

# Powerline

## Card game 'rules'

'Powerline' is a game inspired after the board game 'Timeline'. Its aims are to allow players to learn and understand about power consumption and production in a playful manner. The game cards present information about power consumption and production of various items, objects of our everyday lives (eg. cars, toasters, computers, etc.) but also of buildings, factories, monuments that are essential to our modern way of life.

In the context of climate change, energy transition and resource peaking theories, this game wants to help individuals develop their views and reasoning about the world of energy through comparison of figures.

A reminder:

A single light bulb will consume approximately 40W of electricity. Even though, figures in this game are mainly given in Watts, dividing the Watts by 40 gets you the number of shinning light bulbs representing the equivalent power. For some individuals light bulb may be better use for visualisation instead of Watts.

## 1 Setup

The game consists in 6 additional PDF files (one for each card category) that you have to print so as to play the game as intended. Each PDF is a 2 page document with the front cover of cards on the first page and the back cover of cards on the second. The document has been made so that printing on both side of A4 paper (long edge flip) should result in direct alignment of the front and the back of cards. Once the document is printed you may cut each individual card. Alternatively, you may have to print the PDF pages on distinct sheets and glue the front and back of respective cards together.

Cards were initially intended to be accompanied by images or drawings. Unfortunately, due to potential copyright issues this could not be done. To willingly improve aesthetically the cards, players may use their imagination to realise representative, funny, miraculous drawings on cards.

Once you are happy with the created cards, you may begin to play with these.

## 2 Cards

The game consists in 90+ cards divided in 6 categories: appliances, buildings, electronics, power plants, transports and world. The front of each card consists in top section with name and potentially little additional information as well as a large clear space for drawings. The back contains an additional bottom section with an estimation of power consumption/production (given in Watts) and additional information. The estimation of power consumption/production was obtained from values recovered from scientific/newspaper articles, blogs, forums and sometimes derived from personal calculations. Although, orders of magnitude of power should be correct, an approximate validity range is provided in addition to the main estimate. It remains possible to find exceptions that do not fall into the validity range. For instance, a high performance car would easily exceed the 150 kW suggested upper range limit. For cards under the world category, no range is given but a per capita power consumption value.

## 3 Basics

**Initial setup:** You may use the cards in any way you desire. This game was designed so as to learn, have fun and potentially further discuss with friends, the world of energy and its own future. If you struggle to find your own way of playing here are some suggested setup and rules.

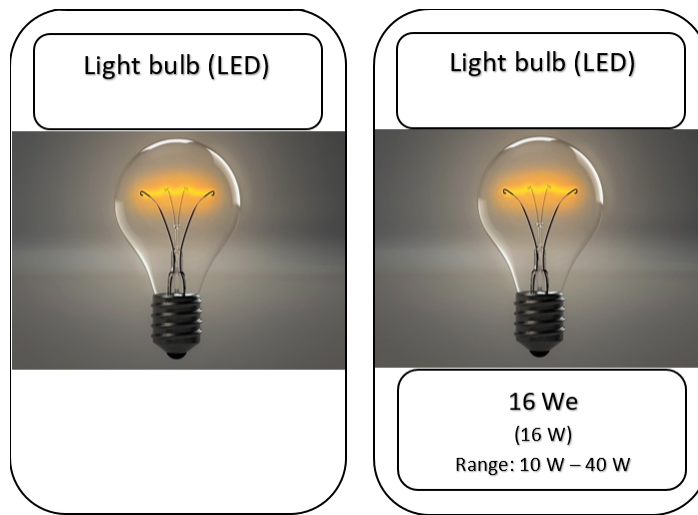


Figure 1: Example of front (left) and back (right) of a game card.

1. Distribution of cards faced down so no power values are visible to each players Suggested number of cards distributed to players:

Number of players	2	3	4	5	6+
Cards distributed	6	5	4	4	3

The cards should be distributed and displayed in front of players with the power section hidden.

2. Place in the middle of players the light bulb card (LED or incandescent card) or another card without revealing the power section. To determine the first player, you may ask everyone to say an estimate of the light bulb power consumption. The one with the closest answer start.

3. By turn, players pick a card in front of them and make a guess by placing it inside the 'Powerline' which initially start with a single card. If the card is placed correctly (ie. power consumption or production larger than the card on its left and lower than the one on the right), the card remains in the 'Powerline' and the player has therefore one less card to play. If the guess is not correct, the card is removed from the 'Powerline' and the player has to draw a card from the pile of cards that have not been distributed. The next player may then take his turn.

4. The player that has placed all his cards first wins the game. If no cards are left in the draw pile, the player with the least cards in front of him wins. The rest of the cards can be cooperatively placed in the 'Poweline'.