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### Economic Commission for Europe

#### Committee on Housing and Land Management

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#### **Review of the implementation of the programme of work 2017-2018**

#### **Sustainable urban development and smart sustainable cities**

### **Pilot project exploring the opportunities of applying people first public private partnership model to solve urban infrastructure issues and regenerate the low-income residential district “Zhastar” in Astana, Kazakhstan**

#### **Note by the Secretariat**

##### *Summary*

Following the recommendations of the Country Profile on the Housing sector of Kazakhstan, the UNECE in cooperation with Astana Innovation, a company under the city government, and other partners launched a pilot project exploring the opportunities of applying a “people first” public private partnership model to solve urban infrastructure issues and regenerate the low-income residential district of “Zhastar” in Astana, Kazakhstan. This information note provides information on the project.

The Committee is invited to take note of the information provided.

# **Pilot project exploring the opportunities of applying people first public private partnership model to solve urban infrastructure issues and regenerate the low-income residential district “Zhastar” in Astana, Kazakhstan**

## **Introduction**

The UNECE Committee for Housing and Land Management (CHLM) provides a neutral platform for governments and stakeholders for dialogue and exchange of experiences and best practices with a view to promoting “the sustainable development of human settlements in the UNECE region while fostering economic and social prosperity and supporting democratic governance”. UNECE’s CHLM supports countries in the implementation of the 2030 Agenda and achieving the Sustainable Development Goals (SDGs), in particular, Goals 6,7,8,9 11, 17. The development of smart and sustainable urban development solutions is also a part of the Committee’s Programme of Work.

In 2016-2018, the UNECE in cooperation with the Government of Kazakhstan prepared the Country Profile on the Housing Sector of Kazakhstan. The Country Profile provides an analysis of the national achievements in housing as well as challenges; it emphasized the importance of the engagement of national partners in the design of innovation strategies at the local level and engagement with public and private international partners and organizations. The study also highlights the importance to engage in smart sustainable cities actions, by joining international initiatives, such as the UNECE “United Smart Cities” and using monitoring and measuring tools to set priorities. The “United Smart Cities”<sup>1</sup> is a multi-stakeholder programme which aims to address major urban issues in the UNECE region and supports the implementation of the 2030 Agenda at the local level. An important part of this programme is the elaboration of studies on the analysis of city’s performances that use the Key Performance Indicators (KPIs) for smart sustainable cities<sup>2</sup> elaborated under the global initiative United for Smart Sustainable Cities<sup>3</sup>.

To follow up on recommendations, the Country Profile Kazakhstan, the Joint Stock Company "Astana Innovations", the UNECE Committee on Housing and Land Management in cooperation with UN-Habitat and UNDP Kazakhstan and other partners initiated a pilot project for a smart sustainable city district in Astana, Kazakhstan. Astana Innovation is a company under the city government which promotes smart sustainable city solutions at the city level as well as fostering cooperation with the scientific and business community. It has a mandate to design and implement solutions to transform the proposed residential area in Astana into a smart and sustainable district.

The pilot project exploratory phase started in 2018, the project is expected to continue in 2019-2020 and beyond. This Note provides information on the pilot project.

## **About the project pilot district “Zhastar”**

Information on the district:

- a) the plot area – 34.7 ha;
- b) the existing buildable area above ground in the smart district (SD) – 302 330 m<sup>2</sup>;
- c) the population in the SD – 16 897;
- d) the potential buildable area (future) – 9 700 m<sup>2</sup>;
- e) the present value per square meter – USD 950;

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<sup>1</sup> More information is available at <http://www.unece.org/housing/smartcities.html>

<sup>2</sup> More information is available at <http://www.unece.org/index.php?id=47031>

<sup>3</sup> More information is available at <http://www.unece.org/housing-and-land-management/united-4-smart-sustainable-cities-u4ssc.html>

f) the range of values per square meter in Astana - average price is USD 987-1067.

### *Map of the district*



### **Project information**

The pilot project is based on three main priorities, which were established by the national and city governments in respective planning documents and programmes including in the “Government Programme “Digital Kazakhstan” for 2017-2020; Programme “Informational Kazakhstan -2020”; City Program “20 Steps”, and others, as follows

- 1) Increasing density in urban areas
- 2) Improvement of the public areas and solutions for communal utilities
- 3) Digitalization of the housing and public utilities, implementation of smart technologies and principles of sustainable development.

The project is based on the UNECE developed concept of People-first Public-Private Partnerships (PPPPs). People-first Public-Private Partnerships (PPPs) refer to partnerships that ensure that out of all stakeholders, ‘people’ are on the top. Its focus is on improving the quality of life of the communities, particularly those that are fighting poverty, by creating local and sustainable jobs, those that fight hunger and promote well-being, promote gender equality, access to water, energy, transport, and education for all, and that promote social cohesion, justice and disavow all forms of discrimination based on race, ethnicity, creed and culture. People-first PPPs must expand in scale, speed, and spread with more people having access to better services at affordable prices.<sup>4</sup>

This pilot project is exploring the opportunities of applying the public and private partnership model to solve infrastructure issues and regenerate a low-income residential district through developing a start-up company. Solutions that will be designed and implemented in this project should be bottom up and should answer to immediate demands from local authorities in Astana and the city’s residents, but they should be as well scalable, replicable, and self-sustainable.

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<sup>4</sup> <http://www.uneceppp-icoe.org/people-first-ppps/what-are-people-first-ppps/>

The project will be based on a comprehensive analysis of different urban infrastructure in the district, including of the most passable roads, streets, lanes to cover these areas by bicycle paths, smart infrastructure and urban solutions, lighting, etc. The list of planned technological solutions consists only of those solutions that will make the life of the district's residents as easy as possible.

The project's expected outcome is the setting up of a working PPP model for the regeneration of the proposed residential area in Astana City. It is expected that this project will result in a high positive impact on the quality of life of people in Astana and could be replicable to other cities in the country.

A list of proposed solutions that could be implemented in the future as part of the project, is presented below:

**"Environmental Solutions"** consist of those solutions that will reduce the district's environmental impact. These include the use of green infrastructure on buildings' roofs or roof gardens with an automated irrigation system, heat and light. This can significantly reduce air pollution as well as the load of rainwater streams to the storm sewage system.

**"Smart entrepreneurship"** consists of solutions aimed at improving the district's economic conditions. These include the use of the QR code to pay for purchases by only using the reader in the mobile application.

**"Social sector"** consists of solutions which aim to improve the lives of people with disabilities and creating a comfortable environment for them (for example, sign language interpreting, smart ramps, etc.)

**"Infrastructure solutions"** covers a pool of technologically clever solutions, such as smart pillars (Cisco), smart lighting, information board, etc.

**"Urban solutions"** is being worked out with the specialists of the City Planning Center of the capital city, which makes a large-scale analysis of the entire area and the possibilities of its modifications to create maximum comfort for every resident of this region, both great and small. Smart playgrounds, garbage containers with filling sensors, smart parking spaces, intelligent barrier, and bicycle paths are included in this cluster.

**"Transport and logistics innovations"** regard solutions to problems related to the pedestrian zone, breakdowns of traffic lights and traffic jams, floods and stops.

**"Comfortable public space solutions"** consist of solutions for improving the comfort of public areas and leisure and solutions such as warm sidewalks, lining tracks from luminescent road surfaces, warm and smart benches as well as use of renewable energy sources.

**"Security solutions"** is, for AI, the most important section of the whole project, since the organization of safety of city residents is their highest priority. Installation of face recognition cameras, the possibility of identifying machine numbers, etc. are included in this section.

**"Digitalization of housing and communal services"** include energy-efficient buildings, smart solutions in the entrance halls of the multi-apartment buildings, digitization of operations of homeowner's associations and smart metering.

Currently the project is in its exploratory phase and its implementation is expected to continue in 2019-2020 and beyond.

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