Using a 3D serious game to involve citizens in renewable energy transition management

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Abstract:

Dutch local governments have to encourage their inhabitants to engage more in the renewable energy transition, to obtain their help to meet their renewable energy targets agreed to nationally and within the EU. So, the question is how people can be given insight into the available renewable energy measures they can implement in the built environment and how their ideas can be collected?
To get the people motivated to share their ideas, local governments need to supply their people with reliable information about what they can do, and what the effects are. This information can be shared efficiently using geo-information, as it is easy to interpret and it can present different information together by using overlays. Moreover, when presenting the information in a 3D environment that is recognizable as their own neighbourhood they can relate the information presented to this environment. But they also need to be able to share their ideas of what renewable energy measures have to be taken with the policy makers, such that they can come to a broadly supported energy plan.
To motivate people to want to engage in the renewable energy transition of their neighbourhood, they have to be made to feel responsible for that transition and see what they can do to further that transition. Engaging people using a 3D serious game offers an effective way. By playing a game in their own neighbourhood that they can recognize and implement their own ideas there, the participants become more engaged. The winning element motivates people to consider their own views and judge whether they think it is a good decision. Using the 3D input from the participants as input for 3D geospatial models, the indicators such as energy production and investment costs can be calculated more thoroughly.
To stimulate people thinking creatively and sharing ideas even more, it is shown to be effective to engage people in a serious game. In this study, a game was designed to enable people to share their view on renewable energy and energy saving measures in their neighbourhood in a simple 3D game environment. The output of this game can be included in the planning process of the local government.