Management Summary

“The political and economic foundations of cities will determine whether four billion new urban houses in the next 40 years can be built, whether global warming can be limited to 2°C and whether the state and quality of our ecosystems and resources can be sustainably maintained.”

Zimmermann 2013: “The Economy of Green Cities”

The Fraunhofer Morgenstadt (“City of Tomorrow”) Initiative is making an active contribution to shaping sustainable urban systems worldwide. Members of the Initiative share three important convictions:

- Cities are the key to a sustainable future.
- Technical, social, and financial innovations are the key to sustainable cities.
- Interdisciplinary collaboration lies at the heart of urban innovation.

Based on these principles, the Fraunhofer Innovation Network “Morgenstadt: City Insights” has developed a pioneering approach to urban systems research. In the first phase, ten Fraunhofer Research Institutes joined forces with a network of high-profile industry and city partners to analyze successful sustainable urban solutions in six leading cities worldwide. The analysis resulted in a) an in-depth catalogue of best practices and innovations and b) a whole systems analysis toolkit that identifies key factors and forces that create the conditions for sustainable solutions to thrive.

In the second phase, the City Insights Network will focus on implementing innovative solutions in selected cities. Concrete, context-based solutions will emerge from the “Morgenstadt: City Insights” collaborative analysis process and the development of transition road maps.

Morgenstadt Foundations (Phase I)

In Phase I, the City Insights Initiative conducted an on-site analysis of six leading cities: Singapore, Freiburg, Copenhagen, Berlin, New York and Tokyo. Over one hundred global best practices were identified and evaluated in the sectors of energy, mobility, ICT, buildings, production & logistics, security, governance and urban water infrastructure.

The results of these investigations were brought together in an integrated action-oriented model for sustainable urban development. The “Future City” model is a tool that can be used to analyze any city’s sustainability performance and potentials from a whole systems perspective. Working together, relevant stakeholders can use the “Future City” model to derive targeted initiatives, projects, and strategies for accelerating sustainable development in each unique context.

Approach and scope (Phase II)

In January 2013 City Insights project partners inaugurated an R&D Platform and put forward a multitude of concepts for innovative applied research projects for cities and pilot projects in various sectors. The City Insights Network will build upon this R&D platform in the second phase.

We aim to become the leading global alliance for planning and implementing systems-based sustainable urban solutions in cities around the world.

A multidisciplinary project development team serves as a research and business development unit for initiating long-term collaboration with selected cities:

First, the team will identify a number of key cities that are ready to engage with the City Insights Network. Based on specific criteria three or four cities will be selected for the first round of collaboration.

Next, in close collaboration with city counterparts teams and local stakeholders, the project team will conduct an on-site analysis based on the City Insights model. They will identify promising action areas and develop strategies and roadmaps for the city’s long-term transition to sustainability. Throughout the process, City Insights partners will work together with cities and innovation networks to develop and implement projects.

The R&D platform coordinator will actively engage all actors by supporting and developing promising proposals, by searching for viable possibilities for project financing, and by coordinating the application process.

The City Insights Network facilitates focus groups around specific sectors and will engage more deeply with 3-4 selected cities.

Benefits for Project partners
- Cities
  - Learn about leading-edge technologies and applicable solutions from industry, research, and other cities
  - Identify strategic partners and form collaborations for the implementation of specific projects
  - Conduct a sustainability benchmarking quick check
  - Access funding for specific projects
  - Exchange and discuss experiences and promising practices
  - Promote city brand and attract international attention

- Companies
  - Learn how products relate to cities and how to maximize market position
  - Partner with business, research, and cities to generate pilot projects
  - Access selected German and international city markets with a comprehensive and systemic approach
  - Co-create roadmaps and urban development strategies in selected cities
  - Influence scope and content of smart/sustainable city projects in early project development stages
  - Gain access to regional and international funding
  - Promote global brand
  - Inform product development and logistics processes based on future city scenarios

The joint research and implementation project is financed primarily by members. The participation fee for different member categories is as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Participation fee</th>
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<tbody>
<tr>
<td>Enterprises</td>
<td>50 000 € p.a.</td>
</tr>
<tr>
<td>SME/NGO</td>
<td>25 000 € p.a.</td>
</tr>
<tr>
<td>Cities</td>
<td>15 000 € p.a.</td>
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</tbody>
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Expected results as of Dec. 2015
- Long-term collaboration established with at least three cities
- 3-5 system-wide projects per city, running or ready for immediate implementation
- 10-20 sector level projects by appropriate consortia of stakeholders and partners
Partners of the Morgenstadt network

Currently, the Fraunhofer Innovation network “Morgenstadt: City Insights” is comprised of the following partners:

- **Industry**
  - badenova, Bosch, Cadfem, Daimler, Dorsch Gruppe, Drees & Sommer, EnBW, EWE, Fichtner, Finmeccanica, IBM, Ill Taiwan, RTI, Qingdao Ecopark, SBA, Schüco, Siemens, TÜV Süd, Vattenfall, Volkswagen, Züblin

- **Cities**
  - Berlin, Freiburg, Ingolstadt, Düsseldorf, Norderstedt, Karlsruhe, Baden-Baden, Offenburg, Waldkirch, Lörrach, Kehl

- **Institutes**
  - Fraunhofer Institute for Industrial Engineering IAO
  - Fraunhofer Institute for High-Speed Dynamics, Ernst-Mach-Institut, EMI
  - Fraunhofer Institute for Open Communication Systems FOKUS
  - Fraunhofer Institute for Building Physics IBP
  - Fraunhofer Institute for Factory Operation and Automation IFF
  - Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB
  - Fraunhofer Institute for Material Flow and Logistics IML
  - Fraunhofer Institute for Manufacturing Engineering and Automation IPA
  - Fraunhofer Institute for Solar Energy Systems ISE
  - Fraunhofer Institute for Systems and Innovation Research ISI

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