latvia. The area of the municipality is 2 553,5 ha, of which 448,7 ha are waters and 181,2 ha are forests. The Daugava River runs through the town, and the ancient valley, branches, and islands of the river are considered picturesque. The two historical parts of Jekabpils — Krustpils and the older part of Jekabpils — are connected by the bridge across the Daugava River.

City	Inhabitants	Area (km^2)	Density
Riga	706,413(2010)	304,05	2,331/km^2
Tallinn	416,144 (2012)	159,3	2,612/km^2
Tartu	98,480(2013)	38,8	2,538/km^2
Jekabpils	25,883(2013)	25,54	1,013/km^2

All 3 of the companion cities have committed their inputs to participating in the STEP UP programme and have been interviewed. The results of these interviews are summarized in this document and the interviews themselves are included in the report form D 4.3.

2 Planning – Sustainable Energy Action Plans

Two of the companion cities of Riga - Tallinn and Jekabpils - have signed the Covenant of Mayors (CoM), developed and published their Sustainable Energy Action Plans (SEAPs).

Tallinn city has a SEAP, but it is not yet revised or commented on by the CoM. Tallinn city values its SEAP highly. It has been developed in cooperation with Riga, Stockholm and Helsinki in the INTERREG IVA project "Covenant of Mayors in Baltic Capitals (COMBAT)". Next year the city plans to revise its current SEAP. The purpose is to make clearer what exactly needs to be done in the whole city, what should be done differently to achieve the goals set in the SEAP etc. The monitoring emission inventory (MEI) of CO_2 for 2011 is ongoing. After receiving the emission data Tallinn will continue to measure the progress towards the targets.

Tartu city does not have a SEAP as of now. It is under development at the moment and is planned to be finished in the near future based on "Development Strategy of City of Tartu 2030" and city aspirations to become more sustainable.

The Sustainable Energy Action Plan of Jekabpils city for 2010 – 2020 has been elaborated under the management of Zemgale Regional Energy Agency (ZREA) together with the project partner Kaunas Regional Energy Agency (KREA) in close cooperation with institutions of Jekabpils City Council as well as energy supply organizations, service companies and experts. This current plan is not intended to be revised at the present time.

All three companion cities are also focusing on other climate strategies. For example, Tallinn is considering a possibility to participate in the EU project PiCARD – Post Carbon Roadmap for European Cities.

Table 2 – State of Sustainable City Planning: SEAP and Climate strategies and associated CO_2 reduction targets

City	SEAP	2020 target (baseline)	Long term goal
Riga	SEAP 2010-2020 (submitted 2010)	44% emission reduction (1990)	N/A
Tallinn	SEAP 2010-2020 (on revision)	20% emission reduction (2007)	N/A

Tartu	"The Development Strategy of City of Tartu 2030" (SEAP under development)	20% emission reduction (2007)	N/A
Jekabpils	SEAP 2010-2020 (submitted 2010)	20% emission reduction (1995)	N/A

Long term visions

In some of the cities the link between SEAP and the long term vision will be developed in the near future. At the moment there are no city long term visions written for the period of time until 2050. Riga City is working on the creation of a long term strategic plan up until 2030 and the goals foresee impact on CO_2 emissions and other EU climate and energy targets.

A SEAP is the first step towards a broader and long term vision in a number of cities allowing cities amongst other goals to tackle CO_2 emissions. Jekabpils city is working on its City Development Plan up to 2030 following the decision of the City Council and under its supervision.

Stakeholder participation

All the three companion cities of Riga have been working closely with stakeholders. All the stakeholders were more or less actively involved in the SEAP developing process, submitting ideas and proposals from their perspective.

Some of the stakeholders were involved from the very beginning of drafting the SEAP, some stakeholders were involved after that, when the SEAP draft was ready for public consultation. A lot of discussions took place about the content of the particular SEAP in all cities, resulting in a number of proposals in order to improve the SEAP from consultancy companies, universities, regional energy agencies, energy companies as well as actors, inhabitants, non-governmental organizations – civil-society organizations, industrial companies etc.

Lists of received documents and involved persons are shown in Annex 1 and Annex 2.

3 Measures covered within the current SEAP (or other relevant plans)

Each city was able to provide the list of measures, leading to CO_2 emission reductions, improving overall energy efficiency of the city and introducing more renewable energy sources. Some of them are still not implemented, but will be introduced in the near future. As a general rule SEAPs or other relevant documents did not provide information on how a particular measure will contribute in CO_2 emission reductions and measures are not prioritized. However, Jekabpils municipality has submitted the estimated CO_2 emission reductions expressed in tons. So the SEAP of partner cities can be updated by editing information on CO_2 reduction.

Tallinn city has identified the key stakeholders which shall implement the energy saving measures. Unfortunately there is no exact plan for funding. Some future work should be done in order to create a plan for attracting funds. Almost every city defined that there is a lack of financing in sectorial measure implementation. Also low interest of local inhabitants is a problem because of limited solvency and limited access to EU or government co-funded building renovation programs. There is a need for information, training and awareness raising campaigns, in order to change the behaviour of the population. At the same time public support is necessary to facilitate the implementation of measures in various sectors, for instance, electric cars.

The implementation of energy projects has always been focused on energy savings and CO_2 emission reductions. Co-financing by the European Structural Funds is a big foothold and motivation for a large number of energy efficiency projects which have been implemented in various sectors across the Baltic States.

Companion cities' building environment can be characterized by following data:

- Additional thermal insulation for buildings (walls, roofs, basement, windows) built before 1990;
- Changing one pipe heating systems in buildings to the two pipes heating systems with thermostatic valves;
- New buildings shall fulfil new requirements according to EU Directives;
- Renovating 50 % of residential buildings that are connected to district heating.

Transport and mobility

- Tallinn has free public transport. This is a great step to solve traffic jam problems in the city and to reduce the use of private cars;
- Bicycle roads' design and construction;
- Using biofuels;
- Promotion of "energy efficient" driving, travel by foot and/or bicycle;
- Promotion of "car-pooling", public transport etc.;
- Electric cars.

Renewable energy production, energy from the waste streams and energy distribution

- Biomass (Wooden chips) CHP Plant;
- Waste incineration CHP Plant;
- Changing old mercury lamps to sodium ones and introducing smart lighting in the public lighting sector;
- Renovating the district heating network, replacing old pipes with new ones;
- Promoting the use of renewable energy for heating and hot water preparation;
- Biogas production at the local water supply company premises.

4 Supporting needs related to SEAP, sustainable city planning and project implementation

All the information described above shows that the cities are aiming to use renewable energy sources instead of fossil fuels and to take care of the environment. However, it is rather difficult to overcome the environmental issues and to implement the measures described in the SEAPs in the most effective way. There are a lot of barriers that should be removed in order to implement all the measures presented in the SEAPs and to develop long-term development strategies.

One of the most significant tasks is to involve as many stakeholders as possible. In order to fulfil this task, particular targets should be defined. It is important that the SEAP is shown and understood by all key players involved.

Some of the supporting needs and implementation difficulties related to SEAPs are defined below:

- Stronger support in City Projects (cross-sector) is needed;
- In the future, support for the development of close cross-sector cooperation is required;
- Co-financing by European Structural Funds;
- Raising interest of inhabitants;
- Training programs for learning more about SEAPs and the measures within it;
- More active engagement of citizens and stakeholders.

Barriers for implementation:

- Lack of financing;
- Technical and social barriers;
- Lack of governmental (legal) support.

Annex 1. Information on interviews

City	Interviewer	Interviewee	Date
Tallinn	Anatolijs Borodinecs Anatolijs.borodinecs@rtu.lv Riga Technical University	Villu Pella villu.pella@tallinnea.ee Head of Tallinn Energy Agency	28.10.2013-31.10.2013
Jekabpils	Aleksandrs Zajacs Aleksandrs.zajacs@rtu.lv Riga Technical University	Irēna Pastare Development and Investment Division Project coordinator Jēkabpils Municipality	28.10.2014
Tartu	Jurgis Zemitis Jurgis.zemitis@rtu.lv Riga Technical University	Martin Kikas martin.kikas@trea.ee Head of Tartu Energy Agency	28.10.2013-31.10.2013

Annex 2. Information on documents

City	Title/ Short description; Link	Document references
Tallinn	**"Energy Efficiency Action Plan for Tallinn"** The main objective of the Action Plan is to reduce energy consumption and greenhouse gas emissions, and to increase the renewable energy share. Available in English http://www.tallinn.ee/g4128s55841 1	1. Tallinn in numbers. Statistics Annual Data Collection. Tallinn 2007. 2. Tallinn. 2007 Annual Report 3. Strategy „Tallinn 2025" 4. Development Plan of Tallinn 2009–2027 5. Development Plan of Tallinn outdoor lighting 2006–2015] 6. Road lighting standards of the city of Tallinn 7. Development Plan of Tallinn public water and sewerage 2004–2015 8. AS Tallinna Vesi Annual Records 2007 9. Transport Development Plan 2006-2013 10. Development trends of traffic in Tallinn 2005–2014 11. Development strategy for Tallinn's mobility environment 2007–2035 12. Development trends of Tallinn highway network 2005-2014 13. Annual Reports of the Estonian Motor Vehicle Registration Centre 2007 14. Tallinn waste management plan 2006–2011 15. Development Plan of outside environmental noise reduction in Tallinn 16. Tallinn Tree-Planting Development Programme (the City Council regulation nr 17 as of March 3, 2005) 17. Tallinn General Planning http://tlpa.tallinn.ee/?id=9 18. Long-term Energy Sector Development for Tallinn city (2002–2017); Tallinn University of Technology 2002. 19. National Development Plan of the Energy Sector until 2020 20. Estonian Development Plan of the Electricity Sector until 2018 21. Energy Conservation Target Programme 2007–2013 22. Estonian Energy Industry in numbers 2007 23. Covenant of Mayors, EU 2007 24. Action plan for energy efficiency 2007–2012 25. Directive 2002/91/EC on the Energy performance of

		buildings 26. Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market 27. Directive 2003/30/EC on the promotion of the use of biofuels or other renewable fuels for transport **28.** Directive 2004/8/EC on the promotion of co-generation based heat and electricity production 29. Directive 2006/32/EC on energy end-use efficiency 30. Directive 2009/33/EC on the promotion of clean and energy-efficient road transport vehicles 31. Electricity market law; adopted as of 11.02.2003; published as of RT I 2003, 25, 153 32. District heating network law; adopted as of 11. 02. 2003; published as of RT I 2003, 25, 154 33. Waste management Act; adopted as of 24.01.2004; published as of RT I 2004, 9, 52 34. Packaging Act; adopted as of 21.04.2004; published as of RT I 2004, 41, 287 35. The Environmental Supervision Act; adopted as of 06.06.2001; published as of RT I 2001, 56, 337 36. The Environment Charges Act; adopted as of 07.12.2005; published as of RT I 2002, 67, 512 115 37. The Building Act, adopted as of 15.05.2002; published as of RT I 2002, 47, 297 38. The National waste management plan 2008–2013 39. Requirements for efficient co-generation; MKM 03.05.2007, regulation nr 30 40. Energy performance certificate and the procedure for issuance; MKM 17.12.2008, regulation nr 107 41. The Energy Efficiency of Equipment Act 42. Minimum energy efficiency requirements; the regulation of the Government of the Republic of Estonia as of 20.12.2007 43. The wider use of renewable sources of energy to generate energy; the regulation nr 14 of the Ministry of Environment as of 24.03.2009 44. Sustainable Energy Scenarios; Energy Perspectives for the Baltic Sea Region 45. Statistical Department http://www.stat.ee/ 46. Tallinna Küte AS http://www.soojus.ee/kyte/index.php

		47. Eraküte AS http://www.erakyte.ee/www/ 48. Fortum Termest AS http://www.fortumtermest.ee/ 49. OÜ Iru Power Plant http://www.iruenergia.ee/ 50. OÜ Tallinn Power Plant (Väo) http://www.elektrijaam.ee/ 51. Tallinn Bus Company Ltd. http://www.tak.ee/ 52. Tallinn Harbour Ltd. http://www.ts.ee/ 53. Tallinna Prügila AS http://www.landfill.ee/ 54. Nõmme-Harku pathway http://www.sportkeskus.ee/index.php?page=70 55. Pirita pathway http://www.piritaspordikeskus.ee/?page_id=17 56. Construction condition of large-panel apartment buildings in the housing stock of Estonia and their forecast lifespan, Tallinn University of Technology, 2009 57. Renewable energy sources and their usage in Tallinn, Tallinn University of Technology, 2007 58. Internal condition inspection of the schools in Tallinn, Tallinn University of Technology, 2007 59. Transport infrastructure and land use planning, Tiit Metsvahi, Tallinn, Tallinn University of Technology 116 60. Tallinn district heating network areas; regulation nr 19 of Tallinn City Council as of May 27, 2004 61. Tallinn's CO2 Gas Emissions Inventory, ÅF-Estivo, Tallinn 2009 62. The green book on energy efficiency, or doing more with less. The European Commission 2005. 63. SNiP II-3-79 “Heat engineering.” 64. Fiscal incentives and other control instruments for creating a sustainable energy system on a local level 65. Summary Results of Interviews on energy efficiency in building. Ahto Oja 2008 66. Overcoming non-technical barriers in the building sector. Ahto Oja 2008 67. Smart energy-Europe; Catalogue of the best energy solutions. 68. Report on possibilities for more sustainable energy use in Tallinn 69. Survey of sustainable development 2006; City report; Union of the Baltic Cities 70. Sustainable energy partnerships and energy action plans; Tallinn, Dublin, Malmö

		71. Sustainable Estonia 21; Estonian National Strategy on Sustainable Development.
Jekabpils	„Jēkabpils City Sustainable Energy Action Plan For years 2010 – 2020 ” Sustainable Energy Action Plan embraces initial overview of CO2 emissions and prognosis, actions and measures for reduction of energy consumption and development of renewable energy resources in administrative territory of Jekabpils City. Available in English http://www.zrea.lv/lv/energoefektivitate/jekabpils_pilsetas_ilgtspejigas_energetikas_ricibas_plans/	1. European commission. Institute for Energy. Institute for Environment and Sustainability. Guidebook „How to develop a Sustainable Energy Action plan (SEAP)”/ES; 2. European commission. Institute for Energy. Institute for Environment and Sustainability. Guidebook „How to develop a Sustainable Energy Action plan (SEAP)” Part I. The SEAP process, step-by-step towards the -20% target by 2020. (working version) / ES; 3. European commission. Institute for Energy. Institute for Environment and Sustainability. Guidebook „How to develop a Sustainable Energy Action plan (SEAP)” Part II. Baseline emission inventory./ EC, 2010; 4. Latvia Agency of Environment, Geology and Meteorology. Calculation methodology of CO2 emissions from the stationary burning of fuel and from industrial processes../ http://www.lvgma.gov.lv. 5. Statistical data– http://www.csb.gov.lv; 6. Development Programme of Zemgale Planning Region for the years 2008- 2014 7. Order of the LR Cabinet of Ministers No. 266 from 20th May 2008 Summary of the Latvia Republic First Action Plan on Energy Efficiency for the Years 2008 - 2010 8. Order of the LR Cabinet of Ministers No. 571 from 1st August 2006 General Directions of Energy Development for the Years 2007 – 2016 9. Latvia University of Agriculture, Housing Initiative for Eastern Europe (IWO e.v) Research “Concept for attraction of financing for reduction of heating energy consumption” 2010.
Tartu	“Development Strategy of City of Tartu 2030” The compilation of the Tartu City Transport Development Plan 2012-2020 was initiated in the framework of the project “Baltic Biogas Bus”, and partially financed by the Baltic Sea Region Program of the European Regional Development Fund. Due to the city of Tartu’s objectives of transforming public transport more economical and more economically friendlier, the city has joined the project Baltic Biogas Bus. Available in English	1. Aalborg+10. 2. Aro, K. 2006. “Evaluation of their Living Environment of the Inhabitants of Tartu. The Environmental 3. Behaviour, Beliefs and Attitudes of the People of Tartu. A Report of the Survey “People of Tartu and 4. the Environment 2006”” (“Tartlaste hinnang oma elukeskkonnale. Tartlaste keskkonnaalane 5. käitumine, arvamused ja hoiakud 2006 Küsitluse “Tartlane ja keskkond 2006” aruanne.”). 6. Emajõe Riverland Foundation. 2006. “Feasibility and Cost-Benefit Analysis of the Chain of Docking 7. Facilities on Emajõgi” (“Emajõe sildumisrajatiste keti teostatavus-tasuvusanalüüs”). 8. Emajõe Riverland Foundation. 2001. “Stage I of the Spatial Development Corridor of Emajõgi 9. Riverland” (“Emajõe jõeriigi ruumilise arengu koridor

	http://www.tartu.ee/data2/lmo/bbb_TransportPlan.pdf	I etapp"). 10. Emajõe Riverland Foundation. "The evaluation (analysis) of the tourism potential of docking and 11. landing locations brought out in "Emajõgi Riverland Development Strategy until 2012"" ("Emajõe 12. Jõeriigi arengustrateegia aastani 2012" väljatoodud sildumis- randumiskohtade turismipotentsiaali 13. hindamine (analüüs)"). 14. European Commission. "White Paper. Roadmap to a Single European Transport Area – Towards a 15. Competitive and resource efficient transport system". [COM(2011)144]. 16. European Commission. "Action Plan on Urban Mobility". [COM(2009)490]. 17. European Commission. "Towards a new culture for urban mobility". [COM(2007)551]. 18. Hendrikson & Ko OÜ. 2006. "Development Scheme of Tartu City Cycle Traffic" ("Tartu linna 19. jalgrattaliikluse arenguskeem"). 20. Hoffmann, M.T., Jüriado, R., Ojala, L. 2006. "Preliminary feasibility study of scheduled passenger 21. services at Tartu Ülenurme Airport, Estonia". 22. Jüssi, M. 2004. "Sustainable Transport Policy. Instructional Materials for Compilers of Plans and 23. Development Plans" ("Säästev Transpordipoliitika. Juhendmaterjal arengukavade ja planeeringute 24. koostajatele"). 25. Ministry of Environmental Affairs. "Estonian Environmental Strategy until 2030". 26. Ministry of Economic Affairs and Communications. "Development Plan of Estonian Public Transport 27. 2006-2010". 28. Ministry of Economic Affairs and Communications. "Transport Development Plan 2007–2013". 29. Metsvahi, T. 2002. "Survey of Traffic Objects Planned with the Tartu City Comprehensive Plan, Stage 30. I" ("Tartu linna üldplaneeringuga kavandatud liiklusobjektide ülevaatus, I Etapp"). 31. Mõõtmisgrupp. 2010. "Measurements of Vibration in the City of Tartu in 2010" ("Vibratsiooni 32. mõõtmised Tartu linnas 2010. aastal"). 33. www.balticbiogasbus.eu 34. 83 35. Road Administration. "Estonian National Traffic

Safety Program for the Years 2003–2015”.

36. SEBE AS. 2010. “Bus Lines of the City of Tartu” (“Tartu linna bussiliinid”).

37. Stratum OÜ. 2010. “Public Transport Survey for the Project “Development of Public Transport in the

38. City of Tartu and the neighbouring Local Governments”” (“Ühistranspordiuuring projektile “Tartu

39. linna ja lähiomavalitsuste ühistranspordi arendamine””).

40. Tallinn Technical University. Road Institute. 2010. “Car Kilometrage in Estonia in 2009” (“Autopargi

41. läbisõit Eestis 2009. aastal”).

42. Tartu City Government. “Development Strategy Tartu 2030”.

43. Tartu City Government. “Indicator nr A.4. Access to main local services and public green areas”

44. (“Indikaator nr A.4. Juurdepääs kohalikele põhiteenustele ja avalikele haljasaladele”).

45. Tartu City Government. “Tartu Agenda 21”.

46. Tartu City Government. “Tartu and the Inhabitants of Tartu 2008” (“Tartu ja Tartlased 2008”).

47. Tartu City Government. “Tartu City Development Plan for the Years 2007–2013”.

48. Tartu City Government. “Tartu City Entrepreneurship Development Plan 2007–2013”.

49. Tartu City Government. “Tartu City Environmental Development Plan 2006–2013”.

50. Tartu City Government. “Tartu City Traffic Safety Program 2011–2015”.

51. Tartu City Government. “Tartu City Social Welfare Development Plan 2007–2012”.

52. Tartu City Government. “Tartu City Tourism Development Plan 2008–2013”.

53. Tartu City Government. “Tartu City Comprehensive Plan”.

54. Tartu County Government. “Tartu County Development Strategy until 2014”.

55. Tartu Keskkonnauuringud OÜ. 2009. “Measurements of the pollutant NO2 in the external air by

56. diffusion tubes in the I, II, III and IV quarters of 2010” (“Välisõhu saasteaine NO2 mõõdistused

57. difusioontorudega 2009.a. I, II, III ja IV kvartalis”).

58. Tartu Tervisekaitsetalitus. 2003. “Measurements of the Railway Noise in the City of Tartu” (“Raudtee

		59. müra mõõtmine Tartu linnas”). 60. Teede Tehnokeskus AS. 2006. “The Condition of Pavements of the Streets and Roads of the City of 61. Tartu” (“Tartu linna teede ja tänavate teekatte seisukord 2006”). 62. Terviseameti Tartu labor. 2010. “Measurements of the level of traffic noise in the City of Tartu in 63. 2010” (“Liiklusmüra taseme mõõtmised Tartu linnas 2010. aastal”). 64. www.balticbiogasbus.eu 65. Valikor Konsult OÜ. “Survey of Movements of the Inhabitants of the City of Tarty and the 66. Neighbouring Local Governments” (“Tartu linna ja lähiomavalitsuste elanike liikumisuuring”).