

# Brief: 'Passages' - a game about light.

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## Problem Statement

Ireland is the lowest ranking country in the EU on the Climate Change Performance Index. With only 2 Green Party seats in the Dáil and a current focus on other (though just as valid) politically-charged issues, the pressure must come from the bottom up beginning with the individual citizen.

One aspect of energy waste comes from light pollution, which the oxford dictionary describes as *'the brightening of the night sky caused by street lights and other man-made sources, which has a disruptive effect on natural cycles and inhibits the observation of stars and planets.'*

Ireland saw a massive spike in light pollution in the years during and after the Celtic tiger boom. Dr. Brian Espey attributes this to both a growth in GDP and population i.e. the more money and citizens that we have, the more public and exterior lighting we install. The real issue arises when data shows that during the recession as GDP fell light pollution did not. Once lighting is installed, it is rarely removed. Research shows that approximately 35% of local council spending goes towards public lighting, however, the types of lights that are used result in up to a 70% waste of energy. This is due to the type of lighting used (non-shielded older halogen lighting), the amount of lighting that is installed but also because most of our public lighting is constant on (dusk until dawn) and unmetered. As a result of this over saturation of light, only 5% of Ireland's skies are ever truly dark. Lights from Dublin alone can be detected as far as Glendalough, travelling over the Dublin mountains.

With the roll out of new blue-rich LEDs in some counties there does not seem to be a fall in energy use. This is due to a 'rebound effect' - more LEDs are installed than there were original lighting fixtures because they are seen to be more 'eco-friendly'. Dr. Espey pointed out this seemed to be the case even in Trinity College where he works, new LED lights were installed in along the Rugby field, but the older lights were not removed and resulted in an increase in kilowatts.

There is a secondary issue with standard blue-rich LEDs - the colour temperature of these lights are around 4000 degrees, which is very close to what human (and a lot of animals) internal sensors believe to be daytime. When a residential area is retrofitted with 'energy saving' LED lights, the results for a lot of the public is disruptions in sleep patterns (a break of our circadian rhythms) and the health issues that come as a result. The same disruption causes issues with migration in birds and other animals, early budding times with some plants and the knock on effects of that.

## Aims and Objectives

All is not lost though, Ireland has two official Dark Sky Reserves, one in Kerry and one in Mayo, the latter being a gold standard rating. The aim of this project will be to 'bring to light' the issues surrounding light pollution to an audience that is perhaps not aware of it but also act as a form of tourism campaign to highlight that Ireland is not just green, its also rather cosmic. Inspiration comes from the following Attenborough quote:

"No one will protect what they don't care about; and no one will care about what they have never experience."

How do we allow an audience to experience the wonders of a pure night sky, while at the same time raising awareness for the campaigns and projects being undertaken by scientists and concerned citizens in our country? A recent study from Ipsos MORI commissioned by Google reveals that 85% of internet users use

their mobile phones most of the time that they are online. Of this number, almost 50% play mobile app games and uniquely, this statistic is even among men and women. If we transfer these numbers to the Irish population we can speculate that there is potentially 1.6 million mobile gamers in Ireland today. The games environment is a unique platform to project ideas as you have an engaged audience who are actively trying to discover, progress and succeed within a defined space. Gamification (the attributing of game elements to real life activity) has long been regarded as a successful learning tool, and researchers has discussed the theory that the overall battle towards climate change itself can be seen as a non-cooperative strategy game in which each country participating acts as as an individual. They create and enforce their own climate change policy but for a type of coalition will all other participating nations to work as one part to larger result in an effort sharing agreement.

Using a mobile game, the aim of the project therefore is to introduce the issue of light pollution to a wide audience, get them thinking about light, noticing light in their surroundings and inspiring them look up. The long term aim, with support from related print collateral and website, is to have a percentage of this audience begin to actively engage in the issue, increase visitors to the Dark Sky Reserves of Ireland but also increase demand on our policy makers to make positive changes to reducing light pollution.

## Personal Aims

- Add illustration, motion graphics and app design content to my portfolio
- Increase my own knowledge on sustainable practice
- Learn more about game design
- Increase my knowledge of web design and social media/marketing campaigns.

## Research

### Secondary:

- Game design
- Mobile Game Design UX/UI
- Environmental Games
- Games & Marketing
- Paris Climate Agreement
- Nudge Theory
- Rebound Effect
- Light Pollution
- Dark Skies Ireland
- DCC Energy PI
- SEAI
- EPA
- AR games
- Irish Mythology, landmarks around light (Newgrange etc.)

### Primary:

- Surveys: Environmental issues, Light pollution, mobile gaming
- Target Audience personas/profiles/interviews
- Interviews: Dr. Brian Espey, Tourism Ireland, Dark Skies Ireland
- Photography - Dublin, Mayo
- App development
- Concept development
- game development (characters/background)

## Potential Outcomes

Potential outcomes of the project would include an increased awareness of light pollution in Ireland and global scale. The creation of a nationwide tourism campaign surrounding dark skies of Ireland, potentially in conjunction with Dark Skies Festivals. Successful, commercially viable mobile game that advertises Ireland as a location, backed up by our connections with the sky in Irish mythology.

# Key Considerations and Deliverables

## Considerations:

- Game will have low-fi 2D graphics elements so as to have minimum energy consumption, potentially with an AR feature that relates the game to a real-life environment.
- Will be designed specifically for mobile devices with UX / UI in focus
- Use of 'casual gaming' design - the idea that the game can be picked up and played within short burst (i.e. when travelling) in order to create low-demand on player but maximum accessibility.
- Orientation - vertical to be played with one hand (again accessibility)
- Game will include community element - via WIKI page, upload function, etc.
- Game will be initially designed for iOS (too many variations of Android devices for optimisation)
- Ireland has a big connection to the sky with our sites at Newgrange, Dowth etc. Use this connection as inspiration for the design of the game.

## Deliverables

- Mobile AR game for iOS
- Printed information booklet for use in Tourism office
- Supporting Website
- Branding of project
- Social Media / Marketing collateral (viral video?)

## Reflection

TBC.