# Idle ecocity

Game Design Document - ver. 0.1

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# 1. Vision Statement

“Idle ecocity” is an idle mobile game, where the goal is to install facilities and dumpsters in an idealistic city, in order to make it sustainable. The player needs to transform each area of the city in a recycling ecosystem, that he can unlock through a minigame.

## 1.1 Gameplay Synopsis

“Idle ecocity” is a 2D idle and puzzle game, single player, designed in a simple and minimal style.

At the beginning the player starts in the middle of the city, already built. He has only a fixed amount of area unlocked, where he needs to install facilities and other sustainable materials, such as wind turbines, solar panels, dumpsters, small columns to recharge electric vehicles and so on. The player can leave the game running by itself, with minimum or zero interaction. Nevertheless, to buy upgrades and boosts, the players needs to interact with the game, in order to increase the growth of the game. The more the player increases sustainability in the city, the more a livability bar increases.

Moreover, if the player wants to unlock other areas of the city, before the livability bar must be over 80%, then he can play a minigame in order to activate a new area.

The minigame is based on offering energy to the houses in the neighborhood, through solar panels, taking care not to overlap the circuits of the panels, with the help of obstacles such as trees and stones.

## 1.2 Features set

Gameplay features:

- **Idle puzzle game** for mobile
- **Variety** of eco-friendly furnitures and items, to help the player progress
- **Dedicated minigame** to unlock new levels
- **Simple and instant goal**: make the city sustainable

Technical/artistic features:

- Awareness about **environmental issue**
- **Few and easy gestures**
- **Minimal and simple design**
- **Scalability** with new levels, items and customization

## 1.3 MVP

- **First area**
    - Livability bar
    - Eco-coins
    - City figure
    - Wind turbine
        - UI and gestures

- **Furniture tab**
    - Wind turbine mechanism
    - [Solar panel mechanism]

- **Boosts and shop tab** (only figurative)
- **Unlocking of a new area**
- **Minigame**
- **Autoplay and run in background**

## 1.4 User stories mapping

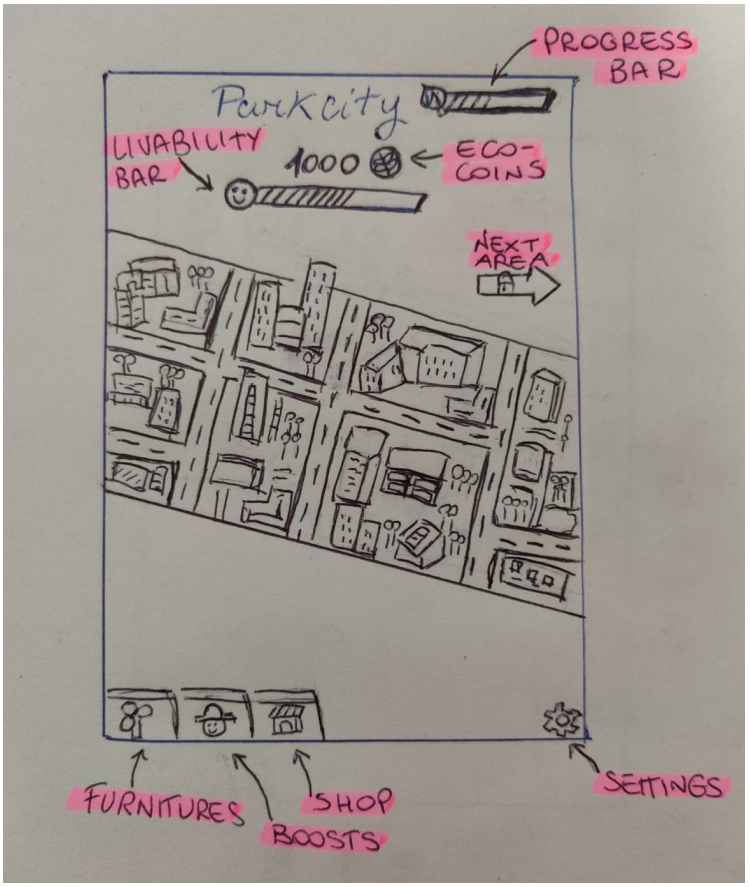
This user stories mapping highlights the game development in three releases, that correspond to three months, after which the beta will be released.

The first month is dedicated to the main mechanics, such as the main features of an idle game (earning eco-coins and upgrading furnitures) and the implementation of minigame, needed to unlock new areas. In the second month, will be added features related to the tutorial, release of new furnitures, implementation of boosts, leaderboards and settings. Finally, in the last month, the game will be completed with the additional features, as logo, GDPR approval and the shop, with microtransactions. Moreover, the last week will be focused on beta testing.

# 2. Gameplay and mechanics

## 2.1 Gameplay description

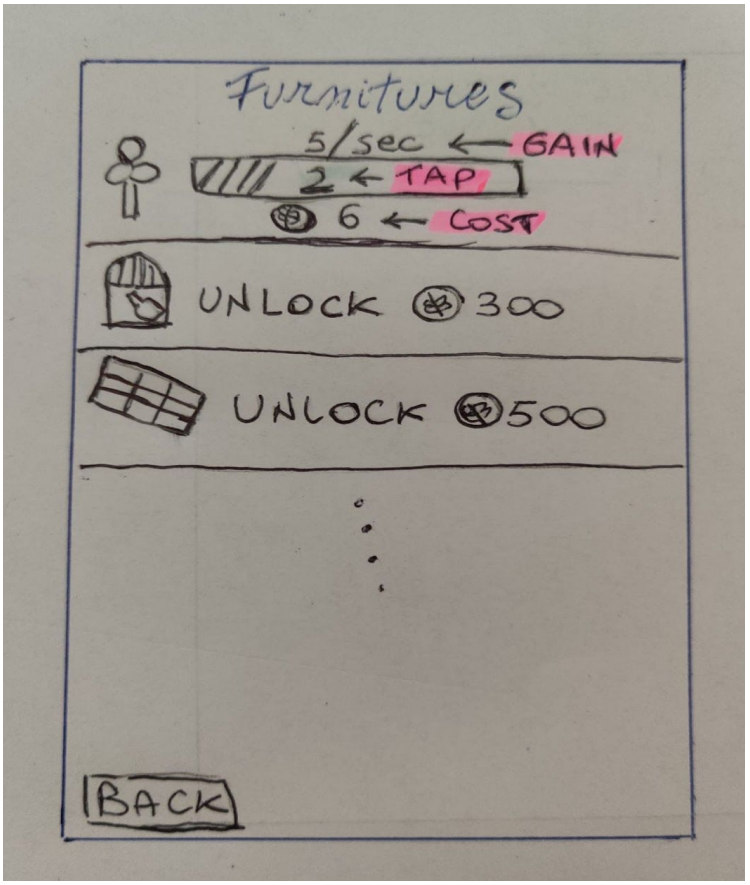
The goal of the game is to grow an idealistic city, installing eco-friendly furnitures, parks and dumpsters. The player starts with only a furniture in the middle of the city. The furnitures can be bought and upgraded through “eco-coins”, the currency of the game. When the player installs a furniture, this will produce eco-coins every second and the amount of these depends on the upgrade level of item.




A furniture can be upgraded by paying a certain number of coins and, after reaching a certain level, the autoplay will be automatically unlocked, so as to allow the player not to interact with the game to progress.
In order to speed up the production of eco-coins, the player can hire staff for maintenance of furnitures, such as technicians or gardeners.

The city has a livability bar, that indicates the welfare of people and enhances with the increase of gains and installed furnitures. When the player has unlocked all items of the area, the livability bar will be 100%.
Moreover the player has a progress bar, that represents the progression of player and increases with the furnitures and unlocked areas.

When the livability bar reaches 80%, the next area is visible and can be played only completing a dedicated minigame.

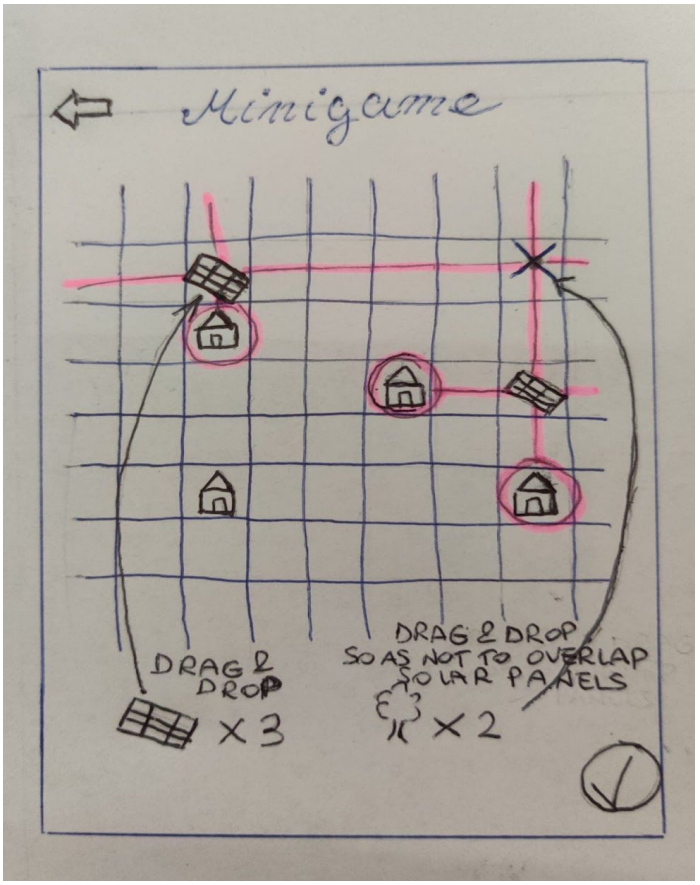



### 2.1.2 Minigame description

The minigame is structured in a grid, where the player must supply the houses of neighborhood with energy, through the positioning of solar panels. The solar panels provide energy vertically and horizontally, but the connection is interrupted when they encounters an obstacle, as a tree, or a house to power; so the player should strategically position the panels and the obstacles that are available. When the houses are all powered, the player can complete the minigame and play the new area.

#### Rules

1. Each house can be powered by **at most** one solar panel
2. A solar panel connection in a specific direction can be interrupted by an **obstacle** or a **house**
3. The minigame is completed when **all houses** are powered
4. If two solar panel connections cross, the **power supply** of the solar panels involved is **interrupted**
5. It’s **not necessary** to use all obstacles and solar panels.




Level progression

- In the first level the minigame is composed by a 4x4 grid and the player has available two solar panels and one obstacle to power three houses.
- In the second level the minigame is composed by a 5x5 grid and the player has available three solar panels and two obstacles to power four houses.
- In the third level the minigame is composed by a 5x5 grid, but in addition to houses will be present also a power station, which has a range of 3x3. If in range there is a house, this must be powered by **two** solar panels (one is not enough).

## 2.2 Progress system

There are two progress systems in the game:

- **Player progress**: at the end of each area the level of player increases, getting prizes as boosts or collectable.
- **In-game progress**: every area becomes more sustainable thanks to the incremental feature of the idle game. Indeed, unlocked the autoplay of furnitures, the game can progress in background.

## 2.3 Score system

*Area 1 (Parkcity)*

| Furniture | Purchase price (eco-coins) | Initial cost (eco-coins) | Cost to upgrade (coefficient) | Gain per second (eco-coins) |
|---|---|---|---|---|
| **Wind turbine** | Free | 20 | cost x 1.07 | Before 3 levels: 1<br>After 3 levels: gain x 1.2 |
| **Dumpsters** | 300 | 30 | cost x 1.12 | Before 3 levels: 2<br>After 3 levels: gain x 1.3 |
| **Solar panel** | 500 | 50 | cost x 1.13 | Before 3 levels: 3<br>After 3 levels: gain x 1.4 |
| **Charging stations** | 1000 | 100 | cost x 1.14 | Before 3 levels: 3<br>After 3 levels: gain x 1.5 |
| **Park** | 3000 | 300 | cost x 1.15 | Before 3 levels: 4<br>After 3 levels: gain x 1.7 |

(WIP)

*Area 2 (Greenlights)*

*Area 3 (Leafville)*

## 2.4 Currency

| Currency | How to obtain | How to spend |
|---|---|---|
| **Eco-coins** | Producing energy and benefits from eco-friendly items | Buying eco-friendly items to install in the city |
| **Emerald** | With the completion of an area or buying them from shop | Can be spent in the shop to buy boosts or speed up production |

| | | |
|---|---|---|
| **Exp.** | The level assigned to player upon the completion of an area | It cannot be spent. It's used for potential leaderboards |

## 2.5 Livability bar

The livability bar increases by 10% after 5 upgrades (tap on one or more furnitures) and, when the player unlocks a new furniture, it increases by 25%.

## 2.6 Boosts

(WIP)
The player can hire staff for maintenance of furnitures, in order to speed up the production in the city.

| Boost | Purchase price (eco-coins) | Duration (second) | Benefit |
|---|---|---|---|
| **Technician** | 1000 | 60 | Increase the eco-coins production of wind turbine and solar panels |
| **Dustman** | 3000 | 45 | Increase the eco-coins production of dumpsters |
| **Gardener** | 5000 | 30 | Increase the eco-coins production of parks |

## 2.7 Shop

(WIP)
There is a shop in the game to allow the player to buy boosts or aesthetic items. These can be bought with emeralds, that he can win unlocking areas or buy with microtransactions.

## 2.8 Leaderboards

(WIP)
The progress bar needs to display the leaderboard among the player's friends, connecting Google Play account or Facebook. Clicking on progress bar, the player can see a new tab with the leaderboard, divided according to the level of experience in the game.