

**[City of Essen & City of Koriyama]**

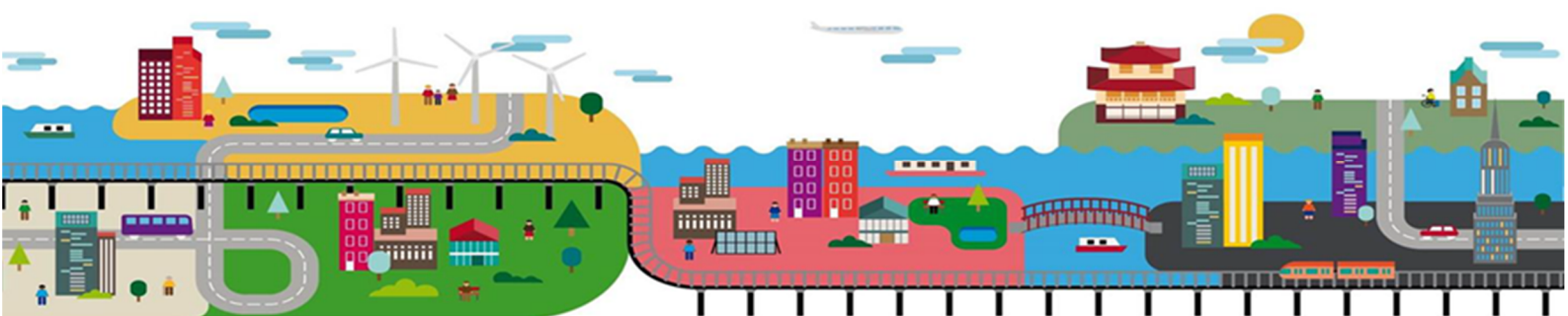
## International Urban Cooperation (IUC)

City-to-City Cooperation Program

**IUC-JAPAN**

### Action Plan

*A roadmap for Sustainable Urban Development Challenges  
based on International Urban Cooperation*





## The Urban Cooperation Action Plan (UCAP) at a Glance :

<b>Cities</b>	Essen	Koriyama
<b>State/Country</b>	Germany	Japan
<b>Population</b>	590,000	330,000
<b>Size in km<sup>2</sup></b>	210.34 km <sup>2</sup>	757.20 km <sup>2</sup>
<b>Pairing agreement signing date</b>	16 November 2018	
<b>Date of city visit to counterpart city</b>	22-27 April 2018 14-19 May 2019	14-17 November 2018
<b>Theme of cooperation</b>	Renewable Energy Medical Device Related Industry Water Management Smart City Regional and Urban Innovation, Competitive, Inclusive and Sustainable Economic Growth Urban Transport Education and Development of Future Generations	
<b>Key challenges of cooperation theme</b>	<ul style="list-style-type: none"> <li>• Urgent need to enhance climate, social, and economic urban resilience to shocks and stresses</li> <li>• High demand for globally competitive and innovative industries in the fields of renewable energy and medical device related industry</li> <li>• Development of next generations who bear the future of urban innovations and relationships between the cities of Essen and Koriyama</li> <li>• Insufficient resources, which could cause inefficiency or failure of actions and have an impact on the outcome of the cooperation theme</li> </ul>	
<b>Main Objective of UCAP</b>	<ul style="list-style-type: none"> <li>• To enhance mutual understanding and strengthen the bilateral relationship for the purpose of achieving a prosperous future.</li> <li>• To bolster local industries' competitiveness, create new businesses in each city.</li> <li>• To create opportunities to learn 'advanced expertise and technologies which create the future of society', 'scientific thinking, decision-making and the ability of public relations', 'receptiveness to diverse and different values', 'active citizenship' and 'resilience'</li> </ul>	

<p><b>Short description of main activities and key outputs</b></p>	<p><b>Knowledge transfer, study tours, joint seminars, and joint research activities regarding:</b></p> <ul style="list-style-type: none"> <li>• Knowledge transfer on sewage sludge treatment and disposal in consideration of contained pollutants in Essen</li> <li>• Knowledge transfer on transformation of digester gas to biogas in sewage treatment plants and its utilization in Essen</li> <li>• Knowledge transfer on municipal water management in Essen (climate resilience, rainwater management sewer management)</li> <li>• Study tour to Essen on energy generation, storage, and savings</li> </ul> <p><b>Joint seminars in the fields of renewable energy and medical, and healthcare in Essen and Koriyama</b></p> <p><b>Business matching events and trade fairs in each city with involvement of industrial circles for the purposes of:</b></p> <ul style="list-style-type: none"> <li>• Building business cooperation in the renewable energy, medicine and healthcare industries</li> <li>• Facilitating personnel exchanges of medical doctors and students and cooperation between medical institutions</li> <li>• Developing synergy effects and innovations in the fields of technology, processes and didactics for medical training centres</li> <li>• Creating a joint digital start-up platform with the objectives of mutual market transparency and market entry</li> <li>• Developing storage and use of energy under the application of innovative energy carriers and technologies (ex. Power to methanol)</li> <li>• Exploring possibilities to enter into German and Japanese markets and launch joint ventures by participating in trade fairs in each city</li> <li>• Sharing information on local major business enterprises in each city for further business matching</li> </ul> <p><b>Academic internship and student exchange programs include:</b></p> <ul style="list-style-type: none"> <li>• An internship programme initiated by the Faculty of Medicine, Duisburg-Essen University which is conducted by the Southern Tohoku General Hospital in Koriyama in 2020</li> <li>• A student exchange programme by Fukushima Prefectural Asaka High School to promote innovative and scientific thinking in 2020</li> <li>• Two 17-year-old scholars from Essen are hosted in Koriyama on the Alfried Krupp Pupils Scholarship programme for practical business training</li> </ul>
<p><b>Expected results - benefits</b></p>	<ul style="list-style-type: none"> <li>• Knowledge transfer of energy and water management that will enhance climate, social, economic resilience in these sectors in the two cities</li> </ul>

	<ul style="list-style-type: none"> <li>• The development of a foundation for renewable energy and medical device-related industry in close collaboration among industry, academia and government</li> <li>• The development of a foundation for the next generation in which globalisation, science and innovation serve as the basis of the education system</li> </ul>
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## 1. CITY OVERVIEWS: context and sustainable urban development challenge(s)

500 words per city. Provide any material and information that can support the understanding of the context (images, maps, plans, data)

EU City:	City of Essen
City Context (e.g. population statistics, demography, location of the city, key industries, urban assets)	
<p>The City of Essen is located in North-Rhine Westphalia in the Ruhr area. It is populated by approximately 590.000 inhabitants and is the economic and administrative centre of the Ruhr area (third largest metropolitan area in Europe). After a long history of heavy industry, Essen has become a highly diversified and innovative centre of economy, service and trade. It is now the location of the headquarters of 7 companies which are publicly listed on the DAX or MDAX, as well as other companies with some of the highest revenues in Germany.</p>  <p>The City of Essen highly recognises the importance of the municipal sector for the achievement of sustainability. Thus it has recently joined the resolution “2030 - Global Sustainable Development Agenda: Shaping Sustainability on Municipal Level”i of the German Association of Cities (Deutscher Städtetag - DST). Thereby, Essen affirms its willingness to dedicate itself to sustainable development in the context of the 2030 Agenda.</p> <p>This political commitment finds its equivalent on a strategic level, as the achievement of sustainability goals requires effective strategies, action approaches and participative structures. Therefore the City of Essen successfully has applied for participation in the program “Municipalities for Global Sustainability”, which is carried out by The Service Agency Communities in One World on behalf of the Federal Ministry for Economic Cooperation and Development.ii</p> <p>Furthermore the relevance of SDGs for the City of Essen finds its expression in a task extension of the former “Department of International Relations”, which correspondingly changed its name to “Office for European and International Affairs and Sustainable Development”.</p> <p>Thus, the participation of the City of Essen in the IUC City-to-City Program takes place in the context of a wider approach.</p> <ul style="list-style-type: none"> <li>● <b>Long-term cooperation between Fukushima Prefecture and the German State of North Rhine-Westphalia</b></li> </ul>	



The city-to-city cooperation between Koriyama and Essen is characterised by its strong framework in the form of an intense and long-term cooperation between Fukushima Prefecture and the German State of North Rhine-Westphalia (NRW).

North Rhine-Westphalia has traditionally fostered a strong relationship with Japan since its capital Düsseldorf became an important hub for Japanese-German trade in the 1950s as the first trading houses were founded here. The establishment of a Japanese consulate – later the consulate general – as well as the Japanese Chamber of Commerce and Industry Düsseldorf, and a branch office of JETRO (Japan External Trade Organization) emphasise the high degree of economic cooperation. Also the German-Japanese Industrial Cooperation Committee, the Japanese Club and a Japanese International School are situated in Düsseldorf. As German representative of The Japan Foundation, the Japanese Cultural Institute Cologne contributes to cultural exchange between both countries, whereas the office of the Japan Society for the Promotion of Science has its seat in the former German capital, Bonn.

In 1992 NRW.INVEST - the Economic Development Agency of NRW - founded the Tokyo-based NRW-Japan K.K. as its first foreign subsidiary.

Japan has become an important economic partner of North Rhine-Westphalia with more than 600 branches of Japanese enterprises situated here, whereas more than 100 German enterprises with headquarters in NRW operate branches in Japan.

Identify **Sustainable Urban Development** challenges that your city is planning to address through the IUC program (*please include a summary of existing strategies and policies relevant to these challenges, if possible*)

In the context of the Great East Japan Earthquake and the resulting Fukushima Daiichi Accident in 2011, this well-established and effective relationship has gained importance, as the State of North Rhine-Westphalia offered its support in the revitalisation of the affected region. As the location of internationally-operating energy and health enterprises as well as a place for education and research in these fields, NRW offered cooperation with Fukushima Prefecture. This has been initialised and concretised by mutual agreements, especially by Memorandums of Understanding (MOUs) between Fukushima Prefecture and the State of North Rhine-Westphalia regarding cooperation in the fields of renewable energy, energy-saving and energy efficiency (2014, renewed 2017) as well as medical technology (2014, renewed 2017). These are supplemented by corresponding agreements between institutions in the aforementioned fields of action.

One of the measures agreed upon in the MOUs is the regular mutual visit of theme-related trade fairs. COMPAMED and E-world energy & water attract many professional visitors from Japan, and likewise many experts from North Rhine-Westphalia attend trade fairs such as the Renewable Energy Industrial Fair (REIF) and the Medical Creation Fukushima, which enjoy high recognition.


Mutual professional events make up the characteristics of cooperation between Fukushima and North Rhine-Westphalia as well. These include *inter alia* the Fukushima – NRW Renewable Energy Seminars, co-organised by the Energy Agency FUKUSHIMA that has been established based on the model of the Energy Agency NRW. Both Agencies also signed a MOU for closer cooperation in 2017. In the field of medicine the NRW-Fukushima Joint Symposium on Advances in Medicine enables the expert exchange. Also seminars – usually taking place in the course of regular delegation trips – contribute to the exchange. And finally on both sides, appointed coordinators support and assist during business initiations and negotiations for industrial stakeholders.

On the cultural level, the first “Fukushima-Kenjinkai” (comparable to a club) was established in NRW. The Fukushima Prefectural Government also exhibits regularly at the Japan Day in Düsseldorf – annually organised since 2002 – to present their cultural specialities and touristic hotspots.

The City of Essen regards itself as a long-term contributor to the cooperation between the Fukushima and North Rhine-Westphalia at the municipal level, as its specific location factors make it particularly suitable, and there is a strong will to support Fukushima in its efforts to revitalize. In particular the relationship with Koriyama could be intensified and developed into a trustful and effective partnership. In December 2017 Koriyama and Essen signed an MOU on cooperation in the fields of renewable energy and the medical device industry, which is in accordance with agreements between Fukushima and North Rhine-Westphalia. Against this background, both cities applied for the IUC City-to-City program to intensify their cooperation.

During a delegation trip from Koriyama to Essen in 2018, in the course of which the IUC-Partnership Agreement was signed, Vice-Mayor Toshikazu Kanno from Koriyama summarised his impressions as follows: “With this visit to the City of Essen, we not only gained a lot of interesting insights – our relationship evolved from partners to good friends.”

This makes evident that the cooperation between Koriyama and Essen is fostered by a strong framework built up by the prefecture of Fukushima and the State of North Rhine-Westphalia. In conjunction with the cooperation at the national level between Japan and the European Union, most recently in the form of the Economic Partnership Agreement, it constitutes a highly functional manifestation of multi-level governance.

JAPAN City:	City of Koriyama
City Context ( <i>e.g. population statistics, demography, location of the city, key industries, urban assets</i> )	
<p>Located in the centre of Fukushima Prefecture in the north-eastern region of Japan, the City of Koriyama has grown into a major hub in a high-speed transportation network where people, commodities, and information are actively exchanged. It has become the commercial and industrial capital of the prefecture, which boasts one of the largest production volume and total sum of product sales in the Tohoku region.</p> <p>Furthermore, Fukushima Renewable Energy Institute, AIST (FREIA) opened in 2014 and Fukushima Medical Device Development Centre (FMDDSC) opened in 2016 in Koriyama. Leveraging both its geographical advantages and this nucleus of cutting-edge research institutions, the City of Koriyama seeks to accelerate the formation of the renewable energy and medical device industry clusters.</p> <p>The City of Koriyama has a population of approximately 330,000, and its ratio to the total population of the prefecture has gradually increased.</p> <p>The city has a total area of 757.20 km<sup>2</sup>, consisting of urban areas, farmlands and rural mountainous areas, which are used diversely. In addition to the urban amenities, the City of Koriyama boasts abundant nature, including Lake Inawashiro, the fourth largest lake in Japan, to the west, the Abukuma Mountain Range to the east and Adataro Mountain to the north of the city. The City of Koriyama has a lot to offer tourists, including the beautiful scenery of Lake Inawashiro, Bandai Atami Hot Springs, known as ‘the hot springs for beauty’ with a more than 800-year history, ‘Asakamai Rice’, a highly-regarded brand rice produced in Koriyama, as well as local carp cuisine and production.</p>	

Aiming to be a livable city where citizens can enjoy their lives and maintain a good work-life balance, the City of Koriyama intends to develop a cluster of job-creating industries by creating an attractive living environment for workers and their families with the well-balanced development of medical institutions, educational institutions and child-rearing facilities.

In April 2016, the construction of the Asaka Canal and the Asaka Land Development Project which was completed in 1882 and laid the foundation of the city's development, were accredited as a Japan Heritage Site. Currently, Koriyama is moving forward with public relations activities to disseminate information on the attractions of the city.

Identify **Sustainable Urban Development** challenges that your city is planning to address through the IUC program (*please include a summary of existing strategies and policies relevant to these challenges, if any*)

● **Challenges to be addressed as the Sustainable Development Goals (SDGs)**

Proactively cooperating with Fukushima Renewable Energy Institute, AIST (FREA), Fukushima Medical Device Development Support Centre (FMDDSC), higher educational institutions including universities, large enterprises, industry support organisations and financial institutions, etc., the City of Koriyama strives for the creation of new industries and the promotion of commercialisation.

Specifically, in a bid to propel efforts to develop industrial clusters, including technology exchanges between research institutes and private sectors in the fields of renewable energy and medical device related industry, the development of a new market and attracting foreign investment and joint-venture corporations, the City of Koriyama will work to organise seminars and networking events, make visits research institutes and local enterprises, as well as take on the role of coordinator in the fields of renewable energy and medical device related industry.

● **Existing strategies (policies) of Koriyama**

Currently, the City of Koriyama is intensifying its efforts in developing industries and a favourable employment environment, and is supporting the sustainable development of private sectors, based on 'Policy I-1: to become a city with the representative industries in which citizens can be proud of' in 'the Plan for the Future of Koriyama with SDGs 2018-2025' and 'Policy II: to create new businesses -responding to the Fourth Industrial Revolution-' as set out in the 'Koriyama Industry Development Vision - towards a veritable hub for knowledge'.

Moreover, the City of Koriyama encourages higher educational institutions including universities and research institutes in the Koriyama area to cooperate and conduct joint research, organising the 'Networking Meeting of Academic and Research Institutes in Koriyama' in which diverse solutions and needs of each organisation are actively exchanged.

## 2. AREA(s) of COOPERATION:













Please name and briefly describe the agreed **thematic areas of cooperation** focused on throughout your participation in the IUC program.

Title of the Partnership Agreement	<ol style="list-style-type: none"> <li>1. MOU on city-to-city collaborations</li> <li>2. Partnership agreement for the International Urban Cooperation (IUC) city-to-city project</li> </ol>
Date of signature:	<ol style="list-style-type: none"> <li>1. 1 December 2017, renewed and extended to 2 September 2019</li> <li>2. 16 November 2018</li> </ol>

Signatory Cities:	EU City: City of Essen JAPAN City: City of Koriyama
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*You may add other document(s) for cooperation signed between the two cities (e.g. protocol of cooperation or any equivalent document), if there are any.*

<b>Cooperation Area:</b>	<p><i>List main theme/area of cooperation which is stated in the Partnership Agreement or other document(s) for cooperation between the two cities</i></p> <ul style="list-style-type: none"> <li>● <b>Renewable energy</b></li> <li>● <b>Medical device related industry</b></li> <li>● <b>Water management</b></li> <li>● <b>Smart city</b></li> <li>● <b>Regional and urban innovation, competitive, inclusive and sustainable economic growth</b></li> <li>● <b>Urban transport</b></li> <li>● <b>Education and development of future generations</b></li> </ul> <p>The exchange between Essen and Koriyama has not only contributed to factual issues – which is documented by the diversity of this LAP – but also enabled a change of perspective. Seemingly obvious procedures and viewpoints could be reconsidered constructively against the background of the valuable input from the respective cooperation partner.</p> <p>The design of the city-to-city cooperation and the Local Action Plan as structural guideline enabled an effective operationalisation of the achievement of SDGs on municipal level.</p> <p>The intensive exchange with our partners, especially the delegations trips, extended the intercultural competence on organisational and personal level.</p> <p>Also, the city-to-city cooperation has efficiently fostered the creation of new and the intensification of existing networks of local actors. The Triple-Helix Model of cooperation between research, business and administration could prove its usefulness under practical conditions.</p> <p>Thus, besides the relevance of the proposed actions for the joint achievement of sustainable development, expertise and capacity for intra-municipal cooperation on international level could be extended.</p>
<b>Contribution to the EU Urban Agenda themes:</b>	<p><b><i>EU city is requested to name the related European Urban Agenda theme (please see table below).</i></b></p>

	<p style="text-align: center;"><b>12 PRIORITY THEMES</b></p> <p style="text-align: center;">PARTNERSHIPS WHICH ALREADY STARTED</p> <div style="display: grid; grid-template-columns: repeat(6, 1fr); gap: 10px;"> <div style="text-align: center;"> INTEGRATION OF MIGRANTS &amp; REFUGEES</div> <div style="text-align: center;"> AIR QUALITY</div> <div style="text-align: center;"> HOUSING</div> <div style="text-align: center;"> URBAN POVERTY</div> <div style="text-align: center;"> CIRCULAR ECONOMY</div> <div style="text-align: center;"> CLIMATE ADAPTATION</div> <div style="text-align: center;"> ENERGY TRANSITION</div> <div style="text-align: center;"> URBAN MOBILITY</div> <div style="text-align: center;"> DIGITAL TRANSITION</div> <div style="text-align: center;"> PUBLIC PROCUREMENT</div> <div style="text-align: center;"> JOBS &amp; SKILLS IN LOCAL ECONOMY</div> <div style="text-align: center;"> SUSTAINABLE USE OF LAND AND NATURE-BASED</div> </div>
Focus:	<p><i>Please describe the focus of your theme/area of cooperation.</i></p> <ol style="list-style-type: none"> <li><b>1. Development of renewable energy industry with the collaboration of industry, academia and government (sharing the expertise on renewable energy between the government, research institutes, and the private sector)</b></li> <li><b>2. Development of medical device-related industry with the collaboration of industry, academia and government (aiming at future progress of the industry, stimulating collaboration and business cooperation between medical institutions and the private sector)</b></li> <li><b>3. Local and urban innovation (development of human resources and sharing expertise on water management)</b></li> </ol>

### 3. SPECIFIC OBJECTIVES

Identify up to three specific objectives that your cities (EU and JAPAN cities) aims to reach. Repeat the table as many times as needed.

Specific Objective n°1:	<p><i>Name the <b>first objective</b> for your cities' participation in the IUC program.</i></p> <ol style="list-style-type: none"> <li><b>1. Deepen mutual understanding and strengthen relationships between the two cities, which will foster prosperity for both cities.</b></li> <li><b>2. Raise awareness of Essen and Koriyama and disseminate up-to-date information to the rest of the world</b></li> <li><b>3. Take the partnership between the two cities one step further after the end of the IUC program period sponsored by the EU, which will enable the continued learning of effective policy-making and strategy development from the standpoint of administrative systems, structures, and technologies.</b></li> </ol>
Contribution to SDGs	<p><i>From SDGs relevant to IUC, please select those your activities are contributing to</i></p>


**SUSTAINABLE DEVELOPMENT GOALS**  
 世界を変えるための17の目標



- 6.4 : By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
- 7.a: By 2030, enhance research for renewable energy, energy efficiency and clean energy as in fossil fuel with low environmental load. In addition, enhance international cooperation that will promote investment for energy-related infrastructure and clean energy technology.
- 8.2: Achieve a high level of economic productivity that will realise diversity, technical development and innovation by concentrating on working with value added, as well as labour intensive sectors.
- 8.3: Promote policies that will focus on development of manufacturing companies, appropriate job creation, startups, with creativity and innovation. In addition encourage starting SMEs and growing them by allowing for better access to financial services.
- 9.b: Recognise a policy environment for industrial diversity, development of commodities with value added aspects that will lead to technical development, research and innovation in developing countries.
- 11.3: By 2030, facilitate comprehensive and sustainable urban development and enhance the capacity of all nations in terms of participatory, inclusive and sustainable habitat planning and management.
- 11.5: By 2030, focus on protecting those in poverty and vulnerable by reducing the number of deaths and victims to water-related hazards that will dramatically reduce the ratio of direct economic damages in comparison to the global GDP.
- 11.b: By 2020, dramatically increase the number of cities and habitats that have introduced or implemented comprehensive policies or plans that will seek inclusive, resource efficient, climate change mitigation and adaptation, resilient societies. The Sendai Framework for Disaster Risk Reduction 2015-2030 will be used as

	<p>reference for drafting and implementing comprehensive disaster risk management at all levels.</p> <p>13.1 : Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries 17.16 Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilise and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries</p>
<p>Description:</p>	<p><i>Shortly describe what do you mean by this objective and summarise the main activities.</i></p> <p>Exchanging the information on good practices towards a sustainable economic growth (the long-term development of local industries enabled by the business expansion of local enterprises) and the efforts towards local and urban innovations, the City of Koriyama organises exchange visits paid by city government officials of each city as well as representatives of industrial circles and research institutes located in each city, holds joint seminars, conducts joint research activities and has discussions on leading policies of each city to enhance mutual learning.</p> <ol style="list-style-type: none"> <li>1. Inclusive and sustainable economic growth (renewable energy and medical device related industry, etc.)</li> <li>2. Local and urban innovations (energy management, water management, etc.)</li> </ol>
<p>Expected Result:</p>	<p><i>What is the change you intend to achieve by working on this objective?</i></p> <p>Create mutual understanding and stronger relationships between the two cities through knowledge transfer of primarily energy and water management that will enhance climate, social, economic resilience in these sectors.</p>
<p><i>Result indicator:</i></p>	<p><b>For Essen</b></p> <ol style="list-style-type: none"> <li>1. Increase the effectiveness and efficiency of the thermal utilisation of sewage sludge, in particular drying and incineration through active knowledge transfer.</li> <li>2. Increase the effectiveness and efficiency of the thermal utilisation of sewage sludge, in particular gasification through active knowledge transfer.</li> <li>3. Climate adaptation in the water industry through active knowledge transfer.</li> <li>4. Documentation of the integral cooperation between the cities to enhance the joint efforts and as support for other projects.</li> </ol> <p><b>For Koriyama</b></p> <ol style="list-style-type: none"> <li>1. Environment: secure electricity in the events of disasters, regional decarbonisation (investment in energy savings technologies, etc.) and mitigation of the impact to the environment</li> </ol>

	<ol style="list-style-type: none"> <li>2. Water management: accessible water resources and water management which ensure citizens' safe living environments</li> <li>3. Economy: creation of new industries and employment</li> <li>4. Society: take steps against socialised knowledge, nurture globally competent human resources and take countermeasures against the ageing society and declining population</li> </ol>
Target groups:	Local governments, research institutes, higher education institutions including universities, industry support organisations, private sectors, citizens' groups, medical institutions, etc.

<b>Specific Objective n°2:</b>	<p>Name the <b>second objective</b> for your cities' participation in the IUC program.</p> <p>Enhance the comprehensive potential of the region, bolster the competitiveness of local industries and promote the creation of new businesses</p>
Description:	<p>Organise seminars in collaboration with the 'Networking Meeting of Academic and Research Institutes in Koriyama', visits to Germany in cooperation with the industrial circles to encourage the technological exchanges and develop new foreign markets</p>  <p><b>'Networking Meeting of Academic &amp; Research Institutes in Koriyama'</b></p>
Expected Result:	Create a foundation in which globally competitive and innovative industries can be fostered in the two cities.
Result indicator:	<p><b>For Essen</b></p> <ol style="list-style-type: none"> <li>1. Knowledge transfer regarding products, markets, customer relations and logistics in the field of medicine and health industry</li> <li>2. Enhancement of the quality of medical research and teaching with relevant benefits for security and health</li> <li>3. Achievement of synergy effects and innovations in the fields of technology, processes and didactics for medical training centres</li> <li>4. Attracting and supporting of start-ups as highly innovative SMEs and foster the relevance of both cities as location of research and development</li> <li>5. Development of environmental friendly technologies in field of storage and use of energy to foster the scientific and economic relevance of both cities</li> <li>6. Development of innovate products in the energy sector and contribution to the methodological advancement of cross-border and multi-sectoral cooperation</li> </ol>





	<p><b>For Koriyama</b></p> <ol style="list-style-type: none"> <li>1. Economy: promote innovative technologies by research institutes and business sectors</li> <li>2. Environment: nurture and enhance hydrogen energy and fuel cell related industries</li> <li>3. Medicine: enhance development and commercialisation of medical device, and promote higher level of medical services</li> </ol>
Target groups:	Research institutes, higher education institutions including universities, industry support organisations, private sectors, etc.
<p><b>Specific Objective n°3:</b></p>	<p>Name the <b>third objective</b> for your cities' participation in the IUC program.</p> <p>Opportunities to learn 'advanced expertise and technologies which create the future of society', 'scientific thinking, decision-making and the ability of public relations', 'receptiveness to diverse and different values', 'active citizenship' and 'resilience' are ensured through the prior preparation and the conduct of academic internships. It also enables the regional and urban innovation and the development of human resources which contribute to the inclusive and sustainable economic growth</p>
Description:	In close cooperation among industry, academia and government, the cities of Essen and Koriyama will drive some initiatives to develop human resources who bear the future innovation.
Expected Result:	Create a foundation for the next generation in which globalisation, science and innovation serve as the basis of the education system.
Result indicator:	<p><b>For Essen</b></p> <ol style="list-style-type: none"> <li>1. Internationalisation and enhanced attractiveness of education in medical courses.</li> </ol> <p><b>For Koriyama</b></p> <ol style="list-style-type: none"> <li>1. Education: advanced knowledge, technical capabilities, scientific thinking and decision-making, expression, dissemination capability and public relations capabilities, tolerance to diverse values, citizen activeness, and resilience</li> <li>2. Economy: increase and enhance stability of industrial bases and industrial competitiveness by the development of human resources, creation of new businesses by the development of human resources</li> <li>3. Society: sharing wisdom and contribution to society</li> </ol>
Target groups:	Higher educational institutions including universities, etc.

## 4. PLANNED ACTIVITIES

Explain how your pairing, **two cities jointly or each city individually**, will reach your specified objectives and obtain the expected results. Please write as many activities as you need to reach each specific objective.

Some specific objectives might work as a pilot project composed of several activities.

The two cities share the common objectives, but activities can be implemented jointly by two cities, or individually by each city.

<b>Specific Objective 1:</b>	<p><i>Please repeat the first objective specified in “3. SPECIFIC OBJECTIVE”</i></p> <ol style="list-style-type: none"> <li>1. Take the partnership between the two cities one step further after the end of the IUC program period sponsored by the EU, which will enable the continued learning of effective policy-making and strategy development from a standpoint of administrative systems, structures and technologies.</li> <li>2. Deepen mutual understandings and strengthen relationships between the two cities, which will foster prosperity for both cities.</li> <li>3. Raising awareness of Essen and Koriyama and disseminating the up-to-date information to the rest of the world</li> </ol>
<b>1.1 Activity Name:</b>	<p><i>Short name of the activity to achieve the specific objective 1</i></p> <p>Partnership Project -Towards a closer relationship of stakeholders between the cities of Essen and Koriyama</p>
<b>Activity proponent</b>	<p>EU City: City of Essen (Departments of International Affairs, Water Management, Environment, City of Essen and Essen Economic Development Agency (EWG))</p> <p>JAPAN City: City of Koriyama (Departments of Policy Development, Culture and Sports, Environmental Affairs, Health and Welfare, Industry and Tourism and Construction and Traffic, Water and Sewerage Bureau, City of Koriyama)</p>
<b>Activity leader:</b>	<p>EU City: Lord Mayor, City of Essen JAPAN City: Mayor, City of Koriyama</p>
<b>Brief Description:</b>	
<p><i>Describe the activity and try to show the relation to the specific objective and the expected result Please list the sub-activities with their brief description, if the activity is composed of multiple set of activities.</i></p> <p><b>Proposed by Essen</b></p> <p><b>Sub-Activity 1.1.1 – Water Management</b></p> <ul style="list-style-type: none"> <li>● Knowledge transfer</li> </ul> <p><b>(1) Knowledge transfer regarding sewage sludge treatment and disposal (e.g. combustion) in consideration of contained pollutants</b></p> <p>Highly efficient sewage treatment plants are a central component of</p>	
<div style="display: flex; justify-content: flex-end; align-items: center; gap: 10px;"> <div style="background-color: #5bc0de; padding: 5px; text-align: center; width: 60px;"> <b>6</b> CLEAN WATER AND SANITATION </div> <div style="background-color: #ffc107; padding: 5px; text-align: center; width: 60px;"> <b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE </div> </div>	

contemporary water management. The cleaning process generates large quantities of sewage sludge, the disposal of which has to be carried out under the aspect of environment protection and economic efficiency.

The associations for water management of the Ruhr district have developed innovative solutions in the field of drying and incineration of sewage sludge.

The expected roles and contributions by key stakeholders in Essen are:

- a. Initiation of knowledge transfer, practical transfer from the municipal water management
- b. Practical transfer from the municipal water management
- c. Knowledge transfer from research, identification of potentials and potentially initiation of a research and development project
- d. Participation in a possible research and development project

## **(2) Knowledge transfer regarding the transformation of digester gas to biogas in sewage treatment plants and its utilisation**



Highly efficient sewage treatment plants are a central component of contemporary water management. The cleaning process generates large quantities of sewage sludge, the disposal of which has to be carried out under the aspect of environment protection and economic efficiency.

The associations for water management of the Ruhr district have developed innovative solutions in the field of gasification of sewage sludge.

The expected roles and contributions by key stakeholders are:

- a. Initiation of knowledge transfer, practical transfer from the municipal water management
- b. Practical transfer from the municipal water management
- c. Knowledge transfer from research, identification of potentials and potentially initiation of a research and development project
- d. Participation in a possible research and development project

## **(3) Knowledge transfer regarding the municipal water management: climate resilience, rainwater management, sewer management**



Global urbanisation and increased requirements on the quality and safety of water supply and sanitation necessitate innovative and integral as well as technical and procedural approaches. This is also an important contribution to the climate resilience of metropolitan areas. Relevant areas for action in this context are resource management as well as rainwater and wastewater management.

An inter-communal exchange of knowledge and experience can contribute to this.

The expected roles and contributions by key stakeholders are;

- a. Initiation of knowledge transfer, practical transfer from the municipal water management
- b. Knowledge transfer from research, identification of potentials and potentially initiation of a research and development project

c. Participation in a possible research and development project

### ***Sub-Activity 1.1.2 – Multi-faceted Field***

#### **● Documentation of the integral cooperation between the cities to enhance the joint efforts and as a support for other projects**



During the participation in the City-to-city Programme of IUC Koriyama and Essen have gained many experiences which could be documented in a suitable form, as it will basically already been achieved through the Local Action Plans. Such documentation could be supplemented by other forms of methodological information and knowledge acquisition.

Documentation and updating of methodological information and knowledge would enable a continuous improvement process of inter-municipal cooperation. Experiences could also be transferred to comparable processes.

### ***Proposed by Koriyama***

The City of Koriyama intends to strengthen the relationships between the relevant departments of each city and share the good practices and carry on human exchanges not only in the fields of renewable energy and medical device related industry but in diverse fields to build multitiered and multifaceted frameworks.

Exploring latent needs and solutions that the each city and its stakeholders have, the matching on technologies, policies, leading practices, etc. will be energetically facilitated, which enables the inclusive and sustainable economic growth and the development of local industries referred to in the SDGs adopted by the UN.

#### **● Expected Results**

1. Environment: secure electricity in the events of disasters, regional de-carbonization (investment in energy savings technologies, etc.) and mitigation of the impact to the environment
2. Water management: accessible water resources and water management which ensure citizens' safe living environments
3. Economy: creation of new industries and employment
4. Society: adapt to knowledge societies driven by the spread of ICT and global interconnectedness, nurture globally competent human resources and take countermeasures against the aging society and declining population

### ***Sub-Activity 1.1.1 - Renewable energy***

#### **● Consultation project on developing environmental management and energy savings systems**



#### **1. Promotion for utilization of locally-generated Energy in Koriyama**

##### **(1) Study tour on Stadtwerke<sup>2</sup> in Germany in FY2019 conducted by the Environmental Affairs Department, City of Koriyama**

In a bid for taking tangible steps against climate change from the viewpoint of the SDGs adopted by the UN, establishing a regional power producer and supplier (PPS) network and effectively leveraging renewable energy sources in Koriyama and its neighboring areas, 'the Study Group on Energy Generation, Storage and Savings<sup>17</sup>' is scheduled to conduct a study

tour in Germany to learn Stadtwerke. (Accompanied by some officials of Koriyama City government)

**(2) Pilot project to develop a Virtual Power Plant (VPP)<sup>3</sup> with Tohoku Electric Power Co., Inc. launched by the Environmental Affairs Department, City of Koriyama**

Remotely monitoring the power generated by photovoltaics and the battery charge remaining of fuel cells to optimize the utilization of them, the City of Koriyama will look into the feasibility of the effective utilization of the surplus power and the establishment of the system which enables the longer durability of fuel cells.

The results of the verification will be shared and utilized as solutions to the parallel challenges in the field of the environment between the two cities of Essen and Koriyama.

Tohoku Electric Power Co., Inc., which the City of Koriyama cooperates with entered into the partnership agreement with Next Kraftwerke in Germany, one of the Europe's largest Virtual Power Plant operators and power traders, in May 2019 on the commercialization of the VPP and the verification of new services.

<sup>1</sup> 'The Study Group on Energy Generation, Storage and Savings', consisting of 25 entities in Fukushima Prefecture, is a mixture of academia, businesses and government. The study group's missions are to support Fukushima's revitalization by developing energy industries in the three areas of energy generation, energy storage, and energy savings.

<sup>2</sup> Stadtwerke are small and medium sized municipal utilities that provide local energy and public services including electricity, gas, water supply, waste water treatment, public transportation and develop infrastructures throughout Germany.

<sup>3</sup> Virtual Power Plant (VPP) is an integrated power producer which aggregates dispersed energy resources including power generation facilities and storage batteries in municipalities, private sectors and households by means of utilizing information technologies such as IoT and centralizing it with remotely controlled systems.

**(3) Establishing a regional power producer and supplier (PPS) network, the Environmental Affairs Department, City of Koriyama**

After the Great East Japan Earthquake in 2011 and the full liberalization of the electricity market in April 2016, a myriad of regional power producer and supplier (PPS) networks established with the partial investment by municipalities to promote the locally generated and utilized energy and to reinvigorate the region in Japan.

Serving as a catalyst for further implementation of renewable energy and of solutions to regional challenges, the City of Koriyama focuses on conducting feasibility studies on the development of the regional power producer and supplier (PPS) network to effectively utilize renewable energy in the area including power generation at refuse disposal facilities in the city.



'The Study Group on Energy Generation, Storage and Savings'

**2. Visualization project on energy savings at public facilities**

In the aim of setting a specific mitigation target of CO<sub>2</sub> emission and further promotion of energy savings, the assessment of energy savings in public facilities is in progress and a concrete plan for installing energy saving equipment at public facilities has been developed.

## 2017-2018

- (1) Data evaluation to screen energy-saving effective facilities out of approximately 920 public facilities (Koriyama City Hall, Koriyama City Hall branch offices, cultural facilities, health and welfare facilities, and community centers, elementary and junior high schools, nurseries, etc.)
- (2) Assessment of energy savings at selected 10 public facilities (cultural center, the west building of Koriyama City Hall, general welfare center, the office of the Bandai Atami Hot Springs, etc.) was conducted, and their potential for energy savings were evaluated on-site.
- (3) 3 facilities (General Local Wholesale Market, Koriyama Skating Link and the office of the Bandai Atami Hot Springs) were finally selected.

## 2019

- (1) Planning for implementing energy savings equipment (3 facilities)

## 2020

- (1) Installation of energy savings equipment at 3 public facilities is scheduled. (It is envisioned that General Local Wholesale Market and Koriyama Skating Link would be funded by the 'Promotion Program of Municipal Carbon Management' of the Ministry of the Environment, and the office of the Bandai Atami Hot Springs would utilize 'Support Program for Revamping into Highly Efficient Equipment' of the Ministry of the Environment.

### ●Promotion project for research and business matching



#### 1. Site visit to Essen in tandem with the industrial circles in FY2019 paid by Industry and Tourism Department, City of Koriyama

In an attempt to deepen the relationship in industry based on the collaboration between the State of North Rhine-Westphalia and Fukushima Prefecture, and the MOU concluded between the cities of Essen and Koriyama, the City of Koriyama is planning to send a delegation with the industrial circles to Essen and participate in 'E-world, energy & water 2020', one of the largest trade fairs on renewable energy in Europe, and develop further industrial clusters in the fields of renewable energy and medical device related industry.



#### *Sub-Activity 1.1.2 - Medical device related industry (healthcare)*

#### 1. Collaboration between medical institutions

#### (1) Internship program with the Faculty of Medicine, Duisburg-Essen University in FY2020 coordinated by Health and Welfare Department, City of Koriyama

Since the MOU on the research of Boron Neutron Capture Therapy (BNCT) entered into between the Faculty of Medicine, Duisburg-Essen University and Southern Tohoku General Hospital, the MOU on city-to-city cooperation in 2017 and the partnership agreement based on the IUC project in 2018 has accelerated the efforts for further collaboration between the two cities in other fields. The personnel exchanges are scheduled in an attempt to develop the medical device related industry and human resources. In FY2020, Southern Tohoku General Hospital is



Discussions on the management of rain water and waste water

scheduled to host a medical intern from the Faculty of Medicine, Duisburg-Essen University in endeavor to promote information exchanges at both medical institutions.

### **Sub-Activity 1.1.3 - Water Management**



#### **1. Exchanges of expertise on water management: Department of Construction and Traffic and Water and Sewerage Bureau, City of Koriyama and Department of Water Management, City of Essen**

Through the site visits conducted in each city, the two cities have exchanged expertise on 'management of rain water and waste water', 'treatment of sludge from wastewater and its disposal', 'countermeasures for flood control and wastewater', 'increasing safety and improving the water quality' and 'efficient use of water resources', etc.

Specifically, the both cities share the challenges over water management which is attributed by recent climate change. Taking it into consideration for the urban planning and development of both cities, the two cities also proactively address flood control.

Climate change and its impacts being addressed by diverse countermeasures, and information exchange between the relevant departments in each city accelerate the efforts in the development of an urban development that ensures citizens' safe and comfortable environment.

### **Sub-Activity 1.1.4 – Multi-faceted Fields**



#### **1. Visit paid by Lord Mayor, City of Essen, to Koriyama to strengthen the partnership in FY2019 hosted by Industry and Tourism Department, City of Koriyama**

The delegation led by Lord Mayor, City of Essen is scheduled to visit Koriyama in September 2019. Some visits to the local enterprises are also scheduled. The both cities reaffirm the continued cooperation after the period of International Urban Cooperation (IUC) project based on the MOU on city-to-city cooperation. The continued cooperation covers not only the fields of renewable energy and medical device related industry but the fields of education and development of future generations.

#### **2. Global exchange on culture, industry and agriculture organized by Culture and Sports Department, City of Koriyama**

##### **(1) The 40<sup>th</sup> anniversary of the reconstruction of Mr. van Doorn's tombstone and visit to the City of Brummen in the Netherlands, and the City of Essen in Germany in 2019**



Shedding light on the feats achieved by Mr. van Doorn, a civil engineer from the Netherlands who contributed the construction of the Asaka Canal which laid the foundation of the development of Koriyama, the delegation is scheduled to visit the Netherlands and Germany in attempts to enhance the friendship with the City of Essen and the City of Brummen, one of the sister cities of Koriyama, to enrich the knowledge and deepen the understanding of the Netherlands' farming. Moreover, the delegation is planning to visit the greenfuel project, the lighthouse project of the European Green Capital - Essen 2017 and the first methanol fuel cell ship in Germany in Essen in October 2019.

##### **(2) Koriyama City International Exchange Ambassador**

The City of Koriyama assigned a medical doctor who was the architect of the MOU entered into between the Faculty of Medicine, Duisburg-Essen University and Southern Tohoku General Hospital on the research of Boron Neutron Capture Therapy (BNCT) as Koriyama

City International Exchange Ambassador in January 2019, who participated the study tour to Essen based on the International Urban Cooperation (IUC) project as a member of the delegation in November 2018.

The ambassador disseminates the information on Koriyama's beauties, how Koriyama is regarded in the world (in the City of Essen) and provides support for the development of globally-competent human resources from the City of Koriyama.

**3. Super Science High school (SSH) Program<sup>4</sup> by Fukushima Prefectural Asaka High School in FY2020: Policy Development Department, City of Koriyama**

Based on the Super Science High School (SSH) Program sponsored by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Fukushima Prefectural Asaka High School located in Koriyama, is scheduled to organize a study tour for its students and teachers to Essen. The enhanced partnership between the cities of Koriyama and Essen, Essen Economic Development Agency (EWG), and the Faculty of Medicine, Duisburg-Essen University as well as the initiatives driven by the City of Koriyama, businesses in the prefecture, the research institutes will serve as the basis of this project. It is hoped that this will develop the globally-minded next generations in the STEM field which are capable of creating future innovations according to the 17 SDGs adopted by the UN.



**Fukushima Prefectural Asaka High School in Koriyama**

<sup>4</sup> Super Science High School Program is A program led by the Ministry of Education, Culture, Sports, Science and Technology (MEXT). Its objectives are to cultivate students' scientific abilities, with strong scientific capabilities and logical thinking who will be able to lead the society.

**Outputs Expected (with quantitative indicators, if possible):**

***Proposed by Essen***

- Development of innovative, environmentally friendly and cost-effective sewage sludge treatment methods, in particular sewage sludge incineration, through active knowledge transfer
- Development of innovative, environmentally friendly and cost-effective sewage sludge treatment methods, in particular sewage sludge gasification, through active knowledge transfer
- The inter-communal exchange of knowledge and experience can make an important contribution to the further development of water management in the context of climate change. In addition to technical innovations, insights into the influence of political, demographic, legal and natural conditions can be gained. Experiences about the effectiveness and acceptance of measures can be shared.
- Documentation and updating of methodological information and knowledge would enable a continuous improvement process of intermunicipal cooperation. Experiences could also be transferred to comparable processes.

***Proposed by Koriyama***

- Tangible products or processes that result from the successful completion of the exchange activities



	<ul style="list-style-type: none"> <li>● Study tour on Stadtwerke - accompanied by some officials from Koriyama City Government in August 2019</li> <li>● Installation of energy saving equipment to city-owned public facilities</li> <li>● Business missions to Essen - accompanied by some officials from Koriyama City Government in February 2020</li> <li>● Hosting interns from the Faculty of Medicine, Duisburg-Essen University at medical institutions in Koriyama in July 2020</li> <li>● Visit to Koriyama paid by Lord Mayor, City of Essen to strengthen the partnership in September 2019</li> <li>● Study tour on culture, industry, and agriculture led by Mayor of Koriyama City to the City of Brummen, the Netherlands and the City of Essen, Germany in October 2019</li> <li>● Study tour to Essen on Super Science High School (SSH) programme in winter 2020, roughly 10 students and some teachers participate</li> <li>● Organising joint seminars on the occasion of the visits by delegations from Essen to Koriyama in October 2019</li> <li>● Hosting 2 scholars in Koriyama on the Alfred Krupp Pupils Scholarship programme for practical business training in April 2020</li> </ul>
<p><b>Specific Timeframe:</b></p>	<p><i>Period of implementation.</i> <i>Please specify the timeframe appropriate for the specific objective and activities. For example, three years after the plan is published.</i></p> <p>Next three years as the target period for achieving the goals</p>
<p><b>Estimated Budget, and budget sources if applicable:</b></p>	<p><i>Total estimated budget to be drafted in consultation with your counterpart in case of activities to be implemented jointly. Please demonstrate an estimate of the budget to implement the activity for reaching the specified objectives. Please indicate possible budget sources, if applicable.</i></p> <p><b>Proposed by Essen</b></p> <ul style="list-style-type: none"> <li>● <b>Water Management</b></li> </ul> <p><b>(1) Knowledge transfer regarding sewage sludge treatment and disposal (e.g. combustion) in consideration of contained pollutants</b></p> <p>The budget is not available yet.</p> <p><b>(2) Knowledge transfer regarding the transformation of digester gas to biogas in sewage treatment plants and its utilization</b></p> <p>The budget is not available yet.</p> <p><b>(3) Knowledge transfer regarding the municipal water management: climate resilience, rainwater management, sewer management</b></p> <p>The budget is not available yet.</p>

● **Multi-faceted fields**

**(1) Documentation of the integral cooperation**

The budget is not available yet.

*Proposed by Koriyama*

● **Renewable Energy**

**1. Environmental energy management system, energy saving consultancy**

**(1) Promotion of locally-produced and consumed energy**

Study tour on Stadtwerke (Environmental Affairs Department, the City of Koriyama) 1,803,000 JPY (Approx. 14,800 EURO)

Demonstration experiment with Tohoku Electric Power Co., Inc. (Environmental Affairs Department, the City of Koriyama), budget N/A

Establish a regional power producer and supplier (PPS) network: (Environmental Affairs Department, the City of Koriyama), 10,000,000 JPY (Approx. 82,100 EURO)

**11,803,000 JPY (Approx. 96,800 EURO) in total (Environmental Affairs Department, the City of Koriyama)**

**(2) Energy saving visualization project**

Implementation design to be conducted by relevant departments in charge of the management of public facilities in 2019

**(3) Promotion for research and business matching**

Visit to Essen in cooperation with business circles organised by the Industry and Tourism Department: 3,200,000 JPY (Approx. 26,300 EURO)

● **Medical device related industry (healthcare)**

**1. Collaboration with the medical institutions in Koriyama**

Medical institutions in Koriyama host an intern from the Faculty of Medicine, Duisburg-Essen University

The costs are taken care of by the intern. (Expenses for flights, accommodations during the internship, etc.)

● **Multi-faceted fields**

**1. Global exchanges on culture, industrial, agriculture: Culture & Sports Department, City of Koriyama**

40<sup>th</sup> anniversary of the reconstruction of Mr. van Doorn's tombstone and a site visit to the City of Brummen in the Netherlands and the City of Essen in Germany in 2019, Culture & Sports Department, City of Koriyama: 7,511,000 JPY (Approx. 61,600 EURO)

● **Super Science High School (SSH) programme of Fukushima Prefectural Asaka High School**

The expenses of flights and accommodations, etc. for the students and teachers are taken care of by Fukushima Prefectural Asaka High School

	<p><b>●Alfried Krupp Pupils Scholarship programme for practical business training in April 2020</b></p> <p>Two 17-year old scholars from Essen stay in Koriyama for four weeks to do their internships; expenses for flights and accommodation, etc. for the scholars are taken care of by Alfried Krupp Foundation</p> <p>* Calculated by 1 EURO=121.93JPY, as of 9 July 2019</p>
EU Stakeholder(s)	Description & main role and responsibilities
City of Essen, Department of Water Management	Initiation of knowledge transfer, practical transfer from the municipal water management; knowledge transfer from research, identification of potentials and potentially initiation of a research and development project; participation in a possible research and development project.
City of Essen	Documentation of project
JAPAN Stakeholder(s)	Description & main role and responsibilities
Policy Development Department, City of Koriyama	Promote and coordinate collaborations between industry, academia and government on the Super Science High School program of Fukushima Prefectural Asaka High School
Culture and Sports Department, City of Koriyama	Promote collaborations between internal and external stakeholders and conduct site visits to Essen on global exchange on culture, industry and agriculture as well as the programme 'Koriyama City International Ambassador'
Environmental Affairs Department, City of Koriyama	Promote the programme on local generation and consumption of energy. Furthermore, implement the programme for visualising energy savings
Healthcare and Welfare Department, City of Koriyama	Promote collaboration in the field of regional medicine
Industry and Tourism Department, City of Koriyama	Promote further collaboration between the two cities and serve as the point of contact for overall coordination as well as research matching and business matching
Construction and Traffic Department	Information exchange on water management with Essen city's Department of Water Management
Water and Sewerage Bureau, City of Koriyama	

Koriyama City Hydrogen Promotional Research Association	Information exchange on utilising hydrogen for mobility purposes, and local generation and consumption of hydrogen
Koriyama Medical Association	Information exchange on local medical service
Medical Institutions	Promote education of globally-minded people by hosting interns, and also seek collaboration that helps grow the medical industry in the future
International Exchange Ambassador of Koriyama City	Promote the attractions of Koriyama city overseas as well as gather information from overseas that will be useful for the city to nurture people who will be able to thrive globally
Universities and higher education institutions	Offer advice on industrial collaboration (renewable energy, medical sector), and promote collaboration that will support the capacity development of human resources.

<b>Specific Objective 2:</b>	<i>The second objective named in "3. SPECIFIC OBJECTIVE"</i>  Enhance the comprehensive potential of the region, bolster the competitiveness of local industries and promote the creation of new businesses
<b>2.1. Activity Name:</b>	<i>Short name of the activity to achieve the specific objective 2</i>  ● <b>Storage and Consumption of Energy Project</b> ● <b>Promotion Project for Research and Business Matching</b>
<b>Activity proponent</b>	EU City: City of Essen: Office of International Affairs Gas- und Wärme-Institut in Essen (GWI) Faculty of Medicine, University of Duisburg-Essen Essen Economic Development Agency (EWG) JAPAN City: City of Koriyama: Industry & Tourism Department Fukushima Renewable Research Institute, AIST (FREA) Energy Agency. Fukushima Fukushima Medical Device Industry Promotion Agency (FMDIPA) Koriyama City International Exchange Ambassador
<b>Activity leader:</b>	EU City : Lord Mayor, City of Essen JAPAN City : Mayor, City of Koriyama

## Brief Description:

Describe the content of activities.

Please list the sub-activities with their brief description, if the activity is composed of multiple activities.

### Proposed by Essen

#### **Sub-Activity 2.1.1 – Medicine and Health Industry**

- **Business cooperation**

The health industry is an important social and economic sector with high growth potential. In 2018 it generated approx. 12% of the German GDP.iii Germany is one of the leading manufacturers of medical devices after the USA and Japan, with a high share of 93% of SMEs.iv



The subject of the proposed activity is the mutual establishment of business cooperation between medical service providers, teaching and research institutions, and between health sector companies from Koriyama and Essen, especially SMEs. The goal is to turn mutually recognisable and existing potentials into win-win situations and thus creating economic and societal added-value effects. The large number of committed mutual actors in Koriyama / Fukushima and in Essen / North Rhine-Westphalia proves the sustainable meaningfulness of this project.

Expected roles and contributions by key stakeholders are:

- (1) Initiation and support of business cooperation
- (2) Support of business cooperation
- (3) Active participation in business cooperation

- **Physician exchange in the disciplines of oncology, traumatology, cardiology and old age diseases**



Koriyama and Essen are equally important locations of medical research and teaching as well as treatment. Institutions like – amongst others – the Southern Tohoku Hospital Group and the University Hospital Essen have an excellent reputation among experts as well as among the general public. The intended activity aims at establishing an exchange of physicians from both cities in the disciplines of oncology, traumatology, cardiology and old age diseases.

Expected roles and contributions by key stakeholders are:

- (1) Initiation and implementation of a physician exchange

- **Achievement of synergy effects and innovations in the fields of technology, processes and didactics for medical training centres**



The Fukushima Medical Device Development Support Centre and the University Hospital Essen both have high-quality training facilities. The suggested action aims at combining their resources and competence through direct cooperation and in the context of the outlined exchange of physicians and students.

Expected roles and contributions by key stakeholders:

- (1) Initiation and implementation of training cooperation

### **Sub-Activity 2.1.2 - Renewable Energy**

#### **● Joint digital start-up platform with the objective of mutual market transparency and market opening**



Essen is strongly committed to attract innovative and technology-oriented start-ups by establishing a suitable ecosystem. In spring 2019 an economic delegation from Japan, organised by JETRO, had the opportunity to learn more about the progress of the “Scale-up City Essen”. Thus Essen suggests transferring this potential to the medicine and health industry by establishing a joint digital start-up platform with the objective of mutual market transparency and market opening.

Expected roles and contributions by key stakeholders:

- (1) Initiation and support of business cooperation
- (2) Idea finding and scientific support
- (2) Provision of venture capital

#### **● Storage and use of energy under the application of innovative energy carriers and technologies / P2X (e. g. power to methanol technology)**



Production, transport, storage and use of renewable energies make up the key factors of a sustainable and future-proof energy industry.

Promising approaches in this regard include *inter alia* hydrogen technology and various Power2X methods of energy storage.

In Koriyama and Essen, relevant companies and research institutions are located whose collaboration in R&D could unlock significant innovation potential.

Expected roles and contributions by key stakeholders:

- (1) Knowledge transfer from research, identification of potentials and potentially initiation of a research and development project
- (2) Participation in a possible research and development project

### **Proposed by Koriyama**

For further implementation of renewable energy, a myriad of challenges need to be addressed going forward, including alleviating fluctuation of power generation at different times of the day, high costs and biased distribution from area to area.

It is strongly hoped that joint experimental studies on renewable energy are conducted between research institutes in each city. This will enable a solution to the common challenges and will accelerate the further implementation of renewable energy which is considered pivotal for the mitigation of global warming and realisation of sustainable development.

Furthermore, by enhancing industrial competitiveness in Koriyama and encouraging the creation of new businesses by a ripple effect, the efforts in promoting the further development of globally-competitive and highly efficient medical device need to be intensified.

Collaboration by research institutes serves as a catalyst for further collaboration between research institutes and the private sector as well as among private sector entities, which will lead to the improvement of product development. The City of Koriyama strives to enhance its efforts in

creating local and urban innovations by encouraging the private sector entities to set up booths at trade fairs and to enter into foreign markets.

### Expected results

1. Economy: stimulate innovations in technologies by research institutes and the private sector, improve product development in the private sector, encourage private sector entities to enter into foreign markets, create new businesses and employment, and increase the total sum of production sales, employment, and population
2. Environment: nurture and invigorate hydrogen energy and fuel cell related industries
3. Medicine: promote the development and commercialisation of medical devices and aim at a higher level of medical services in Koriyama



Fukushima Renewable Energy Institute, AIST (FREA)

### Sub-Activity 1.1.1 - Renewable Energy

#### ●Storage and use of energy

Fukushima Renewable Energy Institute, AIST (FREA) located in Koriyama, strives for the development of renewable energy-related industry by sharing expertise on energy in cooperation with Gas- und Wärme-Institut in Essen (GWI) which forms a business network with more than 60 gas companies, power utility companies and manufacturing companies of gas related equipment in Essen. Fukushima Renewable Energy Institute, AIST (FREA) also focuses on the development of innovative energy carriers, energy storage technologies, and applied power-to-gas technologies. (solutions for power supply to methanol)



#### ●Research and business matching project

##### 1. Joint participation in trade fairs

Fukushima Prefecture and the State of North Rhine-Westphalia (NRW) in Germany have jointly participated in the Renewable Energy Industrial Fair (REIF) in Fukushima, (held in Koriyama) one of the biggest industrial exhibitions in Japan specialising in renewable energies, and 'E-world energy & water' the biggest trade fair in Europe held in Essen. Such joint participation in both events with the private sector from each city opens up the possibility of technology exchanges, improvement of technologies and products development, expansion of business, and development of productivity. This also boosts High-value added local industries which fulfill varied demands. The City of Koriyama also seeks to be a hub that combines expertise and attractive local industries with international competitiveness thereby appealing to companies and human resources.



#### October 2019

Enterprises in Germany will participate in Renewable Energy Industrial Fair (REIF) in Fukushima, the largest trade fair on renewable energy related industry in the Tohoku region

#### February 2020

Enterprises in the City of Koriyama will participate in 'E-world energy & water' the biggest trade fair in Europe held in Essen



**REIF**

The 8th REVIVAL OF FUKUSHIMA  
Renewable Energy Industrial Fair2019

2019.

**10.30** Wed **31** Thu

Time : 10:00-17:00

Venue : BIG PALETTE FUKUSHIMA



**E-world**  
energy & water

11.-13.2.2020

ESSEN / GERMANY

[www.e-world-essen.com](http://www.e-world-essen.com)

**Participation in trade fairs on energy which are taken places in Essen and Koriyama**

- (1) Fukushima prefecture offers to cover some of the costs for participating in the booth for Fukushima at 'E-world energy & water' in Essen, including sign-up fees, design and booth set-up costs, interpreter costs, etc. in a bid to support the expansion of businesses and disseminate information on technologies and products of local enterprises in Fukushima for the development and cluster formation of renewable energy related industries. The City of Koriyama also supports Fukushima Prefecture and encourages enterprises in Koriyama to participate in the trade fair.
- (2) The City of Koriyama offers grants to cover some of the travel expenses for enterprises in Koriyama to participate in 'E-world energy & water' in a bid to support the expansion of businesses and disseminate information on technologies and products of local enterprises in Koriyama for the development and cluster formation of renewable energy-related industries, thereby opening up the possibility to enter into new markets.

## **2. Essen city mission in collaboration with business circles: Culture and Sports Department, City of Koriyama**

After the project period of the International Urban Cooperation (IUC) program, under the leadership of Fukushima Prefecture and the State of North Rhine-Westphalia, the City of Koriyama steps up its efforts in the development and cluster formation of renewable energy and medical device related industries through participation in 'E-world energy & water' and visits to medical device-related enterprises in Essen based on MOUs on intercity cooperation in the fields of not only renewable energy and medical device-related industry, but education and development of future generations between Essen and Koriyama.

### **Sub-Activity 1.1.2 - Medical Device Related Industry (Healthcare) Sector**



#### **●Business Matching**

#### **1. Studies on enterprises conducted by each city, providing support on business matching and sharing the information**

In a bid for further collaboration among industry, academia and government carried out by research institutes and the private sector in both cities, the City of Koriyama will promote business matching on needs and solutions possessed by relevant entities and nurturing medical device-related industry. In doing so, it explores possibilities of support programmes for studies on enterprises in both cities, aiming at entering the global market, and carrying out business matching and sharing information, etc. This will be done cooperatively by the Koriyama Chamber of Commerce and Industry and Essen Economic Development Agency (EWG) which are more familiar with industry characteristics of each city and better at supporting the private sector.

#### **Sharing information on local enterprises**

The City of Koriyama proactively shares information gained from the coordination programme on collaboration among industry, academia and government which includes visits to medical device vendors, engineering and design companies and SMEs with high technological competences, and will play the role of providing a bridge using business matching.



Furthermore, the City will make the most of the consultants specialising in supporting medical device-related enterprises in the consulting programme sponsored by Koriyama. This aims at encouraging local enterprises to enter the medical device-related industry and commercialise their products. Consequently, information on local enterprises and experts will be referred to the City of Essen.

## **2. Utilising facilities on the development of medical device and trainings for healthcare workers**

Fukushima Medical Device Development Support Centre (FMDDSC) was established in November 2016 as a centre to promote further industrial clusters in the medical device-related industry which is one of the most prioritised areas for revitalisation following the Great East Japan Earthquake in 2011. It was the very first support facility for medical device development to give a proper boost to the industry, from the development of medical devices to commercialisation of products. It enables internationally standardised tests required to apply for permission for medical devices to be taken in-house.

Fukushima Medical Device Development Support Centre (FMDDSC) serves as a significant role for medical device manufacturing companies in Essen to enter the Japanese or east Asian market, to distribute their products and to fulfill the different standards.

Moreover, it could also provide support to European medical device development companies to newly distribute their medical products and to offer required training for healthcare employees on the product.

Therefore, the City of Koriyama aims at building a relationship with Medical Device Development Support Centre (FMDDSC) for tests on medical devices and training.

## **3. Mutual participation in trade fairs**

The City of Koriyama pursues enhanced productivity for local industries, including technical exchange, improvement of technical capabilities and products development as well as market entry through participation in the 'Medical Creation Fukushima' in Koriyama, one of the biggest trade fairs in Japan, and 'MEDICA/COMPAMED' in Düsseldorf, the world-biggest trade fair on medical devices, in which Fukushima Prefecture and the State of the North Rhine-Westphalia have mutually participated.

The City of Koriyama also aims at global competitiveness which fulfills various needs and enriches the local economy, thereby deepening expertise and attracting companies and human resources.

### **November 2019**

Participation in 'Medical Creation Fukushima' in Koriyama by enterprises in Germany

### **November 2019**

Participation in 'MEDICA/COMPAMED' in Düsseldorf by enterprises in Koriyama



### **● 'International Association for Health Technology' organised by Koriyama City International Exchange Ambassador**

Bringing expertise to the diverse fields of healthcare, science and



engineering together with Germany and the rest of the world, this association offers opportunities for brainstorming and exchanging expertise and is held to encourage joint research and developments in medical device-related industry.

**Outputs Expected (with quantitative indicators, if possible):**

***Proposed by Essen***

- The suggested business cooperation in the medicine and health industry is expected to enable a knowledge transfer regarding products, markets, customer relations and logistics. This could contribute to widening economic opportunities and foster significance of SMEs in this sector.
- It can be expected that the intended physician exchange is able to enhance the quality of medical research and teaching with relevant benefits for security and health.
- Both Essen and Koriyama, and others, can benefit from synergy effects and innovations in the fields of technology, processes and didactics for the medical training centres.
- The initiation and implementation of joint research and development projects in the energy sector, especially P2X, leads to environmentally friendly technologies and thus also contributes to the scientific and economic relevance of both cities in this field.
- Initiation and implementation of training cooperation between Fukushima Medical Device Development Support Center and University Hospital Essen

***Proposed by Koriyama***

- Participation of German enterprises at the 'Renewable Energy Industrial Fair (REIF)' in Fukushima
- Participation of enterprises in Koriyama at 'E-world energy & water 2020' in Essen
- Business missions to Essen - accompanied by some officials of Koriyama City Government in February 2020
- Participation of German enterprises to 'Medical Creation Fukushima'
- Organising joint seminars on the occasion of the visits by delegations from Essen to Koriyama in October 2019

**Specific Timeframe:**

Three years after the development of LAP

**Estimated Total Budget, if applicable:**

***Proposed by Essen***

**● *Medicine and Health Industry***

**(1) Business cooperation**

The budget is not available yet.

**(2) Physician exchange**

The budget is not available yet.

	<p><b>(3) Innovation in medical training centres</b> The budget is not available yet.</p> <p>● <b>Renewable Energy</b></p> <p><b>(1) Joint digital start-up platform</b> The budget is not available yet.</p> <p><b>(2) Storage and use of energy under the application of innovative energy carriers and technologies / P2X</b> The budget is not available yet.</p> <p><i>Proposed by Koriyama</i></p> <p>● <b>Promotion Project on research and business matching</b></p> <p><b>1. Mutual participation to trade fairs</b> Subsidy for enterprises from Koriyama to participate at E-world energy &amp; water, Industry &amp; Tourism Department: 600,000 JPY (Approx. 4,920 EURO)</p> <p><b>2. Visit of several city government officials to Essen in collaboration with the industrial circle</b> Industry &amp; Tourism Department: 3,200,000 JPY (Approx. 26,200 EURO)</p> <p>* Calculated by 1 EURO=121.93 JPY, as of July 9<sup>th</sup> 2019</p>
EU Stakeholder(s)	Description & main role and responsibilities
Essen Economic Development Agency	Initiation and support of business cooperation in the Medicine and Health Industry
Essen.Health.Networked-Medical Society e.V.	Support of business cooperation in the Medicine and Health Industry
Enterprises, especially SMEs	Active participation in business cooperation in the Medicine and Health Industry
University Hospital Essen, especially the “Teaching and Learning Centre [Lehr- und Lernzentrum]	Initiation and implementation of training cooperation in the Medicine and Health Industry
Research and educational institutions	Idea finding and scientific support in the Medicine and Health Industry
Venture capital providers	Provision of venture capital in the Medicine and Health Industry

University Hospital Essen and other hospitals	Initiation and implementation of a physician exchange
Universities and other research institutions, for example Gas- und Wärmeinstitut e. V.	Knowledge transfer from research, identification of potentials and potentially initiation of a research and development project; participation in a possible research and development project in renewable energy.
Enterprises, including SMEs	
<b>JAPAN Stakeholder(s)</b>	<b>Description &amp; main role and responsibilities</b>
Industry & Tourism Department, City of Koriyama	Promotion Project on research and development, and business matching
Fukushima Renewable Energy Institute, AIST (FREA)	Cooperation on research in restoration of energy and utilisation
Energy Agency. Fukushima	Building networks among private sector entities in the field of renewable energy and business matching, foreign market entry and support for international collaboration
Fukushima Prefectural Council on Medical & Welfare Device Related Industry	Business expansion by sharing information on related enterprises and members in the field of medical and healthcare device-related industry and enhance technical capabilities
Fukushima Medical Device Industry Promotion Agency (FMDIPA)	Support for Fukushima Medical Device Development Support Centre (FMDDSC), promotion of the development of medical device and support for business matching
Fukushima Branch Office, Japan External Trade Organization (JETRO)	Sharing information and collaboration with Fukushima Prefecture and Japan External Trade Organization (JETRO) in Düsseldorf, support for SMEs' foreign market entry, leveraging international and domestic networks as well as study and research
Koriyama Chamber of Commerce & Industry	Studies on enterprises in each city, aiming at foreign market entry, business matching support and sharing information
Koriyama Area Technopolis Promotion Organization	

International Exchange Ambassador of Koriyama City	Support for the development of medical device-related industry
Higher Educational Institutes including universities	Advice on research institutes in the fields of renewable energy and medical device-related industry and collaboration in the private sector
Private Sectors	Strengthening management bases, including participation in trade fairs and development of products, improvement in productivity, business expansion, development of human resources, development of new technologies

<b>Specific Objective 3:</b>	<p><i>The third objective named in “3. SPECIFIC OBJECTIVE”</i></p> <p>Opportunities to learn ‘advanced expertise and technologies which create the future of society’, ‘scientific thinking, decision-making and the ability of public relations’, ‘receptiveness to diverse and different values’, ‘active citizenship’ and ‘resilience’ are ensured through prior preparation and conducting academic internships. This also enables regional and urban innovation and the development of human resources which contribute to inclusive and sustainable economic growth</p>
<b>2.1. Action or Pilot Name:</b>	<p><i>Short name of the activity to achieve the specific objective 3</i></p> <ul style="list-style-type: none"> <li>● Internship project from the Faculty of Medicine, Duisburg-Essen University to Koriyama</li> <li>● Super Science High School (SSH) programme carried out by Fukushima Prefectural Asaka High School</li> <li>● Alfried Krupp Pupils Scholarship programme for practical business training</li> </ul>
<b>Activity proponent</b>	<p><i>EU City:</i> Office of International Affairs, City of Essen and Essen Economic Development Agency (EWG)</p> <p><i>JAPAN City:</i> Departments of Policy Development, Health and Welfare, Industry and Tourism, City of Koriyama, Southern Tohoku General Hospital, and Fukushima Prefectural Asaka High School</p>
<b>Activity leader:</b>	<p><i>EU City:</i> Lord Mayor, City of Essen</p> <p><i>JAPAN City:</i> Mayor, City of Koriyama</p>
<b>Brief Description:</b>	
<p>Describe the content of activities.</p> <p><i>Please list the sub-activities with their brief description, if the activity is composed of multiple activities.</i></p>	

### ***Proposed by Essen***

#### ***Sub-Activity 3.1.1 - Medical and healthcare device related industry***

##### **● Student exchange**

Internationalisation and enhanced attractiveness of education in medical courses. The purpose of this activity is the extension of benefits from the physician exchange (see corresponding description) to students. Exchange activities during their studies give students an opportunity to familiarise themselves with international cooperation at an early stage. Japanese and German degree courses are of high quality and reputation and as such, are well-suited to cooperation on an international level. This can even be enhanced by strategic cooperation at training facilities (see Objective 2. "Activity Physician exchange in the disciplines of oncology, traumatology, cardiology and old age diseases").

### ***Proposed by Koriyama***

Japan faces increased demand for globally-minded human resources as there is an unprecedented situation for research institutes and the private sector to move overseas as challenges emerge from changes in the market.

As globalisation progresses, it is vital to aim for local and urban innovation and sustainable urban development with competitiveness and inclusiveness, in addition to nurturing fundamental skills, language proficiency, information and technology capabilities to analyse ability and gain insight into different cultures

The City of Koriyama contributes to the development and promotion of industries. With close cooperation among universities, higher education institutions, medical institutions, and industry-supporting organisations, the City of Koriyama strives for the development of human resources, which brings about the development of the local economy and promotion of local industries.

#### **Expected results**

1. Education: gaining higher knowledge, technical capabilities, scientific thinking and decision-making, expression, dissemination capability and public relations capabilities, tolerance to diverse values, citizen activeness, resilience
2. Economy: increasing and enhancing the stability of industrial bases and industrial competitiveness through the development of human resources, creation of new businesses through the development of human resources
3. Society: sharing wisdom and contribution to society

#### ***Sub-Activity 3.1.1 - Medical and healthcare device related industry***

##### **● Internship from the Faculty of Medicine, Duisburg-Essen University to Koriyama in FY2020**

The relationship has been strengthened by an MOU on city-to-city cooperation in 2017 and a partnership agreement based on the International Urban Cooperation project in 2018, following the conclusion of an MOU on Boron Neutron Capture Therapy (BNCT) research in 2014 by the Southern Tohoku General Hospital and the Faculty of Medicine, Duisburg-Essen University . Therefore, City of Koriyama intends to grow the medical device-related industry in cooperation with medical institutions and personnel exchanges with the purpose of developing human resources. As part of the project, that the plan is for Southern Tohoku General Hospital to host an intern from the Faculty of Medicine, Duisburg-Essen University in FY2020, and share medical-related information in each city. Exchanging and disseminating this information as a public relations activity in Essen is also scheduled.



### **Sub-Activity 3.1.2-Multi-faceted areas**

#### **●Super Science High School Initiative (FY2020)**

Based on the Super Science High School (SSH) programme sponsored by the Ministry of Education, Culture, Sports and Science and Technology-Japan (MEXT), Fukushima Prefectural Asaka High School in Koriyama is planning to send a delegation, consisting of students and teachers, to Essen, making use of the network fostered by the International Urban Cooperation (IUC) project with City of Essen, Essen Economic Development Agency (EWG) and Duisburg-Essen University. Fukushima Prefectural Asaka High School strives for the development of future generations in the field of STEM who will carry on future innovations through exchanges with local students under the '17 Sustainable Development Goals' adopted by the United Nations.



#### **●Alfried Krupp Pupils Scholarship programme for practical business training in April 2020 – Towards bridges built by future generations between the cities of Essen and Koriyama**



The two cities of Essen and Koriyama have been fostered a city-to-city relationship since they were accredited as one of the city-to-city pairings for the International Urban Cooperation (IUC) project sponsored by the EU in November 2017. The cities concluded an inter-city partnership agreement in December 2017.

In an attempt to shed light on inter-city cooperation, promote further collaboration and underline the importance of the exchange of future generations, the City of Koriyama hosts scholars to conduct practical business training.

Two 17-year old scholars from Essen are scheduled to stay in Koriyama for four weeks to do their internships. They will mainly give presentations on basic profile, culture and daily life in Essen, as well as instruction in basic German conversation at local elementary and junior high schools. The expense for flights and accommodation, etc. for the scholars will be taken care of by the Alfried Krupp Foundation.

<p><b>Outputs Expected (with quantitative indicators, if possible):</b></p>	<p><b>Proposed by Essen and Koriyama</b></p> <ul style="list-style-type: none"> <li>●Internship from the Faculty of Medicine, Duisburg-Essen University hosted by Southern Tohoku General Hospital</li> </ul> <p><b>Proposed by Koriyama</b></p> <ul style="list-style-type: none"> <li>●Based on the Super Science High School (SSH) programme, students and teachers are planning to visit Essen and carry out an exchange with local students.</li> </ul>
<p><b>Specific Timeframe:</b></p>	<p>FY2020</p>
<p><b>Estimated Total Budget, if applicable:</b></p>	<p><b>Medical Device and Healthcare</b></p> <ul style="list-style-type: none"> <li>●<b>Internship from the Faculty of Medicine, Duisburg-Essen University to Koriyama</b></li> </ul> <p>The expenses including flights, accommodations during the internship are taken care of by the intern</p> <p><b>Multi-faceted areas</b></p> <ul style="list-style-type: none"> <li>●<b>Super Science High School (SSH) programme</b></li> </ul> <p>The expenses including flights, accommodations during the internship are taken care of by Fukushima Prefectural Asaka High School.</p>


	<p><b>●Alfried Krupp Pupils Scholarship programme for practical business training</b></p> <p>The expenses of flights and accommodations, etc. for the scholars are taken care of by the Alfried Krupp Foundation.</p> <p>Industry and Tourism Department, City of Koriyama: 193,000 JPY (Approx. 1,600 EURO) for domestic travel expenses, etc.</p> <p>*Calculated by 1 EURO=121.93 JPY, as of 9 July 2019</p>
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EU Stakeholder(s)	Description & main role and responsibilities
University of Duisburg-Essen, Faculty of Medicine	Initiation and implementation of a student exchange
JAPAN Stakeholder(s)	Description & main role and responsibilities
Policy Development Department, City of Koriyama	Promotion and coordination of collaboration between industry, academia and government to nurture future generations
Health and Welfare Department, City of Koriyama	
Industry and Tourism Department, City of Koriyama	
Southern Tohoku General Hospital	Coordination with the Faculty of Medicine, Duisburg-Essen University to host an intern from the Faculty of Medicine, Duisburg-Essen University and provide guidance
Fukushima Prefectural Asaka High School	Activities based on the SSH programme, the working group consisting of teachers at Asaka High School, local organisations concerned, parents, and alumni



#### 4. CALENDAR OF KEY EVENTS AND MILESTONES

Please add your **key** events and milestones for the whole period of the cooperation including the date that the MOU was signed, the planned date for the first draft of the U-CAP to be completed, the dates for Learning Exchanges *directly in table provided in the U-CAP template*.

Month/Year	Events / Milestones	Comments
Dec 2017	<b>Concluded the MOU on city-to-city cooperation</b>	
Apr 2018	<p><b>Study tour (Delegation of Essen to Japan)</b></p> <ul style="list-style-type: none"> <li>●2nd EU-Japan Cities Exchange Meeting</li> <li>●Courtesy visit to Mayor of Koriyama City and Chair of City Assembly</li> <li>●Courtesy visit to Vice Governor of Fukushima Prefecture</li> <li>●Joint Seminar and reception targeted private sectors and research institutes in Koriyama</li> <li>●Site Visits               <ol style="list-style-type: none"> <li>1. Fukushima Renewable Energy Institute, AIST (FREA)</li> <li>2. Energy Agency. Fukushima</li> <li>3. Fukushima Medical Device Development Support Centre (FMDDSC)</li> <li>4. Fukushima Prefectural Technology Centre</li> <li>5. College of Engineering, Nihon University</li> <li>6. Ohu University</li> <li>7. Southern Tohoku General Hospital</li> </ol> </li> <li>●Wrap-up Meeting</li> </ul>  <p>Wrap-up meeting of the study tour in Koriyama</p>	<p><b>Four delegation members</b></p> <ol style="list-style-type: none"> <li><b>1. Mr. Andreas Giga</b> <i>Department of Water Management, City of Essen</i></li> <li><b>2. Mr. Winfried Book</b> <i>Essen Economic Development Agency (EWG)</i></li> <li><b>3. Prof. Dr.-Ing. Klaus Görner</b> <i>Gas- und Wärme-Institut in Essen (GWI), Faculty of Engineering, Duisburg-Essen University</i></li> <li><b>4. Prof. Dr. med. Wolfgang Sauerwein</b> <i>University Hospital Essen, Faculty of Medicine, Duisburg-Essen University</i></li> </ol> <p><b>Seminar</b></p> <ol style="list-style-type: none"> <li>1. Date: Tuesday, 24 April 2018</li> <li>2. Venue: College of Engineering, Nihon University</li> <li>3. No. of Participants: approx. 120</li> </ol>  <p>Seminar at the College of Engineering, Nihon University</p>
Aug 2018	<p><b>Seminar on Economic Partnership Agreement(EPA) between the EU and Japan organised by the Ministry of Economy, Trade and Industry (METI)</b></p> <ul style="list-style-type: none"> <li>●'Inter-city Cooperation between Koriyama and Essen' presentation given by the City of Koriyama</li> </ul>	<p><b>Seminar</b></p> <ol style="list-style-type: none"> <li>1. Date: Thursday, 23 August 2018</li> <li>2. Venue: Koriyama City Hall</li> <li>3. Organised by: Fukushima Branch Office, Japan External Trade Organization (JETRO)</li> <li>4. Co-organised by: City of Koriyama and Japan Finance Corporation (JFC)</li> <li>5. Supported by: Fukushima Prefecture and</li> </ol>

		Fukushima Trade Promotion Council 6. No. of Participants: approx. 50
<i>Oct 2018</i>	<b>Working Group on the International Urban Cooperation (IUC) Project</b> <ul style="list-style-type: none"> <li>● Meeting on the development of Local Action Plan with stakeholders in Koriyama</li> </ul>	<b>Meeting</b> <ol style="list-style-type: none"> <li>1. Overview of the visit to Germany in November 2018</li> <li>2. JAPAN ERLEBEN in Essen</li> <li>3. Cooperation between Essen and Koriyama</li> <li>4. Report on 2<sup>nd</sup> EU-Japan Cities Exchange Meeting</li> </ol>
<i>Nov 2018</i>	<b>Study tour</b> <b>Delegation of Koriyama to Essen</b> <ul style="list-style-type: none"> <li>● <b>Site visits</b> <ol style="list-style-type: none"> <li>1. COMPAMED Trade Fair</li> <li>2. Innogy SE</li> <li>3. gwi / Gas- und Wärme-Institut e.V.</li> <li>4. EMSCHERGENOSSENSCHAFT</li> <li>5. ROESER Medical GmbH</li> <li>6. Seniorenstift Haus Berge</li> <li>7. NOWEDA Apothekergenossenschaft eG</li> <li>8. Teaching and learning center at Faculty of Medicine, Duisburg-Essen University</li> <li>9. UNESCO-Welterbe Zollverein</li> </ol> </li> <li>● <b>JAPAN ERLEBEN in Essen -Symposium ‘Potential and Future Perspectives of Cooperation between Essen and Koriyama’/Reception and signing ceremony of partnership agreement</b></li> <li>● <b>Wrap-up meeting</b></li> </ul>  <p>Wrap-up meeting of the study tour in Essen</p>	<b>Nine Delegation members</b> <ol style="list-style-type: none"> <li>1. <b>Mr. Kazutoshi Kanno, Deputy Mayor, City of Koriyama</b> (three other City Government Officials)</li> <li>2. <b>Mr. Kazuhiro Watanabe</b> Fukushima Renewable Energy Institute, AIST (FREIA)</li> <li>3. <b>Mr. Kazumi Matsumoto</b> Fukushima Medical Device Industry Promotion Agency (FMDIPA)</li> <li>4. <b>Prof. Dr. med Kanichi Seto</b> Southern Tohoku General Hospital</li> <li>5. <b>Dr. Ing Kosuke Ito</b> College of Engineering, Nihon University</li> </ol> <b>Seminar</b> <ol style="list-style-type: none"> <li>1. Date: Friday, 16 November 2018</li> <li>2. Venue: Auditorium, Essen City Hall</li> <li>3. Organised by: Consulate-General of Japan in Düsseldorf and City of Essen</li> <li>4. Co-organised by : Fukushima Prefecture and City of Koriyama</li> <li>5. No. of participants: approx. 100</li> </ol>
<i>Nov 2018</i>	<b>Concluded the Partnership Agreement on the IUC City-to-City Cooperation Programme</b>	
<i>Dec 2018</i>	<b>Meeting of working group</b> <ul style="list-style-type: none"> <li>● Meeting on the development of Local Action Plan with stakeholders in Koriyama</li> </ul>	<b>Meeting</b> <ol style="list-style-type: none"> <li>1. Review of the study tour</li> <li>2. Action items for further cooperation</li> </ol>

<p>Jan 2019</p>	<p><b>Meeting of Working Group</b></p> <ul style="list-style-type: none"> <li>● Meeting with the departments concerned to share information and work on further collaborations</li> </ul>	<p><b>Meeting</b></p> <ol style="list-style-type: none"> <li>1. Report of the study tour</li> <li>2. Report of the result of meeting of working group</li> <li>3. Action items and time schedule</li> </ol>
<p>Mar 2019</p>	<p><b>Exchange opinions over fields of Action, strategies and potential actors on the development of Local Action Plan</b></p>	
<p>May 2019</p>	<p><b>Study tour</b> <b>Delegation of Essen to Koriyama</b></p> <ul style="list-style-type: none"> <li>● Courtesy visit to Mayor of Koriyama City and Chair of City Assembly</li> <li>● Meeting on further cooperation</li> <li>● Meeting with the medical doctors at medical institutions in Koriyama</li> </ul>  <p>Meeting at medical institutions in Koriyama</p> <ul style="list-style-type: none"> <li>● Essen-Koriyama Joint Seminar and Reception</li> <li>● Visit to Arai Water Purification Plant</li> <li>● Wrap-up Meeting Preparation for the 4<sup>th</sup> EU-Japan Cities Exchange Meeting, exchange thoughts on the development LAP</li> <li>● 4<sup>th</sup> EU-Japan Cities Exchange Meeting</li> </ul>	<p><b>Two delegation members</b></p> <ol style="list-style-type: none"> <li>1. <b>Mr. Andreas Giga</b> Department of Water Management, City of Essen</li> <li>2. <b>Mr. Go Theisen</b> Essen Economic Development Agency (EWG)</li> </ol> <p><b>Meeting with the medical doctors</b></p> <ol style="list-style-type: none"> <li>1. Date: Wednesday, 15 May 2019</li> <li>2. Meeting: request for hosting an intern from Essen, approved</li> </ol> <p><b>Seminar</b></p> <ol style="list-style-type: none"> <li>1. Date: Wednesday, 15 May 2019</li> <li>2. Venue: Koriyama City Hall</li> <li>3. Organised by: Cities of Koriyama and Essen</li> <li>4. Co-organised by: Fukushima Branch Office, Japan External Trade Organization (JETRO) and Koriyama Chamber of Commerce and Industry</li> <li>5. No. of Participants: 101</li> </ol>
<p>Aug 2019</p>	<p><b>Study tour to Essen by the Environmental Affairs Department , City of Koriyama</b></p> <p><b>Japanische Energie-Delegation zu Gast bei Oberbürgermeister Kufen</b></p> <p>27.08.2019</p> <p>Heute (27.8.) begrüßte Oberbürgermeister Thomas Kufen eine Japanische Delegation im Essener Rathaus. In der 22. Etage ließ er die Delegierten rund um Prof. Dr. Ing. Yoshihito Ozawa, Vorsitzender der Delegation und Professor an der Fukushima University, und Yoshihiro Watanabe, zweiter Vorsitzender der Delegation und Generaldirektor des Umweltaamtes der Stadt Koriyama, sowie die Gäste der Essener Wirtschaftsförderungsgesellschaft (EWG) willkommen.</p> <p>„Die Stadt Essen ist ein guter Kooperationspartner für alle Energiethemen, denn wir sind die Energie-Metropole Europas“, sagte Oberbürgermeister Kufen in seinen einleitenden Worten unter Verweis auf wichtige Energiekonzerne, die ihren Hauptsitz in Essen haben, und auf die in der Stadt beheimatete Messe „E-world energy &amp; water“, die als Europas Energiemesse Nr. 1 gilt. Er wies zudem auf die Essener Stadtwerke hin, die die gesetzliche Versorgungsaufgabe übernehmen – im Gegensatz zu Japan, wo Stromnetze im Besitz von Stromversorgungsunternehmen sind.</p> <p>Auch den Aspekt des gemeinsamen Austauschs unterstrich Oberbürgermeister Kufen: „Wir können gleichzeitig viel vom 2014 in Koriyama gegründeten Fukushima Renewable Energy Institute (FREIA) lernen, das als modernste Forschungseinrichtung in diesem Gebiet in Japan gilt.“ Auch der Austausch mit dem Gas- und Wärme-Institut Essen e.V. (GWI) sei fruchtbar, sodass sich in diesem Zusammenhang künftig gemeinsame Forschungsprojekte entwickeln können</p>  <p>Prof. Dr. Ing. Yoshihito Ozawa, Vorsitzender der Delegation und Professor an der Fukushima University, nimmt ein Willkommensgeschenk entgegen. Foto: Horitz Leick, Stadt Essen</p>  <p>Yoshihiro Watanabe, zweiter</p>	<p><b>Study tour</b></p> <p>Study tour on ‘Stadtwerke’ by ‘the Study Group on Energy Generation, Storage and Savings’ approx. 20 participants from organisations concerned including two city government officials</p> <p><b>Two city government officials participated</b></p> <p><b>Visit to Stadtwerke Essen AG on water resources public corporation and house renovation project</b></p> <p><b>Courtesy visit to Lord Mayor of Essen to strengthen the relationship</b></p>
<p>Sep 2019</p>	<p><b>Visit to Koriyama by Lord Mayor, City of Essen</b></p>	<p><b>Five delegation members</b></p> <ol style="list-style-type: none"> <li>1. <b>Mr. Thomas Kufen</b> Lord Mayor, City of Essen</li> <li>2. <b>Mr. Andre Boschem</b> Managing Director, Essen Economic</li> </ol>

	 <p>Group photo on the occasion of the signing of the cooperation with Koriyama. Photo: EWG</p> <p><b>Delegation from Essen visits Japan: Lord Mayor Thomas Kufen reaffirms cooperation with Koriyama and expands economic contacts</b></p> <p><b>Essener Delegation besucht Japan: Oberbürgermeister Thomas Kufen bekräftigt Zusammenarbeit mit Koriyama</b></p> <p>02.09.2019</p> <p>Unter der Leitung von Oberbürgermeister Thomas Kufen besucht eine Essener Delegation in den kommenden Tagen mehrere Städte in Japan. Ziel ist, die Zusammenarbeit mit der Stadt Koriyama und die wirtschaftliche Kooperation mit japanischen Unternehmen zu vertiefen. Andre Boschem, Geschäftsführer der EWG - Essener Wirtschaftsförderungsgesellschaft mbH, sowie Prof. Dr. Maren Schulze, Japanbeauftragte der Medizinischen Fakultät der Universität Duisburg-Essen, und Matthias Bohn, Geschäftsführer des Start-ups Grubenbildern, sind weitere Teilnehmer der Delegation.</p> <p>Die Stärkung der Kooperation zwischen Essen und Koriyama stand im Mittelpunkt des ersten Besuchstages. Mit einer öffentlichen Veranstaltung forderte die Stadt Koriyama den weiteren Austausch der Städte. In diesem Rahmen präsentierten Oberbürgermeister Kufen und EWG-Chef Andre Boschem den Japanischen Verantwortlichen die Stadt Essen als innovativen und lebenswerten Wirtschaftsstandort.</p> <p><b>Memorandum of Understanding</b></p> <p>Vor rund zwei Jahren unterzeichneten die Oberbürgermeister von Essen und Koriyama das "Memorandum of Understanding" und beschlossen darin eine enge Zusammenarbeit in den Bereichen erneuerbare Energien und Umweltschutz sowie den engen Austausch im Bereich der Medizin und Gesundheit. Das "Memorandum of Understanding" behält uneingeschränkt seine Gültigkeit. Mehr noch: Die Kooperation wird nun um den Bildungsbereich und die Talentförderung ergänzt. Dies bekräftigten Thomas Kufen und sein japanischer Amtskollege Masato Shinagawa am 2. September 2019 mit der Unterzeichnung einer Zusatzvereinbarung. "Heute Abend setzen wir einen weiteren Meilenstein auf unserem gemeinsamen Weg einer City-to-city cooperation Koriyama-Essen und bekräftigen im Namen unsere Städte unsere Verbundenheit", sagte Thomas Kufen. Masato Shinagawa ergänzte: "Wir sind sehr stolz darüber, die Kooperation mit der Stadt Essen weiterzuführen und nun sogar ausbauen zu können."</p> <p><b>Famulatur und Krupp-Stipendien</b></p> <p>Erste konkrete Ergebnisse konnten im Rahmen der Reise bereits erzielt werden. Prof. Maren Schulze, Japanbeauftragte der Medizinischen Fakultät der Universität Duisburg-Essen, vereinbarte einen Famulaturenaustausch mit dem Southern Tohoku General Hospital. Tsuchiuchi erhielt nunmehr ein</p>  <p>Die Essener Delegation: Prof. Maren Schulze (2.v.l.) führte die Gespräche zum Famulaturenaustausch mit Prof. Kanichi Seto (2.v.r.). Foto: EWG</p>  <p>Besuch beim Batterienhersteller Tohoku Murata Manufacturing. Foto: EWG</p>  <p>Essens Oberbürgermeister Thomas Kufen (l.) und Masato Shinagawa, sein Amtskollege aus Koriyama. Foto: EWG</p>	<p><i>Development Agency (EWG)</i></p> <p><b>3. Mr. Markus Pließnig</b> <i>Essen Economic Development Agency (EWG)</i></p> <p><b>4. Mr. Go Theisen</b> <i>Essen Economic Development Agency (EWG)</i></p> <p><b>5. Prof. Dr. med. Maren Schulze</b> <i>University Hospital Essen, Faculty of Medicine, Duisburg-Essen University</i></p> <p><b>Meeting with Mayor of Koriyama and Chirperson of Koriyama City Assembly</b></p> <p><b>Essen-Koriyama Joint Seminar</b></p> <ol style="list-style-type: none"> <li>1. Date: Monday, 2 September 2019</li> <li>2. Venue: Koriyama City Hall</li> <li>3. No. of Participants: 70</li> </ol> <p><b>Visit to local enterprises, medical institutions and sports facilities related to Tokyo 2020 Olympic and Paralympic Games</b></p> <p><b>Organize Signing Ceremony and Reception</b></p> <p>Agreement on continued intercity cooperation in the fields of education and development of future generations</p>
<p><i>Oct 2019</i></p>	<p><b>Study tour to Essen by the Culture and Sports Department, City of Koriyama</b></p>	<p>Study tour on green fuel project by Innogy SE, Global exchanges on Culture, Agriculture and Industry project</p>
<p><i>Oct 2019</i></p>	<p><b>Participation of enterprises related to Essen to REIF Fukushima 2019</b></p>	
<p><i>Feb 2020</i></p>	<p><b>Study tour to Essen by the Industry &amp; Tourism Department, City of Essen</b></p>	<p>Study tour by the delegation consisting of research institutes and the industrial circles</p>
<p><i>Feb 2020</i></p>	<p><b>Support programme for enterprises in Koriyama to participate in E-world energy &amp; water</b></p>	<p>Subsidy programme for the expenses to participate for enterprises in Koriyama</p>
<p><i>Dec 2020 or Jan 2021</i></p>	<p><b>Study tour to Essen by Fukushima Prefectural Asaka High School</b></p> <ul style="list-style-type: none"> <li>● in line with the 17 Sustainable Development Goals adopted by the United nations</li> </ul>	<p>Visit to Essen paid by teachers and students in cooperation among industry, academia and government and exchanges with local students</p>

## 5. KEY LEARNING AND CHALLENGES

This section is for each city to describe in detail the key learning that your city has had over the course of your participation in the IUC City-to-City programme.

<b>EU City:</b>	City of Essen
<p><i>Describe the key learnings from the IUC programme considering your initial expectations. Narrative text (up to 500 words). Describe what your city has learned from your partner city (e.g. good practices and lessons) and any innovative ideas, insights or inspirations your city has acquired through the IUC city-to-city cooperation.</i></p> <p><b><u>Strategic orientation</u></b></p> <p>The strategic orientation of the entire process and individual actions is regarded as one of the critical success criteria for impact-orientated proceedings. A missing or insufficient strategic orientation could potentially lead to inefficiency or failure of actions and thus have an impact on the entire process. This is even more significant as relevant decisions by enterprises and research institutes first of all will be based on specific impacts on market changes, customer requirements and research focuses. Thus, the consideration of general goals like sustainability in the course of strategy building has to be emphasised.</p> <p><b><u>Political and legal framework</u></b></p> <p>The effectiveness of intermunicipal cooperation depends on a beneficial and secure political and legal framework. This applies specifically to all fields of action within this LAP as they are of high economic and societal relevance. Even if at present and in the foreseeable future this precondition is fulfilled on all levels and sectors, a continuous observation of the political and legal framework should be considered.</p> <p><b><u>Momentum of the innovation process</u></b></p> <p>All proposed actions within this LAP are aiming at initialising an innovation process. Collaborative structures and effective processes can set a framework, but cannot directly influence the actual process. For it to proceed depends on knowledge, collaboration capacities, path dependencies and other influence factors.</p> <p>Basically an innovation process has to be considered as open-ended, which implies uncertainties. This has to be considered as a pre-condition in the follow-up.</p> <p><b><u>Funding and human resources</u></b></p> <p>All proposed actions depend on sufficient funding and personal resources. In addition to public funds, a reasonable amount of entrepreneurial funds has to be contributed. Insufficient resources may cause inefficiency or failure of actions, and may have an impact on the entire process. This risk can partially be mitigated by thorough resource allocation and control. Please also see related explanations in the subsequent chapter.</p>	

JAPAN City:

City of Koriyama

*Describe the key learnings from the IUC programme considering your initial expectations. Narrative text (up to 500 words). Describe what your city has learned from your partner city (e.g. good practices and lessons) and any innovative ideas, insights or inspirations your city has acquired through the IUC city-to-city cooperation.*

Making the most of the advantages of the location of Fukushima Renewable Energy Institute, AIST (FREA) and Fukushima Medical Device Development Support Centre (FMDDSC), the City of Koriyama has stepped up its efforts in promoting industrial clusters in the pivotal fields of renewable energy and medical device-related industries, nurture-related industries, thereby reinvigorating the local economy and creating employment by means of encouraging new businesses through a network of collaboration among industry, academia and government with universities, public test facilities and industry support organisations as the 'hub of knowledge'.

Conducting exchanges with the City of Essen which address common challenges and developing industrial clusters have brought beneficial effects to the development and implementation of the integrated sustainable urban development policy involving diverse stakeholders, including the private sector, universities and research institutes.

The City of Essen is globally highly-regarded for its leading and proactive efforts in the fields of environmental protection and clean energy, which was illustrated by the fact that Essen achieved the award of 'European Green Capital 2017'. Above all, the City of Koriyama learned the importance of cross-organisational efforts from Gas- und Wärme-Institut in Essen (GWI), a verification laboratory specialising in the research and development of natural gas related products, development of human resources and diverse technology development. It achieves this through its network of more than 60 members from natural gas companies, power utility companies, natural gas related manufacturing companies and the ÖKOPROFIT project where the local governments, private sectors and experts form a network supporting the efficient energy-saving management.

Furthermore, the City of Essen boasts a high level of competitiveness in the distribution of medical devices and supplies as well as highly-advanced system development. It also has the potential for creating innovative medical technologies and efficient management of hospitals as the location of numerous medical device-related enterprises and home to experts in the fields of medical device-related industry and healthcare. Exchange activities are carried out with medical students from the Faculty of Medicine, Duisburg-Essen University which conducts world-leading research activities in the fields of oncology, cardiovascular, transplantation and attracts approximately 1,900 medical students from 30 countries. Such activities open up new opportunities for technical acquisition and improvement.

As both cities are addressing parallel challenges and taking similar steps to deal with them, sharing good practices and their results, and moreover implementing them in the policy development of each city will enable further local innovation and higher competitiveness as well as ensuring sustainable economic growth.

## 7. THE FUTURE: Sustainability of the cooperation process

This section is for each city to describe how your city plans to continue to cooperate with your counterpart(s) or other cities from the IUC programme. Please explain who will be involved and how their participation will be ensured.

EU City

City of Essen

*Describe how your city is planning to continue the cooperation on sustainable urban development through pilot projects and processes and define who are the involved stakeholders to guarantee durability. Narrative text (suggested word count: up to 500 words).*

**Follow-up**

As pointed out before, the participation of the City of Essen in the City-to-City Programme of IUC takes place in the context of a wider approach. It therefore contributes to corresponding policies and processes. The implementation of the proposed actions within this LAP bears the potential to enhance capacities in this regard.

The intermunicipal cooperation with Koriyama in the context of the long-term relationship between the Fukushima prefecture and North Rhine-Westphalia will surely result in benefits for both cities and all involved stakeholders.

**Evaluation**

A high level of target achievement and a high process quality require a meaningful evaluation. At the same time, evaluation in the field of non-monetary target systems and policies brings with it methodological difficulties.

As far as applicable, exemplary quantitative indicators have been named. Due to the multi-sector and multi-stakeholder approach of the programme, it is generally up to the individual actors in what way they are ready and capable to implement suitable indicators. As many companies implement sustainability measurement systems, this may contribute to an evaluation.

At this point, reference should be made to Directive 2014/95/EU, which regulates the disclosure of non-financial and diversity information. Even if it only applies to large companies and not SMEs, this regulation proves the relevance of the matter.

An evaluation on the programme level might in principle be carried out by the municipalities, depending on the availability of data and resources. A methodological framework at municipality-level has been developed by the Bertelsmann Foundation, the Federal Institute for Building, Urban Affairs and Spatial Research, national local authority organisations, the German Institute for Urban Studies and Engagement Global.<sup>vi</sup> The City of Essen does not actually implement this or comparable indicator systems concertedly nor does it intend to do this in the foreseeable future, but this generally demonstrates methodological opportunities and restrictions.

**Overall assessment and additional remarks**

Intermunicipal cooperation can be perceived as promising approach to achieve a sustainable development on global scale by involving and networking relevant stakeholders on local level. Based on the experience of the city-to-city cooperation with Koriyama City and the impressive development of the programme, this assumption seems perfectly justified.

Beyond the important issue of sustainable urban development as a substantive objective of the programme, it also offers a high methodical potential regarding the ability of municipalities to cooperate across national borders.

Taking this positive assessment into consideration, the following proposals should be submitted regarding the future design of the IUC City-to-city cooperation respectively, as well as a comparable follow-up programme:

1 | In terms of methodology, a city-to-city exchange on international level generally refers to international project management and in particular knowledge management and innovation management. The exchange and learning processes will be influenced by differences in the

respective cultural, political and legal framework. We believe that these circumstances should not be seen as impediments, but have the potential to contribute to the project course if they are recognised as relevant.

Therefore we suggest that in addition to the actual project work at the technical level, the participating municipalities get the opportunity to exchange and coordinate about their respective project approaches and frameworks. This should at best be accompanied by external support to enrich this exchange.

This additional step may be connected with additional effort and expenditure, but we believe that it will immensely support the municipalities in the project course and that the resulting increase in efficiency will definitely justify this arrangement.

2 | In October 2018 during the 2nd City-to-city event, Dr. Hall referred to a cluster model on the basis of the topics, which will possibly be considered in case of the continuation of IUC or a follow-up programme. Even if we consider our cooperation with Koriyama within the present design of the project as very valuable, a supplementary theme-based approach would surely contribute to an enhanced exchange of knowledge. While the cooperation within a direct city-to-city relation might be better suited as a framework for shaping follow-up projects within the meaning of Local Actions Plans, knowledge exchange could be fostered using a widened framework. Therefore we would endorse a two-fold approach for future programmes.

3 | As already pointed out in chapter 6, the implementation of this LAP depends on sufficient funding and personal resources. It has explicitly been explained from the start, that the IUC-Programme itself is not designed to grant any funding for the realisation of projects, so that these preconditions have been unambiguously clear. Nonetheless, the transition to the implementation phase proves to be a challenge due to the necessity of the acquisition of funding from other sources, especially research institutes and enterprises. They firstly have to adapt their arrangements and to make preparations, for example by providing capital, human resources and equipment.

A comparable follow-up programme for each IUC respectively should not be designed to provide a comprehensive funding of complete terms of actions in the future; at least, an appreciable start-up financing for the purpose of facilitating the implementation phase should be taken into consideration. Besides the financial compensation this would also have an important incentive function.

In this context a certification system should also be taken into consideration. For example, the German Federal Association for Sustainability offers the IASA Certified Sustainability® as sustainability certification for enterprises and organisations.vii On a local level, the City of Essen has made positive experience with the certification of energy consultants.viii

A certification of participants in an international cooperation programme would undoubtedly have an incentive function and also serve to build confidence towards customers and investors as a sign of specific competences.

4 | Evaluation of individual actions and the general process could effectively be supported by methodological assistance and provision of funding.

JAPAN City

City of Koriyama

*Describe how your city is planning to continue the cooperation on sustainable urban development through pilot projects and processes and define who are the involved stakeholders to guarantee durability. Narrative text (suggested word count: up to 500 words).*



The relationship between the cities of Essen and Koriyama has been steadily developed since they were selected as one of the city-to-city pairings for the International Urban Cooperation project. As well as sharing expertise between the diverse departments concerned of both cities, the collaboration includes sharing expertise and mutual visits paid by relevant organisations. Towards the continued collaborations of both cities, the Industry and Tourism Department, City of Koriyama and the Office of International Affairs, City of Essen, playing the role of coordinators of this project, will organise a seminar to disseminate the information on good practices and take this project one step further for tangible and rewarding business activities in cooperation with diverse organisations in the loop on this project.

Based on the dialogue at the study tour in Koriyama in May 2019, the Water and Sewerage Bureau, the City of Koriyama and the Department of Water Management, the City of Essen have shared good practices on the management of rainwater and sewer, sewage sludge treatment and disposal, transformation of digester gas to biogas in sewage treatment plants and its utilisation, safety improvement in tap water, and effective utilisation of water resources. Concern over urban resilience on water management has instigated attempts in realising human and environmentally-friendly urban development in both cities.

Furthermore, the City of Koriyama will work in cooperation with Fukushima Prefecture in Japan and the State of North Rhine-Westphalia in Germany which have deepened their relationship since the MOUs on renewable energy and medical device related industry concluded in 2014. The city will also work with Fukushima Renewable Energy Institute, AIST (FREA) and the Fraunhofer Society which also concluded a MOU on renewable energy, as well as cooperate with the Southern Tohoku General Hospital and Essen University Hospital which have promoted exchanges based on the MOU in medicine and welfare, universities and industry support organizations, including the Koriyama Chamber of Commerce and Industry and Essen Economic Development Agency (EWG), private sectors and financial institutions. In this way, Koriyama intends to intensify its efforts in promoting research and development, launching new businesses, commercialising products, nurturing relevant industries in the fields of renewable energy and medical device related industry, which enables the realization of sustainable urban development in the City of Koriyama.

Last but most certainly not least, in order to effectively implement this local action plan which has been worked on in tandem with the City of Essen to exemplify sustainable urban development, financial resources are vital for both cities. Taking this opportunity, the cities of Essen and Koriyama kindly petition any kind of continued support from the European Commission.

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- i „2030 - Agenda für Nachhaltige Entwicklung: Nachhaltigkeit auf kommunaler Ebene gestalten“, see: <http://www.staedtetag.de> [shortened link]
- ii „Global nachhaltige Kommune“, see: <https://skew.engagement-global.de> [shortened link]
- iii See: Bundesministerium für Wirtschaft und Energie (Hg.): Gesundheitswirtschaft Fakten & Zahlen, Ausgabe 2018, Berlin 2019, p. 1.
- iv See: <https://www.bmbf.de> [shortened link]
- v See: <https://www.essen.de> [shortened link]
- vi See: Assmann, Dirk, Jasmin Honold, Busso Grabow and Jochen Roose: SDG-Indikatoren für Kommunen – Indikatoren zur Abbildung der Sustainable Development Goals der Vereinten Nationen in deutschen Kommunen. Editor: Bertelsmann Stiftung, Bundesinstitut für Bau-, Stadt- und Raumforschung, Deutscher Landkreistag, Deutscher Städtetag, Deutscher Städte- und Gemeindebund, Deutsches Institut für Urbanistik, Engagement Global. Gütersloh 2018. Available online: <https://www.bertelsmann-stiftung.de> [shortened link]
- vii See: <https://nachhaltigkeit.bvng.org> [shortened link]
- viii See: <http://www.klimawerkstadtessen.de> [shortened link]