

Technical University of Denmark



Changing the Game: Tangible Energy Planning and Knowledge Sharing

Zeitouni, Gabriel; Heussen, Kai; Schröder, Sascha; Stern Dahl, Piret Liivak

Published in:

Book of Abstracts. DTU's Sustain Conference 2015

Publication date:

2015

Document Version

Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):

Zeitouni, G., Heussen, K., Schröder, S., & Stern Dahl, P. L. (2015). Changing the Game: Tangible Energy Planning and Knowledge Sharing. In Book of Abstracts. DTU's Sustain Conference 2015 [C-7] Lyngby: Technical University of Denmark (DTU).

DTU Library

Technical Information Center of Denmark

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

CHANGING THE GAME: Tangible Energy Planning and Knowledge Sharing

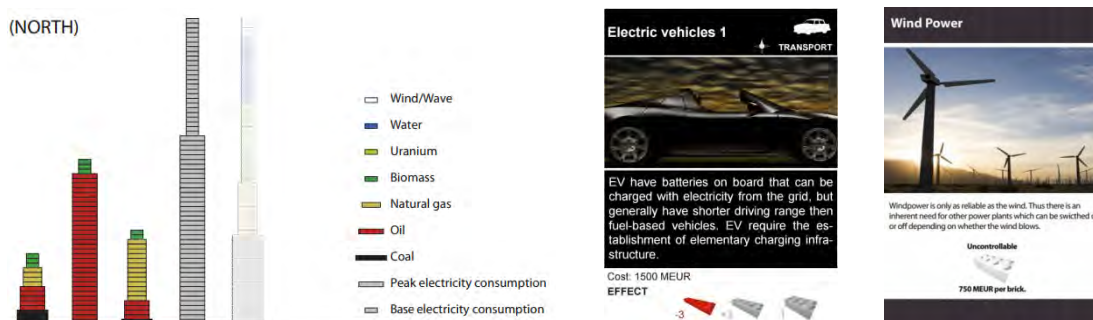
Gabriel Zeitouni³, Kai Heussen^{*2,3}, Sascha Schröder³, Piret Liivak Stern Dahl^{3,4}

1: DTU Management; 2: DTU Electrical Engineering; 3: EnergyCrossroads Denmark^[3]; 4: Climate KIC Nordic

*Corresponding author email: kh@elektro.dtu.dk

Energy systems planning decisions are characterised by a complex set of limitations and trade-offs that affect the resulting system's costs, security and carbon footprint. Changing the Game^[1] (CtG) was designed to de-mystify this energy planning and policy development process. It is a cooperative game and facilitates an informed discussion about the future the European energy system among stakeholders from multiple backgrounds such as economists, engineers and environmentalists as well as schools and universities.

CtG is based on a quantitative model of the European energy system divided in four characteristic regions, and its mechanics captures the underlying principles and limitations when planning energy systems. Fed with data derived from open scientific planning tools^[2] it provides, albeit crude, approximations of realistic energy scenarios divided into electricity, transportation, heating and industry sectors. CtG thus translates concepts and numbers into a visual representation expressed in LEGO® bricks and game cards, using brick colour and size to convey essential planning elements such as primary sources of energy and related CO₂ emissions, and cards to offer pre-computed planning options and costs. In the six years since its first launch, the concept has proven internationally successful and has been developed into versions for schools, universities, conferences, and ad-hoc workshops, as well as an online version^[4].



Energy use is divided into energy towers comprising LEGO bricks representing the primary energy use in the region (left); decision options are reflected in game cards for consumption change (middle) and electricity generation (right).

Facilitated group discussions ranging from two hours up to two days, including negotiations and conceptual explanations, result in a deep-dive, yet accessible, understanding of the energy challenges and opportunities. It is a proven, valuable didactic tool for different participants groups because it provides a frame to gain tangible insights into a clean, secure and prosperous energy future.

References

- [1] <http://www.changing-the-game.org/> [2] <http://www.streammodel.org/>
[3] <http://www.energycrossroads.org/> [4] <http://playpowerplay.dk/>

Note: Changing the Game embraces open access: all game materials are openly accessible via^[1].