

The European Commission's  
**INTELLIGENT CITIES  
CHALLENGE**

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# Pori, Finland - Intelligent City Transformation Overview

ICC Final Deliverable





# Executive summary

The City of Pori has a strong industrial background in wood processing, mechanical engineering, chemical engineering, metal processing, offshore construction and automation. Pori is also an environmentally friendly city, where **sustainable development** has long been an important objective.

In its new City (Pori 2030) Strategy, Pori seeks growth and competitiveness by focusing on **Industrial Circular Economy**. The city is actively **mobilising green investments** by offering attractive locations & infrastructure for industrial investors and **ensuring the availability of competent workforce**.

In this strategy definition process, ICC has delivered an important input, by engaging a **vast number large and small companies, financiers, education institutions and public stakeholders**. The process has provided the City with a shared view on **Green Economy Objectives**, with concrete set of actions, actors and deliverables, which are integrated in the City Strategy. **Based on the ICC vision, Pori is an intelligent, sustainably growing and creatively renewing City in 2030 .**

The outcomes of ICC strategy have been actively utilized by the City Marketing and Communication unit. Pori is already successfully attracting significant industrial investments, such as those made by the Australian Critical Metals and the Finnish BioEnergo.



# Mayor Foreword

*Sustainable development has been an important element in the city strategy of Pori already since the early 1980s.*

*The Pori ICC strategy raises our ambition by emphasising green environment for people to live and work, and attractiveness for new green investments.*

Aino-Maija Luukkonen  
Mayor of the City of Pori  
ICC Geographic Chapter Meeting - Nordics, 28.4.2022



# The city of Pori pursued an EU-supported transformation over four main stages, and this document details that journey by these sections

Overview to the city's journey and structure of this document



## 1 Preparation & assessment

5 months:  
September 2020 – January 2021



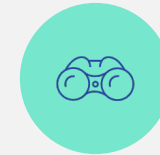
## 2 Ambition & roadmap

3 months:  
February 2021 – April 2021



## 3 Implementation

15 months  
May 2021 – July 2022



## 4 Review & way forward

2 months  
August 2022 – September 2022

*Reported as  
one section*

### Summary

Pori has a strong industrial background. In the road for sustainability and circular economy, Pori has identified several challenges. These include e.g., attracting more investment and ensuring competent workforce. These challenges have been addressed in the ICC strategy aiming for economic growth. The excellent experience from the DCC project supports the City in the ICC work.

Based on the large stakeholder collaboration, the ICC vision as well as five thematic areas (ambition statements) were selected in order to boost Industrial Circular Economy and green investments in the Pori area. The roadmap includes 15 solutions.

The first green investments have been confirmed in the Pori area: Critical Metals (vanadium recovery plan) and BioEnergo (bio-gas plant). The steps towards implementation phase has been proceeded in all thematic areas/ambition statements.

The implementation organization has been identified and put in place. Political decision-making and prioritizing of ambitions statements will be done by the City Council in 10/2022. The implementation process will be proceeded.

Monitoring of the progress will be done by the City of Pori. ICC will be integrated to the monitoring of the Pori 2030 strategy. Success of ICC will be evaluated after the city strategy period.



Section

1

September 2020 to January  
2021

# Pori, Finland - Preparation and assessment

ICC transformation



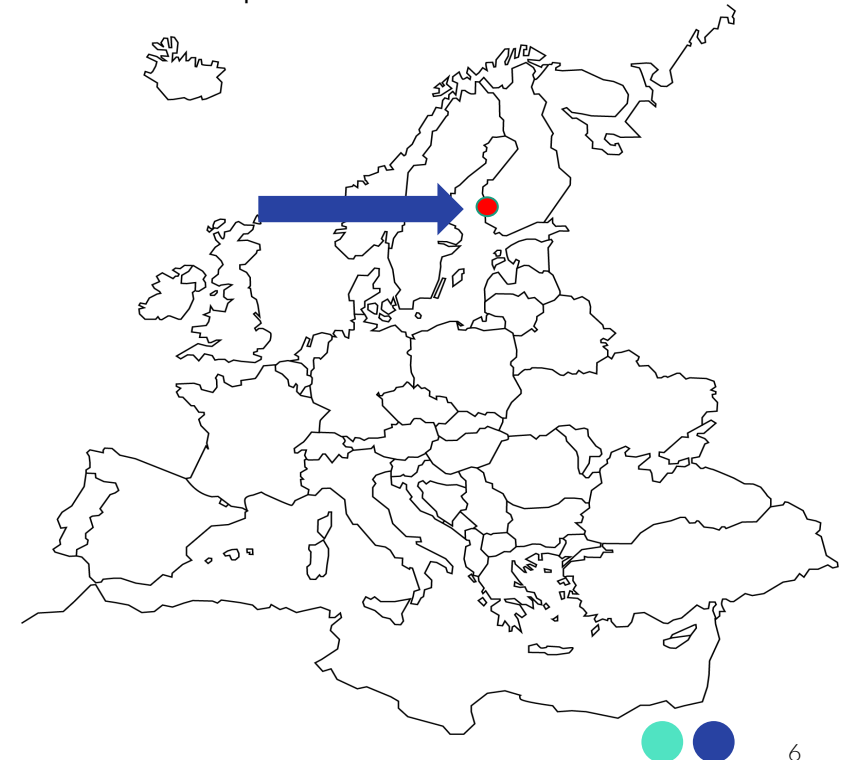
# 1 Introduction of Pori

Pori is the 10<sup>th</sup> largest city in the west coast of Finland with 85 000 inhabitants. The city has a strong industrial background with advanced automation, technology and metal processing. Key sectors also include energy and circular economy as well as automation, robotics and artificial intelligence.

**Industrial Circular Economy (ICE) / Green Growth Economy** is one of the main development themes in the Pori Area Program 2018 – 2021 followed by Pori 2030 Strategy with the reflections from the ICC Vision.

## Advantages of Pori:


- Enabling infra: extensive plot of land, ports, railways, highways and airport. Industrial commodities: renewable energy (wind, biogas )
- Growth attitude: to do things what the others are not doing. To have the first offshore wind park for arctic conditions.
- 6000 companies in total in the area (large and SMEs)







## 2 City Needs: State of the city overview

Significance of insight to what we want to do on the ICC

 Of critical importance to ICC journey and we should be working to change

 Of importance to ICC journey, and we should act to change this along the journey as opportunity presents

 Contextually relevant, but not major point of attention in ICC and unlikely to be impacted on the journey

### The state of Pori today

### Key insights from city performance analysis

### Industrial Circular Economy/ Green Economy

#### Higher performance observed

**1** Strong commitment to developing industrial circular economy by the political leadership of the city, as well as by the local industry.

**2** Major industrial development projects and investments strongly linked to circular economy (Port of Pori, Vanadium refinery).


**3** City's engagement in major development projects related to Industrial Circular Economy (Peitto Circular Economy Park, etc.).

**4** Dynamic education sector with good competence and research projects on circular economy (Key actors UCPori, SAMK, WinNova etc.).


**5** Enabling infrastructure: extensive plot of land, ports, railways, highways and airport. Industrial commodities: renewable energy (wind, biogas ).

#### Lower performance observed

**1** Difficulty to attract specific / high talents related to industrial circular economy (Attracting talent workforce is a national challenge in Finland. Based on Finnish government programme 2019-2023, the country is aiming to get 30,000 skilled talents in Finland). 

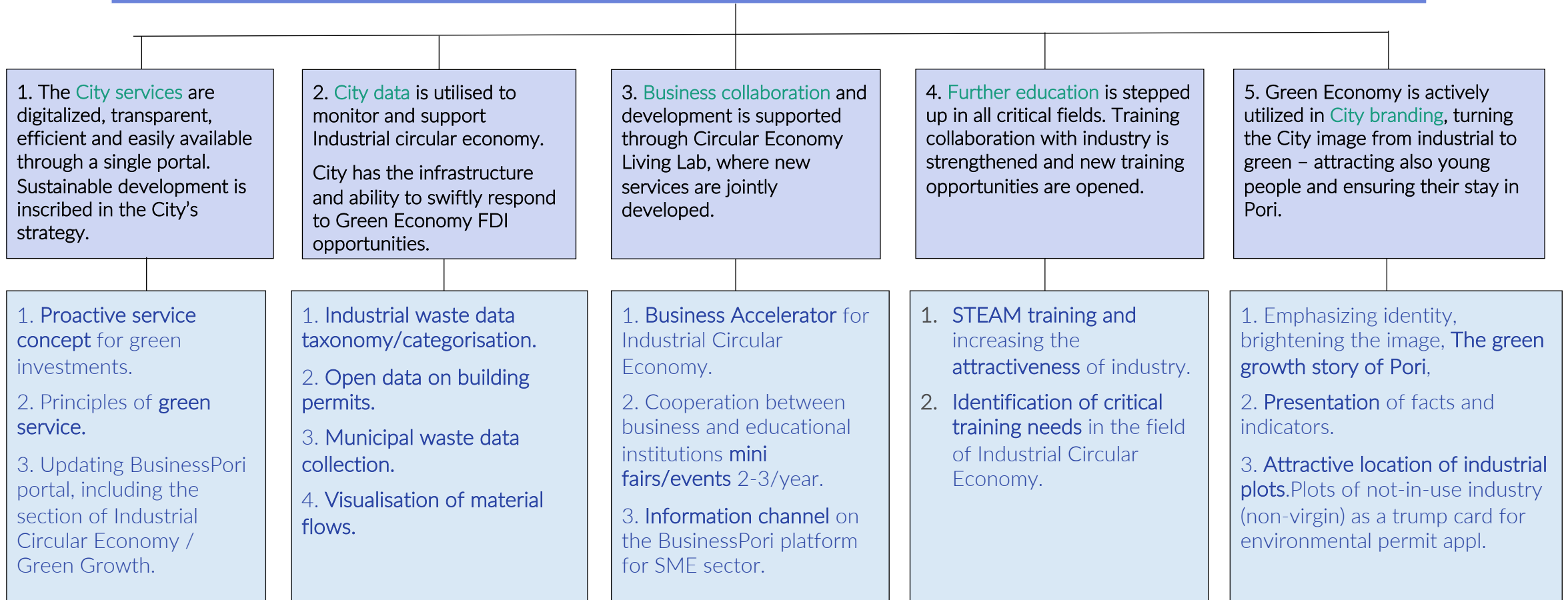
**2** Insufficient (further) education offering related to new green business areas, or education is not utilized optimally. 

**3** Insufficient R&D investments & research opportunities in the area (despite of several RDI-programs). The RDI rate is lower than average in Finland. 

**4** Insufficient collaboration between businesses and services for Industrial Circular Economy. 

# ICC strategy: Vision and ambition statements

In 2030 Pori is an intelligent, sustainably growing and creatively renewing city. A recognized forerunner in Industrial Circular Economy. Pori offers an attractive place to live, work and operate, also for the talented individuals and advanced businesses.





# Section 2

## Pori, Finland - Ambition and roadmap

ICC Transformation

February 2021 to May 2021

# Rationale to Roadmap

Background, why the Pori ICC vision was built:

- Sustainable development has had a big role in the City strategy, mentioned the first time in the strategy in early 1980s.
- The City needs growth. The population rate of the City is diminishing and activities to boost the competitiveness of Pori are essential. The City has prioritised investments in Industrial Circular Economy (ICE) and aims for the growth based on a strong ICE ecosystem in the region.
- According to the ICC vision, Pori will be recognized as a forerunner in Industrial Circular Economy for international and national business partners by 2030.

Critical areas on the road:

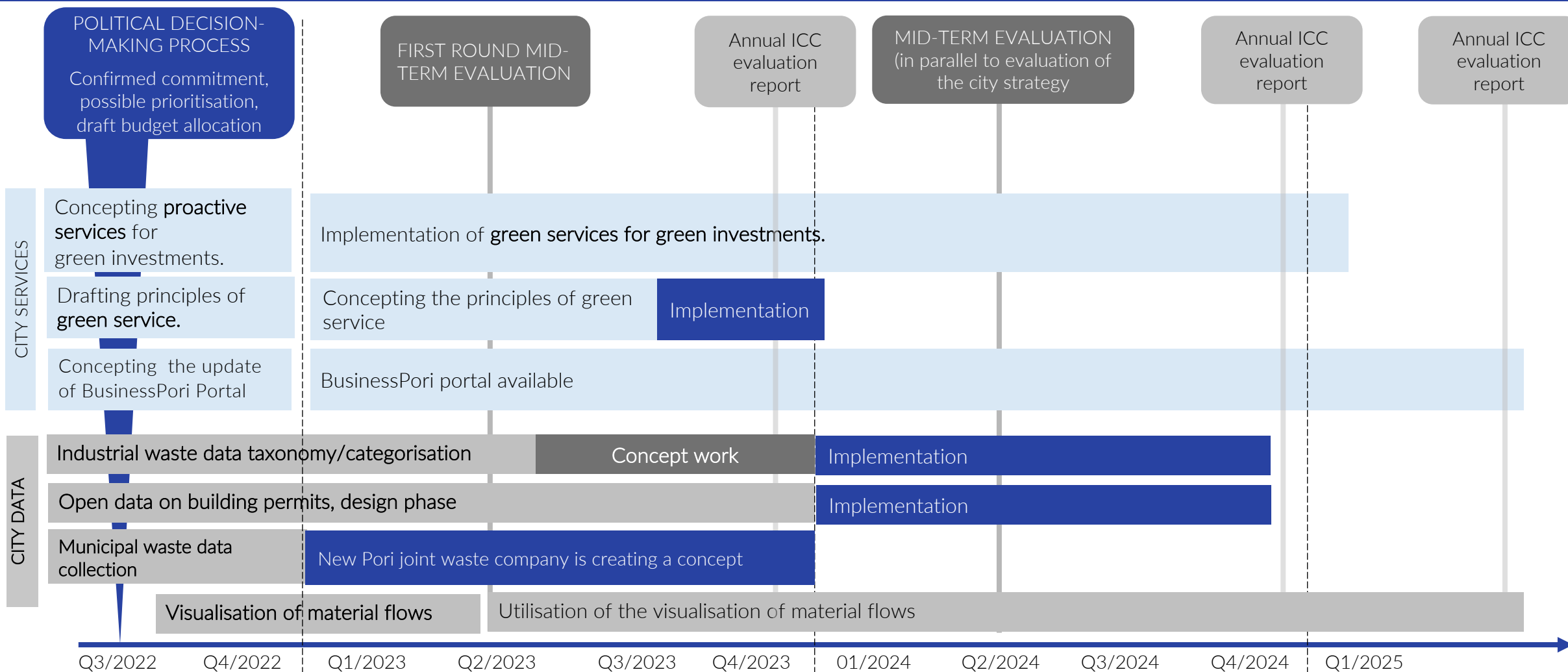
- Relevant and sufficient personnel resources in the City and its Divisions. A need for Green Economy Manager –position in the city organisation (person responsible for the implementation work)?
- Successful development of city services and processes, e.g. intensifying permit processes (plot, building etc.) and schedules.
- Sufficient and successful communication and market activities in order to raise the awareness of the City.

The main priorities in the roadmap:

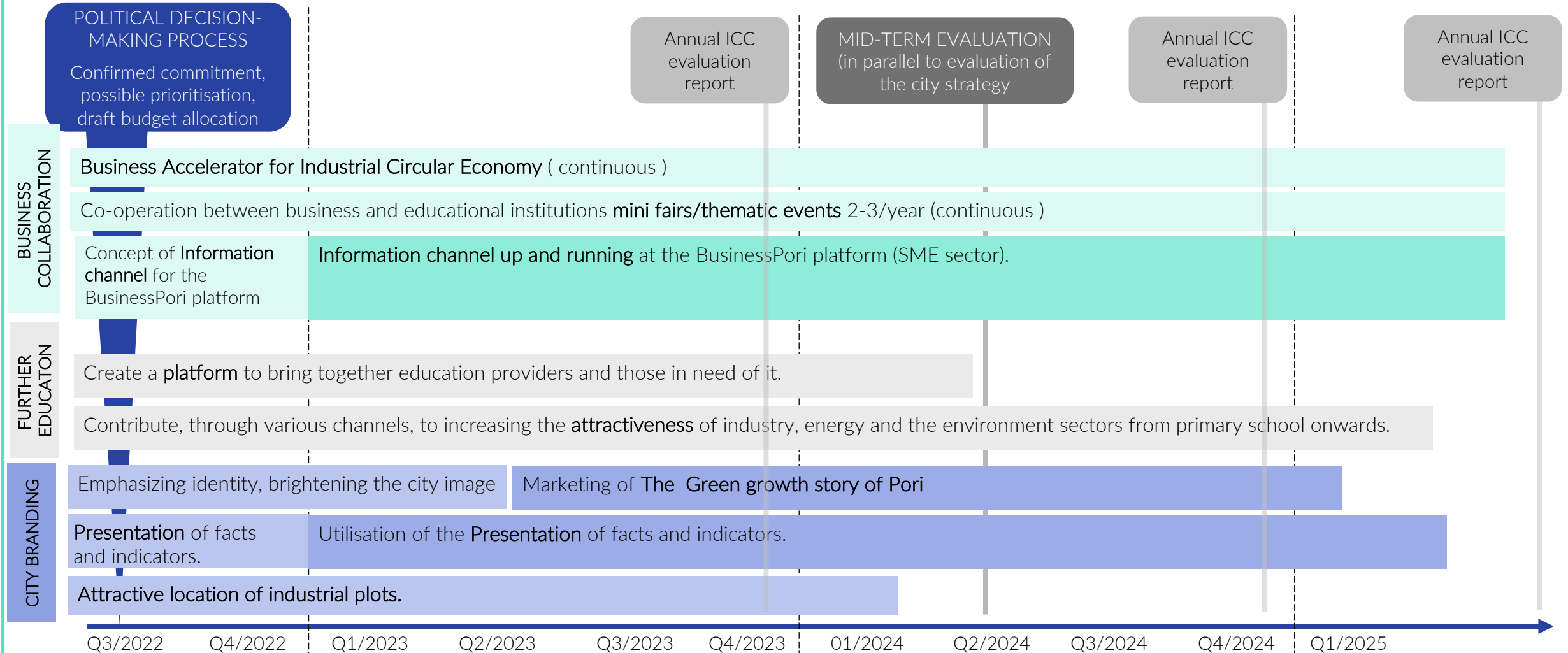
- Economic Growth, main focus for new Industrial Circular Economy investments.
- Long term reskilling and upskilling, supporting talented workforce for new green business investments.



# Roadmap Timeline 1/2



# Roadmap Timeline 2/2





# CITY SERVICES: With its developed city services, it will be easy to invest more in Pori.

## 1A SOLUTION: Providing services to attract businesses in Pori

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts
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### Description



City services will support circular economy companies to locate in Pori as well as to help their employees to settle in the city. In the future Pori offers the most attractive place to live, work and operate, also for the talented individuals and advanced businesses. Current services and processes will be developed to attract business which generates economic growth and competitiveness of the City.

### Link to vision



In parallel to developing excellent invest-in services which are based also on effective data management, the City is actively communicating to potential investors, and creating an image of the city as forerunner in Industrial Circular Economy,

### Link to ambition statement



Green and Circular Economy is actively utilized in [City branding](#), turning the City image from industrial to green and attractive. Attractiveness of the City will be supported by large number of local stakeholders.

### Expected impact and timing



- City services will better support and attract circular economy companies to locate in Pori.
- By the year 2024 Green growth story of Pori is well-known in Europe. Pori is well-known as a circular economy city.
- By the 2026 numerous green technology investments are being implemented in Pori.

### Stakeholders involved

#### Solution lead:



City of Pori,  
Economic Development and  
Growth Department

#### Solution working team:



Prizztech Ltd. (business  
development company)

Chambers of commerce and business  
associations, together with the city, can form  
the basis for services (creating and supporting  
the attractiveness of the City)

#### Contributors:



The whole city organization.

#### Risks and mitigation



Potential risks

- Poor service development
  - Permit processes and schedules will remain at the same level
  - Environmental risks affect city branding.
  - Poor external communication by the City
- Mitigation actions

- Active monitoring and evaluating service development as well as the marketing activities and results

### Inputs, outputs, outcomes and impacts

#### Source of funding and estimated cost



City of Pori

50 000 € in total

#### Solution maturity outputs



1. Identifying the most essential City Services which support attractiveness of the City and invest-in-possibilities. E.g., collecting relevant information on the companies already invested in the area (experiences of the process etc.).
2. Developing and improving city service identified. Providing more relevant city data and building the Pori brand.
3. Shortening city processes e.g., related to permits and other relevant factors in the invest-in-process.

#### City performance outcomes and impacts














Growth is a key and the aim of the solution.

New green investments will increase the number of jobs and inhabitants, as well as generate taxes.  
The rate of unemployment will decrease also based on work-based immigration.

# CITY SERVICES: With its developed city services, it will be easy to invest more in Pori.

## 1B SOLUTION: Principles of green service

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts
<p><b>Description</b>  Defining the principles of green service in Pori. Benchmarking green services provided by other Finnish cities and developing the principles in Pori based on the lessons learned. Developing services in environmental and sustainable way as well as taking care of smooth and fast service process. The principles will be utilized in the invest-in situations –as necessary conditions for a potential investors and as a service concept provided by the City.</p>	<p><b>Solution lead:</b>  City of Pori, Economic Development and Growth Department</p> <p><b>Solution working team:</b>  City of Pori</p> <p><b>Contributors:</b>  The whole city organization.</p>	<p><b>Source of funding and estimated cost</b>  The work will be done by the City of Pori city, no extra investment needed (the benchmarking and development work will be done as a part of work among the city personnel).</p>
<p><b>Link to vision</b>  The city services will be developed in intelligent and sustainable way, which supports the City's image as a recognized forerunner in <b>Industrial Circular Economy</b>.</p>	<p><b>Risks and mitigation</b>  Potential risks</p> <ul style="list-style-type: none"> <li>• Poor service development</li> <li>• Poor external communication by the City</li> </ul> <p>Mitigation actions</p> <ul style="list-style-type: none"> <li>• Benchmarking other cities / identification of good practices</li> <li>• Active monitoring and evaluation of service development</li> </ul>	<p><b>Solution maturity outputs</b>  1. Peer learning and knowledge sharing between Pori and the bechmarked cities. Fostering collaboration between cities.</p> <p>1. Developing and improving city service based on the principles.</p> <p>3. Building the Pori brand based on the principles and raising the awareness of the city also internationally.</p>
<p><b>Link to ambition statement</b>  Principles of green service is actively utilized in <b>City branding</b>, and in invest-in-marketing. Principles of Green Services will be available on BusinessPori portal for potential investors.</p>		<p><b>City performance outcomes and impacts</b>  Principles of green service are implemented in the City and utilized in the city branding (creating a high standard of the City of Pori).</p> <p>Direct and indirect impacts will reflect on the economic growth and competitiveness of the City. Flourishing industrial circular economy business and new green investments will increase the number of jobs and inhabitants in the area, as well as generate taxes.</p>
<p><b>Expected impact and timing</b>  • Benchmarking and development in 2022</p> <ul style="list-style-type: none"> <li>• Implementing the principles of green service in the city organisation in 2023</li> <li>• By the year 2024 Green growth story of Pori is well-known in Europe. Pori is well-known as a circular economy city.</li> </ul>		



# CITY SERVICES: With its developed city services, it will be easy to invest more in Pori.

## 1C SOLUTION: Updating BusinessPori portal, including ICE/Green Growth section

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts
<b>Description</b>  Further development of the web portal 'BusinessPori' ( <a href="https://www.businesspori.fi/en">https://www.businesspori.fi/en</a> ) to attract Circular Economy companies to invest in the Pori region. The portal will provide information on available plot areas, permit application processes etc. The portal offers comprehensive information on living, working and operating in Pori. Supporting active face-lift of Pori.	<b>Solution lead:</b> City of Pori, Economic Development and Growth Department and Visit Pori, Communication Department 	<b>Source of funding and estimated cost</b> City of Pori Concepting and updating the portal: 50 000 € in total 
<b>Link to vision</b>  The portal will support the image of Pori as an intelligent, sustainably growing and creatively renewing city, a great place talented individuals and advanced businesses	<b>Solution working team:</b> Prizztech (with external communication partner)  Chambers of commerce and business associations, together with the city, form the basis of the services.	<b>Solution maturity outputs</b>  <ol style="list-style-type: none"> <li>1. Information content (from the invest-in perspective) increases.</li> <li>2. Awareness rate and the usage (visitors etc.) of the portal increases.</li> <li>3. Feedback on the portal from the industrial circular economy companies are positive.</li> </ol>
<b>Link to ambition statement</b>  The portal content is highly linked to serve investment decisions of industrial circular economy companies. In addition, the portal is actively utilized in <b>City branding</b> , turning the City image from industrial to green and attractive,	<b>Contributors:</b>  The whole city organization.	<b>City performance outcomes and impacts</b>  The content and the usage of BusinessPori portal will strengthen the investment decisions of circular economy companies. The portal will be utilized in creating the green growth story of Pori and in city branding.  Direct and indirect impacts will reflect on the economic growth and competitiveness of the City. Flourishing circular economy business and new green investments will increase the number of jobs and inhabitants in the area, as well as generate taxes.
<b>Expected impact and timing</b>  <ul style="list-style-type: none"> <li>• Concepting the portal by 12/2022</li> <li>• Updated portal available 01/2023</li> <li>• By the year 2024 Green growth story of Pori is well-known in Europe. Pori is well-known as a circular economy city.</li> </ul>	<b>Risks and mitigation</b>  <p>Potential risks</p> <ul style="list-style-type: none"> <li>• Poor international communication by the City</li> <li>• Usability of the portal will fail</li> <li>• Wrong marketing channels</li> </ul> <p>Mitigation actions</p> <ul style="list-style-type: none"> <li>• Internal quality review</li> <li>• User feedback system / survey</li> <li>• Active monitoring</li> </ul>	

# CITY DATA: Digitalisation is a big part of Circular Economy

## 2A SOLUTION: Industrial waste data taxonomy / categorization

### Strategy

#### Description



Collecting industrial waste / byproduct data produced by the city and sharing the data for either openly or commercially (the data bank).

Currently considerable amount of potentially valuable waste/byproduct is disregarded, and the city can provide an example of sharing and utilising the data.

Data will be collected from various city sources as well as from local companies. Data will be categorized and/or data taxonomy will be created, processed and published in order to boost business opportunities based on the data bank.

#### Link to vision



Solution supports the image of Pori as an intelligent, sustainably growing and creatively renewing city.

#### Link to ambition statement



City data is better utilised to monitor and support industrial circular economy. The city coordinates the data collection and support business opportunities related to it. The solution is also strongly linked to city services, business collaboration and city branding.

#### Expected impact and timing



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Decreased volume of industrial waste being discarded, improving circular economy ecosystem.

Timing will depend on the new city waste management organization to be established at the beginning of 2023.

### Stakeholders involved

#### Solution lead:



City of Pori,  
The Environment and Permit  
Services Division

#### Solution working team:



City of Pori,  
ICT department

#### Contributors:



City of Pori  
  
Local industrial companies (as  
data providers)

#### Risks and mitigation



##### Potential risks

- Data extraction won't be possible
- Companies refuse to share their data
- Implementation risks are related to the data collection from operative internal systems. The integration problem?

##### Mitigation actions

- Early engagement & feedback of stakeholders in the definition process

### Inputs, outputs, outcomes and impacts

#### Source of funding and estimated cost



Joint initiative between companies, research institutes and cities in the Pori region.

Budget allocation will be confirmed after prioritizing ambitions statements by the City Council.

#### Solution maturity outputs



1. Data bank established on industrial waste.
2. Data is utilized both by public and private sector (business opportunities, research data etc.).
3. Data utilized by the actors especially in the Peitto Circular Economy Park.

#### City performance outcomes and impacts



Coordinated data collection and categorization on industrial waste / byproduct.

Supporting circular companies to invest in the Pori region: knowledge on the material (waste) available that they need for their business.


Reducing the total amount of disregarded industrial waste.



# CITY DATA: Digitalisation is a big part of Circular Economy

## 2B SOLUTION: Open data on building permits

### Strategy

**Description**  Opening city data on building permits and permit process in order to have transparency and more effective internal processes.

Gathering data from current data sources, processing data and open it for commercial use. Also publishing the data through open API/dashboard application.

### Link to vision



Comprehensive data management will strengthen the City's image as a forerunner in Industrial Circular Economy.

### Link to ambition statement



Digitalisation will be comprehensively utilised in the City management by strengthening the understanding on circular economy. The solution is linked to city services, business collaboration and city branding.

### Expected impact and timing



Improved transparency on public governance, potential data re-use and further analysis by third parties (companies) (for commercial use).

Could be started immediately.

### Stakeholders involved

#### Solution lead:



City of Pori,  
The Environment and Permit  
Services Division

#### Solution working team:



City of Pori ,  
ICT department

External application to be  
acquired: ELYM (Elym is Rogue  
Lineage script with interface )

#### Contributors:



City of Pori

#### Risks and mitigation



##### Potential risks

- Data use turns out to be low
- Extracting data from operational systems deemed too costly and automatised data won't be available

##### Mitigation actions

- Open interaction with companies
- Data sharing / open feedback

### Inputs, outputs, outcomes and impacts

#### Source of funding and estimated cost



City of Pori, continuous funding from operational ICT budget. Procurement of special program for the application; the costs to be covered by ongoing open data initiative,

Budget allocation will be confirmed after prioritizing ambitions statements by the City Council (10/2022).

#### Solution maturity outputs



1. Fast and smooth permit process available to all actors.
2. Open data platform available and provided by the City.

#### City performance outcomes and impacts



High-quality and open data provided

Improved trust for public government, transparency of city services (efficiency based on short process time)




# CITY DATA: Digitalisation is a big part of Circular Economy


2C


## SOLUTION: Municipal waste data collection


### Strategy

**Description**  Providing the citizens and other actors with municipal waste data which will give a big picture on waste produced the City. This, in turn, could potentially have an impact on consumer behaviour, as well as on public debate –ideally based on facts.

Municipal waste data will be categorized by type of waste produced and the cost caused (the data will be available at weekly/monthly/yearly level).

**Link to vision**  Data collection from various sources, categorization, processing and publishing the data will strengthen the City's aim to be a forerunner in Industrial Circular Economy (**Data management**)

**Link to ambition statement**  Digitalisation will be comprehensively utilised in the City management by strengthening the understanding on circular economy. The solution is linked to city services, business collaboration and city branding.


**Expected Impact and timing**  Impact on public opinion and decisions for waste circulation based on communications and marketing activities.


Implementation in 2023 when new waste management organization is established and running,

### Stakeholders involved

**Solution lead:**  City of Pori,  
The Environment and Permit  
Services Division

**Solution working team:**  City of Pori,  
ICT department  
External ICT partners (companies)

**Contributors:**  City of Pori  
External advisors/partners and companies  
e.g., Veikko Lehti Oy, Lassila&Tikanoja  
(leading waste management companies in  
the Pori area)


**Risks and mitigation**  Potential risks

- Data collected does not have a planned impact on public behaviour (behaviour of citizens)
- IT systems do not allow data extraction, or it is seen to have too low value for circular economy


Mitigation actions

- Education / training on waste management & CE principles
- Information provision

### Inputs, outputs, outcomes and impacts


**Source of funding and estimated cost**  Budget allocation will be confirmed after prioritizing ambitions statements by the City Council (10/202).

Resources will be ensured by collecting waste fees by the City.

**Solution maturity outputs**  1. Municipal waste data collected and analysed.

2. Educational material produced and utilized by the City (creating public understanding on waste, amount of waste and the cost caused).

3. Amount of waste will decrease and/or the waste management costs will decrease.

**City performance outcomes and impacts**  Better sorting of waste both at the city level as well as among the citizens -> deducing waste management costs and improving sustainability in environment

Strengthening re-use or recycling opportunities.

# CITY DATA: Digitalisation is a big part of Circular Economy

## 2D SOLUTION: Visualisation of material flows

### Strategy

#### Description



Increasing understanding and knowledge on material flows by visualisation. The visualization will show how source materials turn into various byproducts/waste and how they circle back as raw material for other processes.

Benchmarking the visualisation done by the City of Mikkeli and utilising the visualisation as central element in attracting companies and investors in the area.

#### Link to vision



Data collection from various sources, categorization, processing and publishing the data will strengthen the City's aim to be a forerunner in Industrial Circular Economy. **(Data management)**

#### Link to ambition statement



Digitalisation will be comprehensively utilised in the City management by strengthening the understanding on circular economy. The solution is linked to city services, business collaboration and city branding.

#### Expected impact and timing



The visualisation will give decision makers a big picture and help them to decide circular economy investments.

Timing depends on prioritization of data initiatives and availability of relevant data.

### Stakeholders involved

#### Solution lead:



City of Pori,  
The Environment and Permit  
Services Division

#### Solution working team:



City of Pori,  
ICT department  
  
Visit Pori, Communication  
Department

#### Contributors:



City of Mikkeli

#### Risks and mitigation



##### Potential risks

- Data extraction won't be possible
- Companies refuse to share the data.

##### Mitigation actions

- Building on City of Mikkeli experience
- Open interaction with companies

### Inputs, outputs, outcomes and impacts

#### Source of funding and estimated cost



City of Pori,

Budget allocation will be confirmed after prioritizing ambitions statements by the City Council (10/2022).

#### Solution maturity outputs



1. Benchmarking completed. Lessons learned from the city of Mikkeli.
2. Visualisation available and utilised by the City (also for the marketing purposes).
3. Visualisation has supported business opportunities and invest-in decisions made by companies.

#### City performance outcomes and impacts














Companies want to invest into Pori region as they know they have the material (waste) that they need for their business. The solution will decrease amount of discarded industrial waste.

Visualization material will also raise public awareness about material flows (among the citizens), as well as support the city branding and marketing activities (invest-in)

# BUSINESS COLLABORATION: New services, R&D and industrial investments in Circular Economy by 2024












## 3A SOLUTION: Business Accelerator for Industrial Circular Economy

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts
<b>Description</b>  <p>Proving a strong industrial infrastructure in Pori, especially in the Peitto circular economy park which enables a platform for new business.</p> <p>Developing a service concept, Business Accelerator, for industrial circular economy to accelerate new business.</p>	<b>Solution lead:</b> City of Pori  <hr/> <b>Solution working team:</b> Prizztech (operative actor)  <hr/> <b>Contributors:</b> Education and research actors: SAMK, UCPori (University Consortium of Pori), WinNova (vocational education)  <p>ICE companies</p> <hr/> <b>Risks and mitigation</b>  <p>Potential risks</p> <ul style="list-style-type: none"> <li>• Unsuccessful concepting of Business Accelerator</li> <li>• Awareness of Business Accelerator remains low</li> </ul> <p>Mitigation actions</p> <ul style="list-style-type: none"> <li>• Early engagement of companies developing the concept</li> <li>• Performance monitoring</li> </ul>	<b>Source of funding and estimated cost</b>  <p>City of Pori (infrastructure) Pori Ecosystem Agreement EU Estimated cost 0,5-1,5 M€ in total</p> <hr/> <b>Solution maturity outputs</b>  <ol style="list-style-type: none"> <li>1. Raising city awareness among circular economy actors.</li> <li>2. R&amp;D opportunities, funding opportunities for business.</li> <li>3. Networking and matchmaking opportunities available.</li> </ol> <hr/> <b>City performance outcomes and impacts</b>  <p>Positive impacts on economic development and competitiveness of the city.</p> <p>Increase in number of jobs and R&amp;D projects.</p> <p>Boosting circular economy -based business.</p>
<b>Link to vision</b>  <p>Pori is a recognized forerunner in Industrial Circular Economy providing central resources to key stakeholders.</p>		
<b>Link to ambition statement</b>  <p>Business collaboration and development is supported, and new services are jointly developed. The solution is linked to city services, city data and city branding.</p>		
<b>Expected impact and timing</b>  <p>New services, R&amp;D projects and industrial investments in circular economy by 2024.</p>		



# BUSINESS COLLABORATION: New services, R&D and industrial investments in Circular Economy by 2024

## 3B SOLUTION: Mini fairs and business events

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts
<b>Description</b>  <p>Mini fairs and thematic business events offers a platform for networking and business collaboration and a way to strengthening the relationship between the City and private sector. In addition, fairs and events support the city branding as a recognized forerunner in Industrial Circular Economy.</p>	<b>Solution lead:</b>  <p>City of Pori, Economic Development and Growth Department and The Environment and Permit Services Division</p> <hr/> <b>Solution working team:</b>  <p>Prizztech Ltd.  Education and research partners: UC Pori, SAMK, WinNova</p> <hr/> <b>Contributors:</b>  <p>City of Pori, Visit Pori, Communication Department Chamber of Commerce, Companies</p> <hr/> <b>Risks and mitigation</b>  <p>Potential risks:</p> <ul style="list-style-type: none"> <li>• Failure in attracting participants and providing interesting content also internationally</li> <li>• Failure of attracting interesting speakers</li> <li>• Covid-19 pandemic or equivalent prevents face-to-face meetings</li> </ul> <p>Mitigation actions</p> <ul style="list-style-type: none"> <li>• Ensuring relevant content</li> <li>• Hybrid events</li> <li>• Active and responsive marketing</li> </ul>	<b>Source of funding and estimated cost</b>  <p>City of Pori Pori Ecosystem Agreement EU Estimated cost 20 000 – 50 000 € annually</p> <hr/> <b>Solution maturity outputs</b>  <ol style="list-style-type: none"> <li>1. Fairs and events organized annually.</li> <li>2. Attracting international participants and speakers.</li> <li>3. Raising city awareness among circular economy actors.</li> </ol> <hr/> <b>City performance outcomes and impacts</b>  <p>Positive impacts on economical development, city branding and enhancing business environment.  Raising city awareness also at the international level.</p>
<b>Link to vision</b>  <p>The solution supports the vision and the City's role as an attractive living, working and operating environment. Boosting local possibilities to grow and flourish.</p>		
<b>Link to ambition statement</b>  <p>Business collaboration and development is supported through Business Accelerator for Circular Economy, where new services are jointly developed. The solution is linked to city services and city branding.</p>		
<b>Expected impact and timing</b>  <p>New business networks and R&amp;D collaboration created 2022 onwards</p>		

# BUSINESS COLLABORATION: New services, R&D and industrial investments in Circular Economy by 2024

3C

## SOLUTION: Information Channel

### Strategy

#### Description



Establishing communication and marketing platform for business related content in the BusinessPori Platform. Boosting business collaboration possibilities and highlighting local success stories for marketing purposes.

Information collection with the help of investors & SME sector as information providers.

#### Link to vision



The solution supports the vision and the City's role as an attractive living, working and operating environment. Boosting local possibilities to grow and flourish.

#### Link to ambition statement



Business collaboration and development is supported through Business Accelerator for Circular Economy Living Lab, where new services are jointly developed. The solution is strongly linked to development of city services and to the city branding.

#### Expected impact and timing



New business networks created and, R&D collaboration started in 2022 onwards.

### Stakeholders involved

#### Solution lead:



City of Pori,  
Economic Development and Growth Department and  
The Environment and Permit Services Division

#### Solution working team:



City of Pori  
Prizztech Ltd.

#### Contributors:



City of Pori,  
Visit Pori, Communication Department

#### Risks and mitigation



Potential risks

- Insufficient interesting content for the target audience

Mitigation actions

- Ensuring the client needs are well analysed
- Active and responsive marketing

### Inputs, outputs, outcomes and impacts

#### Source of funding and estimated cost



City of Pori  
Pori Ecosystem Agreement  
Estimated cost 10 000 – 20 000 € annually

#### Solution maturity outputs



1. Systematic information collection from investors and SMEs.
2. Updated content on business collaboration possibilities and local success stories.











#### City performance outcomes and impacts



Positive impacts on city branding and business collaboration.  
Target information to target audience.

# RE-SKILLING AND UP-SKILLING: Increase the future talented workforce in Pori












## 4A SOLUTION: STEAM training

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts
<p><b>Description</b></p>  <p>Increase the future workforce in the areas of science and technology by improving STEAM (Science, Technology, Engineering, the Arts and Mathematics) skills in education to create greener industrial environment and solutions. Main focus on training will be an up-skilling approach.</p> <p>Benchmarking of strong STEAM cities, e.g City of Turku</p>	<p><b>Solution lead:</b> City of Pori, Education Division</p>  <p><b>Solution working team:</b> Head of Pori school officials</p>  <p><b>Contributors:</b></p>  <p>Education actors in higher education as well in professional training</p>	<p><b>Source of funding and estimated cost</b></p>  <p>City of Pori</p> <p>Companies (Sponsors from industry)</p> <p>Budget allocation of the City will be confirmed after prioritizing ambitions statements by the City Council (10/2022).</p>
<p><b>Link to vision</b></p>  <p>The solution supports the vision and the City's role as an attractive living, working and operating environment for talented individuals and advanced businesses.</p> <p>Pori can offer skillful workforce in new green areas and in RDI projects.</p>	<p><b>Risks and mitigation</b></p>  <p>Unless specific funding is allocated to the activity, there is a risk that other important education activities will be prioritized in common budget.</p>	<p><b>Solution maturity outputs</b></p>  <ol style="list-style-type: none"> <li>1. Benchmarking of other cities completed, Lesson learned.</li> <li>2. The role of STEAM skills will be noticed in more systematic manner.</li> <li>3. Level of STEAM education provided in the Pori area has increased.</li> </ol>
<p><b>Link to ambition statement</b></p>  <p>Further training and upskilling/reskilling will be intensified in all critical areas in the city and its businesses. Training cooperation with industry will be strengthened and new training opportunities will be created together with education and industry. The solution is strongly linked to business collaboration.</p>	<p>Since the STEAM skills are critical for Pori's success, there is a need to lobby the solution to the city government and city council.</p> <p>In addition, the need for the workforce with STEAM skills will be generally map among key companies</p>	<p><b>City performance outcomes and impacts</b></p>  <p>The solution will increase the future workforce in Pori and offer foundation for green investors and skilled workforce.</p> <p>In parallel, strengthens Pori's image as an attractive place to live and work.</p>
<p><b>Expected impact and timing</b></p> <p>Roadmap and financing ready to start intensive STEAM training</p>		



# RE-SKILLING AND UP-SKILLING: Increase the future talented workforce in Pori

## 4B SOLUTION: Identification of critical training needs

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts
<p><b>Description</b></p>  <p>Utilize Artificial Intelligence to understand which are the critical training needs in the industrial circular economy companies in the area. AI will match the demand and workforce available. The solution will Influence on allocation of education and boost personal opportunities for continuing education.</p> <p>Project combining AI analyses, HR professionals and education providers</p>	<p><b>Solution lead:</b></p>  <p>City of Pori, Education Division</p> <hr/> <p><b>Solution working team:</b></p>  <p>City of Pori, Selected companies External AI provider, Higher education officials</p> <hr/> <p><b>Contributors:</b></p>  <p>Education providers industrial circular economy companies</p> <hr/> <p><b>Risks and mitigation</b></p>  <p>Potential risks</p> <ul style="list-style-type: none"> <li>• Focus on individual company needs</li> <li>• The solution will create competition not collaboration among the companies</li> <li>• Resources in the education sector are limited and also depending on the governmental allocation/decision-making</li> </ul> <p>Mitigation actions</p> <ul style="list-style-type: none"> <li>• Proper analysis of training needs</li> <li>• Early engagement of stakeholders and end clients</li> </ul>	<p><b>Source of funding and estimated cost</b></p>  <p>City of Pori 50 000-100 000€ in total</p> <hr/> <p><b>Solution maturity outputs</b></p>  <ol style="list-style-type: none"> <li>1. Critical training needs identified in the central circular economy companies.</li> <li>2. Opportunities to continuing education and courses/training.</li> </ol> <hr/> <p><b>City performance outcomes and impacts</b></p>  <p>By collaboration with the companies, the City strengthen the discussion with business and understand better the training needs.</p> <p>Identified training needs will potentially support e.g., wind turbine parks, helping to find local workforce at local wind turbine parks.</p> <p>Potential increase of jobs and inhabitants as well as decreased rate of unemployment.</p>
<p><b>Link to vision</b></p>  <p>The city provides an attractive living, working and operating environment for talented individuals and advanced businesses.</p>		
<p><b>Link to ambition statement</b></p>  <p>Further training and upskilling/reskilling will be intensified in all critical areas in the city and its businesses. Training cooperation with industry will be strengthened and new training opportunities will be created together with education and industry. The solution is strongly linked to business collaboration.</p>		
<p><b>Expected impact and timing</b></p>  <p>Critical training needs identified by 06/2023</p>		

# CITY BRANDING: Image of Green Pori

## 5A SOLUTION: Green growth story of Pori

### Strategy

#### Description



In order to have more green technology investments, talents of sustainable development and new business models, the image of City will be brightened by creating a Green growth story of Pori, focusing on the strengths of the city and utilizing the Pori brand. The basis of the story lies on examples of investments done by BioEnergo and CriticalMetals.

#### Link to vision



The solution support the vision aimed. The city is actively providing digital information boosting both opportunities for business as well as its own brand and marketing.

#### Link to ambition statement



The City branding will be strengthened; turning the City image from industrial to green and attractive. The solution is linked to all ambition statements.

#### Expected impact and timing



Central elements of Green Growth story of Pori have been identified and the story drafted by 06/2023. By the year 2024 Green growth story of Pori is well-known in Europe. Pori is well-known as a circular economy city and Peittoö has been developed as a

### Stakeholders involved

#### Solution lead:



City of Pori,  
Visit Pori, Communication  
Department

#### Solution working team:



Prizztech Ltd.

#### Contributors:



Reference companies in the region  
(e.g., Fortum/Fincumet, Critical  
metals, BioEnergo),

Research and education partners:  
UCPori, SAMK

#### Risks and mitigation



##### Potential risks

- Companies does not commit or invest in the region. No further references available to create and continue the story.
- Wrong communication channels

##### Mitigation actions

- Careful choice of marketing channels
- Facilitating broad-based information sharing amongst companies

### Inputs, outputs, outcomes and impacts

#### Source of funding and estimated cost



The source of funding: City of Pori

Estimate of the costs: in total:

Web pages 10 000 €, digital platform for Peittoö circular material stock market 30 000 €, marketing material 30 000 €, event and conference costs 30 000 €.

#### Solution maturity outputs



1. Green growth story of Pori ready and actively utilized also internationally.
2. Green Growth story mentioned in international business and investor context.

#### City performance outcomes and impacts



The City provides potential national and international investors with effective and continuously updating story of green growth of Pori (utilizing many marketing channels).

Direct and indirect impacts will reflect on the economic growth and competitiveness of the City. Flourishing circular economy business and new green investments will increase the number of jobs and inhabitants in the area, as well as generate taxes.

# CITY BRANDING: Image of Green Pori

## 5B SOLUTION: Facts and indicators

### Strategy

#### Description



Creating an attractive image of strong industrial City for the investors. Preparing the presentation of facts of reports and indicators supporting Pori's role as a forerunner in Industrial Circular Economy. Link the material to the web (BusinessPori.fi) and use the presentation actively in city marketing and branding. A high quality visual digital presentation will include e.g., number of companies, available plots, green energy availability (wind power), water intake capacity and handling, wastewater treatment, seaport water depth etc.

#### Link to vision



The solution support the vision aimed. The city is actively providing digital information boosting both opportunities for business as well as its own brand and marketing.

#### Link to ambition statement



The City branding will be strengthened; turning the City image from industrial to green and attractive. The solution is linked to city services, city data and business collaboration.

#### Expected impact and timing



The European Commission's  
INTELLIGENT CITIES  
CHALLENGE

Presentation completed by the end of the year 2022.

### Stakeholders involved

#### Solution lead:



City of Pori,  
Economic Development and  
Growth Department

#### Solution working team:



Prizztech  
City of Pori,  
Visit Pori, Communication  
Department

#### Contributors:



Industrial circular economy  
companies and investors  
  
Research and education partners:  
UCPori, SAMK

#### Risks and mitigation



##### Potential risks

- Limited data, data won't be found systematically
- Non-updated or disinformative data or data won't provide any added value

##### Mitigation actions

- Careful planning of appropriate indicators
- Ensuring testing and stakeholder feedback

### Inputs, outputs, outcomes and impacts

#### Source of funding and estimated cost



City of Pori  
Planning and completing the presentation:  
10 000 € in total

#### Solution maturity outputs



1. Presentation completed and available.
2. Presentation utilized by the City and other relevant stakeholders both nationally and internationally.

#### City performance outcomes and impacts



The City provides accurate and relevant information to potential investors and actively creates a brand of the City as a forerunner in Industrial Circular Economy.

Direct and indirect impacts will reflect on the economic growth and competitiveness of the City. Flourishing circular economy business and new green investments will increase the number of jobs and inhabitants in the area, as well as generate taxes.





# CITY BRANDING: Image of Green Pori

## 5C SOLUTION: Attractive location of industrial plots

### Strategy

#### Description



Plots of not-in-use industry (non-virgin) can be used as a trump card for environmental permit appl. There is a good availability of existing and green-field industrial plots nearby port and railways with effective infra. Pori will be branded as an excellent city and location for green growth manufacturing and other technology companies. The city offers industrial locations surrounded by green technology network and circular economy park, as well as strong business services and networks available. Pori will be presented in industrial exhibitions (national and international), in social media, especially in professional sites and media.

#### Link to vision



Active marketing of industrial plots will generate interest of circular economy companies to invest in the region.

#### Link to ambition statement



The City branding will be strengthened; turning the City image from industrial to green and attractive. The solution is linked to city services, city data and business collaboration.

#### Expected impact and timing



By the 2026 numerous green technology investments are being implemented in Pori

### Stakeholders involved

#### Solution lead:



City of Pori,  
Economic Development and  
Growth Department

#### Solution working team:



City of Pori,  
The Environment and Permit  
Services Division and  
Communication unit

#### Contributors:



Reference companies located in  
the Pori area

#### Risks and mitigation



##### Potential risks

- Companies does not commit or invest in in the region.
- No reference companies or examples.
- Wrong communication channels. Poor communication.
- The city does not provide coordinated and comprehensive services to companies

##### Mitigation actions

- Early engagement with potential locators to understand their needs
- Extra effort and flexibility for customization of services for each client

### Inputs, outputs, outcomes and impacts

#### Source of funding and estimated cost



The source of funding: City of Pori  
Budget allocation will be confirmed after  
prioritizing ambitions statements by the City  
Council (10/2022).

#### Solution maturity outputs



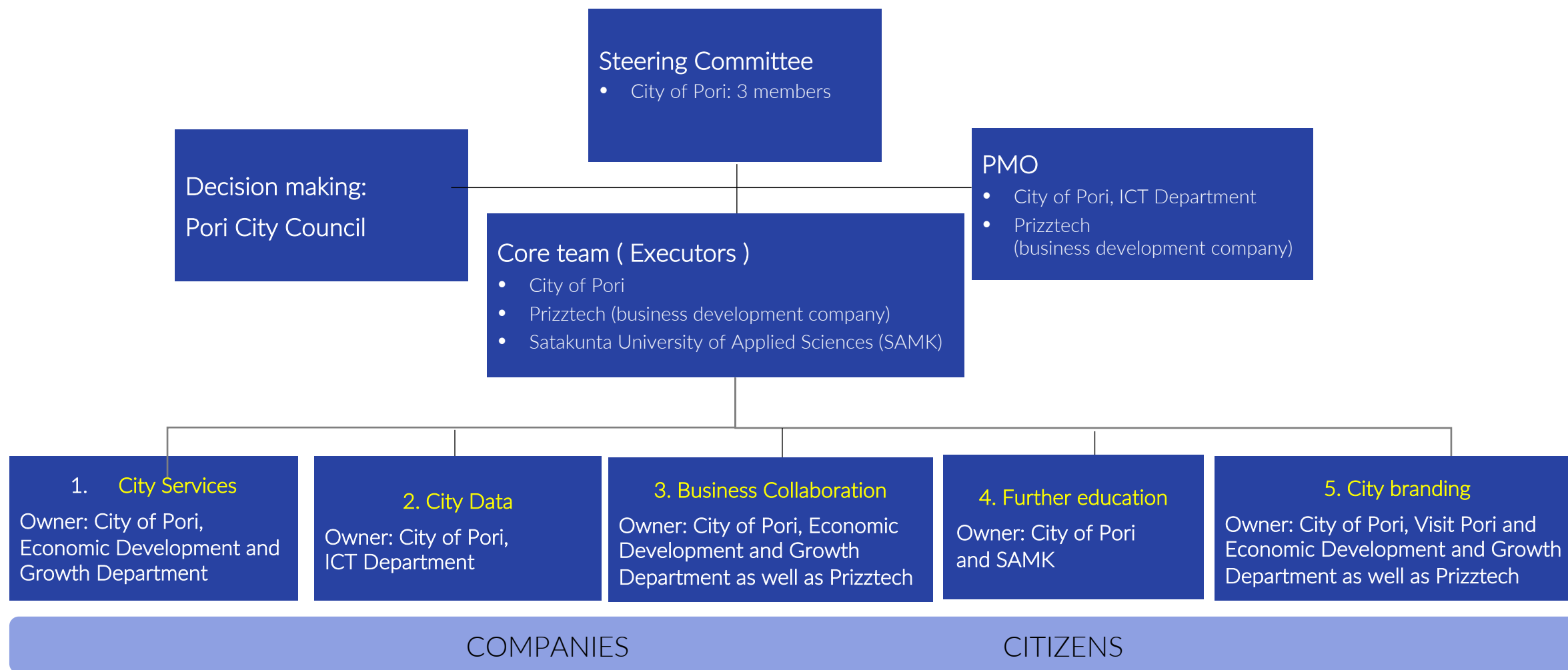
1. Identifying potential industrial plots for circular economy companies.
2. Creating marketing material to attract companies and investors.

#### City performance outcomes and impacts



Direct and indirect impacts will reflect on the economic growth and competitiveness of the City. Flourishing circular economy business and new green investments will increase the number of jobs and inhabitants in the area, as well as generate taxes.

# Governance structure for roadmap implementation





Section

3+4

February 2021 to May 2021

# Pori, Finland - Impact

ICC Transformation





# Impact executive summary

The ICC process of Pori has benefited from an exceptionally strong commitment of the city leadership and local stakeholders (large enterprises, SMEs, SAMK and universities etc.). The Industrial Circular Economy Ecosystem in Pori is active and provides a good base for further development.

Already during the ICC process, Australian company Critical Metals and a Finnish company BioEnergo committed to make green investments in the Pori area.

As a result of the ICC, the general awareness of Industrial Circular Economy/Green Economy has increased significantly. The ICC Pori Vision has made an important input to the new Pori 2030 Strategy and provides concrete elements for its implementation.

Number of new initiatives were generated during the ICC process, which are now put in practice. The implementation of the ICC strategy has been delegated to various stakeholders and is coordinated by the City services.

For now, emphasis has been put on the qualitative KPIs, as the many of the actions are still being further elaborated by stakeholders. The implementation of ICC strategy will be integrated to the monitoring of the Pori 2030 strategy. The wider impact of ICC will be evaluated separately.

The City of Pori is strongly committed to a good collaboration started in the ICC initiative. Practical collaboration with other Nordic Cities having an interest in Industrial Circular Economy is particularly sought for.

For next three years the City of Pori will aim to get at least two new investments in addition to those already confirmed, and to increase the number of green jobs and habitants in the area. This will be supported by e.g., development of city services, marketing and communication activities, intense business collaboration, boosting the city branding, as defined in the ICC strategy.

# Assessment of solution maturity in Pori - progress against KPIs

1: City Services. With its developed city services, it will be easy to invest more in Pori

	Description	Target / KPI	Assessment of progress
Solutions: 1A Proactive service concept for green investments. 1B .Principles of green service. 1C. Updating BusinessPori portal,			
KPI 1 (Solution 1A + 1C)	By the year 2024 Green growth story of Pori is well-known in Europe	Number of public references at EU level >20 pieces /year	Currently roughly 10 / year
KPI 2 / TARGET (Solution 1A + 1B)	By 2025 The Peitto Circular Park has been developed as a well-known circular material stock market	New City Plan, including Circular Park activities, accepted by 2023 (target)	City plan under preparation (draft)
KPI 3 (Solution 1A)	By the 2026 numerous green technology investments are being implemented in Pori	At least two implemented, with at least 100 mil. Invested by 2026	Two being prepared, with at least 500 mil. to be invested. Potential for more.
KPI 4 / TARGET (Solution 1B)	New building plots to be developed for Industrial Circular Economy	Reserve plot identified and secured by 2025 (target)	Already identified, not yet secured
KPI 5 / TARGET (Solution 1B)	General Plan to allow building more off-shore wind energy, 40 new wind turbine stations, 11-20MW in total	General Plan accepted by 2024 (target)	New General Plan being drafted

# Assessment of solution maturity in Pori - progress against KPIs

## 2. City Data. Digitalisation is a big part of Circular Economy.

	Description	Target / KPI	Assessment of progress
Solutions: 2A Industrial waste data taxonomy/categorization. 2B. Open data on building permits. 2C. Municipal waste data collection. 2D Visualisation of material flows			
KPI 1 (Solution 2A)	Collaboration between the City and companies by pilot cases related to traffic and logistics (e.g. freight logistics): encouraging the utilisation of open city data and providing workable application for it	1-2 pilot cases for testing digital open data and the application providing the data	Several city data available but currently no business cases.  The aim is to find workable application for data sharing.
KPI 2/TARGET (Solution 2A + 2C)	Waste collection data available and utilised (new national waste law demands to inform waste amounts separately)	Data available in 2023 (target) after the new waste company has been established and is running	Utilisation of the data and positive change in customer behaviour by 2025 (sorting of waste, reducing amount and costs of waste).
KPI 3 (Solution 2B)	Automatised building permit processes and communication/interaction to a client (by robot)	50 % processes automatised -> process more effective and providing better services for customers	Currently there is no automation in the process.
KPI 4 /TARGET (Solution 2C)	Visualisation of material flows available	Visualisation will support business opportunities and invest-in decisions (target)	Concrete link between the material provided and the business opportunity, which can be further utilised as a marketing example.

# Assessment of solution maturity in Pori - progress against KPIs

## 3. Business Collaboration. New services, R&D projects and industrial investments in Circular Economy by 2024.

	Description	Target / KPI	Assessment of progress
Solutions: 3A. Match-making Living Lab model/accelerator. 3B. Mini fairs/events . 3C. Information channel for the BusinessPori platform (SME sector).			
KPI 1 (Solution 3A)	Several Industrial Circular Economy companies involved in business accelerator services annually	10 companies utilizing services annually	6 pcs of ICE companies growing their businesses with accelerator services.
KPI 2 (Solution 3B)	Thematic business events offering platform for networking and business collaboration	2-5 events organized annually. International speakers and participants	Several events in a planning phase, the first Green Business Arena on September 15 <sup>th</sup> 2022. Utilising the feedback from the participants.
KPI 3 / TARGET (Solution 3C)	BusinessPori.fi (web portal) serving as an information channel for investors and SME sector	Web page section ready in 2022 (target)	Concept of web page ready. Implementation and continuous updating 2023 onwards.



# Assessment of solution maturity in Pori - progress against KPIs

## 4. Up-skilling and re-skilling

	Description	Target / KPI	Assessment of progress
Solutions: 4A. STEAM Training. 4B. Identification of critical training needs.			
KPI 1/ TARGET (Solution 4A)	Pori is recognized as a city of STEAM education/training	Action plan of multi-level STEAM training with allocated resources and responsibilities (target)	Nomination of a process owner from the city of Pori (TBC)
KPI 2/ TARGET (Solution 4B)	Identifying training needs of key companies and organisations in a systematic manner.	Roundtable meetings among of different stakeholders and organizations in order to identify a) training needs of companies b) parties offering training solutions.  Utilising automatised solution (AI) to making supply to meet demand and vice versa. In addition to identify personal training needs.	Roundtable concept available and running

# Assessment of solution maturity in Pori - progress against KPIs

## 5. City Branding. Image of Green Pori.

	Description	Target / KPI	Assessment of progress
Solutions: 5A. Green Growth Story of Pori. 5B. Presentation of facts and indicators. 5C. Attractive location of industrial plots.			
KPI 1/ TARGET (Solution 5B)	Digital platform/ Data bank on industrial waste for Peitto circular economy park	Ready by 2024 (target)	Annual reporting, selection of suitable digital platform
KPI 2 (Solution 5A)	Increase of jobs and inhabitants based on Industrial Circular Economy	Number of green jobs starts to increase by 2024. Positive growth rate of inhabitants (currently negative)	Annual reporting
KPI 3/ TARGET (Solution 5A)	Sufficient personnel resources for the implementation activities	"Green growth manager" position to be established in the city organisation by 2023 (target)	To be included in the HR plan (City of Pori)
KPI 4/ TARGET (Solution 5A)	Solid and coherent message in all communication channels: Why Pori is green city?	Communications materials ready by 2023 (target)	Co-operation with different actors, working group
KPI 5/ TARGET (Solution 5C)	Utilisation of open data sources, e.g., permit process	Action plan by 2023 (target)	Annual reporting
KPI 6 / TARGET (Solution 5A + 5B)	3D models of city of energy solutions and other marketing material of the City available	Models ready by 2025 (target) Other marketing material available and developed 2023 onwards	Annual reporting

## 3 Year plan - ambitions

Building on the ICC, what would will the city aim to achieve in 3 years time?

- By the 2026 at least two green technology investments are being implemented in Pori
- General city plan will allow to build more off-shore wind energy by 2024, 40 stations, 11-20 MW
- BusinessPori information channel for investors and SME sector will be available by 2022. The channel will be developed based on the experience, feedback received.
- Increase of “Green jobs” and inhabitants will turn the Pori region into a positive growth rate by 2024
- By the year 2024 the *Green Growth Story of Pori* is well-known in Europe (focus group of the story are national and international industrial circular economy companies as well as other cities)

What steps will you take over the next 3 years to achieve these goals?

- International marketing and co-operation activities with accelerators i.e. Business Finland etc.
- Development of smoother and faster permit process
- Updating of BusinessPori Portal (www), with the target group of potential ICE investors
- Organising thematic business match-making days, events and mini fairs. i.e. Green Business Arena on 15<sup>th</sup> September 2022 (raising awareness of the Industrial Circular Economy Ecosystem and business and research possibilities supported by the city of Pori)

# **The Industrial Circular Economy Ecosystem of the Pori Region**



# Overview of the Industrial Circular Economy Ecosystem in the Pori Region 1/2

Pori's modern **industry** has developed in the 20<sup>th</sup> century. The main industry sectors are Wood Processing, Mechanical Engineering, Chemical Engineering, Metal Processing, Offshore Constructions and Automation. There is great **growth potential** for investors in Pori in the sectors of Automation and Robotics, Circular Economy, Technology Metals and Maritime Logistics.

The Pori Region is the **Capital of Technology Metals**: Electrification is based on technological metals and battery chemicals, whose globally significant manufacturing and product development ecosystem is located in the Pori region.

The City provides several **physical locations and virtual platforms** supporting operative and effective Industrial Circular Economy Ecosystem. The ecosystem has also enabled foreign companies to locate and invest in Pori. One of the key physical locations is the Port of Pori. More than 200 hectares of land are available for the new operation. In addition, there are areas in the vicinity of the port that provide an excellent base for industry, logistics and trade. A well-functioning infrastructure and the use of alternative energies, such as LNG, guarantee good business conditions.

Port of Mäntyluoto, Pori



## ALL ROADS LEAD TO PORI

Whether your business is import or export – our location and transport network are perfect for reaching anywhere in Finland.



# Overview of the Industrial Circular Economy Ecosystem in the Pori Region 2/2

The City of Pori is already involved in **several projects in the field of Industrial Circular Economy**. The following projects serve as the strategic and operational framework and also for the implementation of the ICC Strategy:

1. Development of the **Peitto Circular Economy Park**
2. **Engagement in the Carbon Neutral Municipalities Network**, which aims to reduce greenhouse gas emissions more extensively and rapidly than EU targets require.
3. The “**Circwaste – towards circular economy in Finland**” **project** which promotes efficient use of material flows, waste prevention and new waste and resource management concepts and. The project contributes to implementing the national waste management plan and directing Finland towards a circular economy.

**Expertise and education** is highly appreciated and emphasized in the Pori region. Opportunities for continuing professional education will be supported, as well as training collaboration with industry will be strengthened and new training opportunities opened. Critical fields of expertise include e.g., metal processing. Recycling has also become an important part of the process technology. In order to enable Industrial Circular Economy, there is a need for highly trained professionals in the region.

The essential element of the Ecosystem is business collaboration. For example, local companies are committed to providing students with internships, summer jobs, theses and diploma jobs, especially in process engineering and sustainable metals processing.

# Strategic background and central elements of the Industrial Circular Economy (ICE) Ecosystem

## CITY STRATEGIES and AGREEMENTS

- Pori 2030 strategy
- DCC and ICC Strategy
- Pori Ecosystem agreement
- Pori Circwaste roadmap
- Hinku network - Towards Carbon Neutral Municipalities
- Business Pori concept of marketing communications
- Satakunta Region/Climate- and energy strategy 2030

## DEDICATED ICE AREAS AND INFRA

- Peitto circular economy park
- Pori Portside areas
- Harjavalta industrial park
- Pori Copper Industry park

## ACTUALISED CIRCULAR ECONOMY INVESTMENTS (4)

E.g. ash refinery, bio-terminal, bio-gas plant, heap areas

## PLANNED CIRCULAR ECONOMY INVESTMENTS (6)

E.g. bio-gas conversion plant, vanadium recovery plant, metal recovery terminal, lithium battery recovery plant, hydrogen plant, carbon capture plant

## ONGOING R&D-PROJECTS AND PROGRAMMES (17)

Pori Ecosystem agreement, critical recycled metals pilot plant, precious metals mechanical difference method, Circwaste, zinc recycling, Peitto circular park business study, attraction plan of Meri-Pori

# Key actors and their roles in the Industrial Circular Economy Ecosystem

- **CITY OF PORI**, Division of *Economic Growth and Environment* (incl. City Development) and *Technical Divisions* (incl. Infrastructure and Building) (ENABLER, LEADER)
- **PRIZZTECH** (a business development company boosting business performance and competitiveness in the Satakunta region; City of Pori as the largest owner) (FASILITATOR, ENABLER)
- **LARGE COMPANIES & SMES** e.g., Cimcorp, Boliden, Aurubis, Luvata, Venator, Fortum Waste Solutions, Stena Recycling, Veikko Lehti, Lassila-Tikanoja etc.. Australian companies Critical Metals and Neometals have chosen the City of Pori in Finland as the preferred location for their sustainable vanadium recovery and production facility in Europe (year 2024). (CHANGE AGENTS, LEADERS)
- **EDUCATION AND RESEARCH ORGANISATIONS**: Satakunta University of Applied Sciences, University Consortium of Pori (UCPori), WinNova (vocational education), Aalto University, VTT Technical Research Centre of Finland (CHANGE AGENTS, FASILITATORS)
- **BUSINESS ASSOCIATIONS**: Satakunta Chamber of Commerce, Regional association of entrepreneurs, Business Angels Network (CHANGE AGENTS, FASILITATORS, ENABLERS)
- **PUBLIC AGENCIES**: EU, Finnish Government, Business Finland (FUNDERS, PARTNERS)
- **CITIZENS** (PILOT USERS, INFLUENCERS, ENABLERS)



# Collaboration in the Industrial Circular Economy Ecosystem

The Industrial Circular Economy Ecosystem is based on **strong collaborative culture and level of trust among the actors**. For example, The Chamber of Commerce is actively networking and bringing small businesses together and closer to other ecosystem actors. Satakunta University of Applied Sciences (SAMK) has several training and research projects where students and local companies interact and co-operate. In addition, the City of Pori actively cooperates with other municipalities in the region.

The **Ecosystem is supported by central commitments and agreements** taken by the City. Pori has signed a **Pact for Skills**, a shared engagement model for skills development in Europe, launched by the European Commission. The aim of the model is to join forces of both public and private organisations and take concrete action to upskill and reskill people in Europe.

Additionally, the City has signed an **Ecosystem Agreement with The Ministry of Economic Affairs and Employment (Finland)** which ensures strategic allocation of public and private RDI funding to strengthen globally competitive ecosystems. The objective of the agreements is to build innovation ecosystems, to bring research projects and networks into larger, mutually reinforcing competence clusters. A common factor for the cities involved in the agreement is that their progress is based on high university-driven competence and the utilisation of this competence.