

FCHGO EPDM TRIALS

## ENERGY CARRIER CARD GAME RULES

FCHgo EPDM Team, October – December 2019

### *Terminology*

Card: A card defines a particular energy carrier (cards are can be printed from Carriers\_Card\_Game.pdf)

Host: Person that leads a game (usually the teacher)

Player: Single person in the game (usually a pupil/student)

Team: A group of players

Coupler/exchanger: Physical object or device where forces of nature exchange energy.

## (1) FIND THE COUPLER/EXCHANGER

### Age

8 - 12 years

### Number of players

From 2 to 8

### Materials

A number of cards chosen from the deck of energy carriers to be used during the game (before beginning, the teacher can remove the energy carriers the pupils are not familiar with).

### Metaphorical aspects of energy

Energy is transported by the (representatives of) forces of nature (energy carriers).

### How to play

The players are grouped into teams of 2-4 players. At the beginning of the first round, the host extracts a card from the deck that now defines the energy carrier to be considered, and shows it to the players. Within a preset time (usually 1-2 minutes), every team writes down a list of as many couplers/exchangers as possible in a single column or two separate columns, having the energy carrier as an input and/or output (see the example below).

When the time is up, every team shows the lists and the players receive their score: every coupler/exchanger that is mentioned by only one team, scores 3 points; every coupler/exchanger listed by more than one team, scores 1 point.

The game continues in this manner for a number of rounds (4-8).





**Example:**

Extracted carrier: Water in motion

<b>Player 1</b>		<b>Player 2</b>	
<i>Column 1 (carrier as input)</i>	<i>Column 2 (carrier as output)</i>	<i>Column 1 (carrier as input)</i>	<i>Column 2 (carrier as output)</i>
Turbine	Pump	Water mill	Pump
Water mill	River		
	Waterfall		

Scores:

Team 1: 1+3 (column 1) + 1+3+3 (column 2) = 11 (total)

Player 2: 1 (column 1) + 1 (column 2) = 2 (total)

## (2) FIND THE ENERGY CARRIER

### Age

8 - 10 years

### Number of players

2 - 8

### Materials

List of couplers/exchangers (choose the ones better known by the pupils):

<i>Exchanger</i>	<i>Input carrier</i>	<i>Output carrier</i>
Electric bulb	Electricity	Light
Fan	Electricity	Hot air
Car engine	Fuel	Air in motion
Train engine	Electricity	Motion
Sailing boat	Air in motion	Motion
Water heater	Gas	Hot water
Radiator	Hot water	Hot air
Photovoltaic panel	Light	Electricity
Solar heater	Light	Hot water
Hydraulic pump	Motion	Compressed water
Bicycle pump	Motion	Compressed air
Windmill	Air in motion	Motion/Rotation
Watermill	Water in motion	Motion/Rotation

(More can be added by the teacher)

### Metaphorical aspects of energy

Energy is transported by the (representatives of) forces of nature (energy carriers).

The carriers interact in specific locations/objects (called couplers/exchangers).

### How to play

The players are grouped in 2-4 players per team. At the beginning of each round, the host randomly chooses a coupler/exchanger from the list (above) and announces it to the players.

Within 15 seconds, every team identifies and writes down the input and output carriers.

For every correct energy carrier, the team receives 2 points (the host/teacher is also the referee); a wrong answer scores -1 points. The teams may explain the reasons for their choice and try to convince the referee that they are right.