



CHANGING THE GAME FACILITATION MANUAL



1. CtG WORKSHOP LOGISTICS

1.1 PLANNING WORKSHOP

1.1.1 “Changing the Game” (CtG) MATERIALS LIST

PRINTED MATERIALS ON STORED

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|--|----------------------|---------------------|
| • Change cards (120) | 30 pieces per region | A5 cardboard style. |
| • Capacity cards (40) | 10 pieces per region | A5 cardboard style. |
| • Targets & Results poster (4) | 1 piece per region | A2, laminated. |
| • Applied changes region poster (4) | 1 piece per region | A2, laminated. |
| • Region Fact sheet poster (4) | 1 piece per region | A3, laminated. |
| • Fuel price lists (4) | 1 piece per region | A4, laminated. |
| • Value of Electricity Production towers (4) | 1 piece per region | A5, laminated) |
| • In-game manual day 1 (8-12) | 2-3 per region | A4, colors. |
| • Background materials (8-12) | 2-3 per region | A4, colors. |

PRINTED MATERIALS FOR EACH GAME SESSION

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|-----------------------------------|-------------------------|------------------|
| • Accounting sheets (4) | 1 piece per region | A4, black-white |
| • Wrap up sheets (4) | 1 piece per region | A4, colors. |
| • Quiz | 1 for each participant | A4, black-white. |
| • Evaluation questionnaire sheets | 1 for each participants | A4, black-white. |

LEGO MATERIALS

- Game bag for each region (labeled with region name) (4)
- Lego green plate for each region (labeled each sector: industry, transport, heating, electricity) (4)
- Buckets (4).
- Bank resources bricks for each region (packed in a bag) (4)
- Extra electricity consumption bricks (4)
- Bricks for BAU2035 towers for each region.

FACILITATOR MATERIALS

- 4 Non-permanent text markers, one per region
- Wipes or spray for cleaning off text marker writing
- Painter’s tape, Sticky tack / elephant goo and pins to put posters on wall
- Spare bricks
- Facilitator manual, Facilitator background and CtG presentation.

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1.2 PARTICIPANTS

1.2.1 PLAYERS:

20-30 players in 4 groups of 4-6 people per full Europe CtG game set.

Previous to the workshop, it would be sent out an email to all the participants including:

- Link to CtG Video: <https://vimeo.com/30311553>
- CtG Background Material - *Stress importance of it being read!*

1.2.2 FACILITATORS

One facilitator plus one energy expert per full Europe CtG game set.

Tips:

- Read the background material for participants and the background material for facilitators in order to prepare for facilitating the game.
- Study the region fact sheets, the game cards and the target and results posters to get an overview of the information that will be presented to the participants
- Make sure you understand the quiz and are capable of answering the questions. In particular why peak electricity is more expensive to provide than base electricity.

PLANNING WORKSHOP LOGISTICS	<ul style="list-style-type: none"> ● Pack the Lego materials 	2 HOURS
	<ul style="list-style-type: none"> ● Pick the facilitator and CtG Store Materials 	
	<ul style="list-style-type: none"> ● Print the CtG Game session materials 	

1.3 VENUE LOGISTICS

- Quiet room with Projector
- 4 tables with 6 chairs for each
- Preferably separation walls with possibility to hang posters with needles or tape
- (Food/drinks)

SET UP THE WORKSHOP VENUE	<ul style="list-style-type: none"> ● Arrange the tables in four groups (regions). Assign to each group between 4 to 6 chairs. 	1 HOUR
	<ul style="list-style-type: none"> ● Hang the posters on the wall for each region. 	
	<ul style="list-style-type: none"> ● Build the Lego towers for each region 	
	<ul style="list-style-type: none"> ● On each region's tables, it is placed: <ul style="list-style-type: none"> *1 Background material; 2-3 IN-game manual; *Region's Change Cards and Capacity Cards; *A bag with the Bank region's bricks *A bucket with the extra bricks for the electricity consumption. 	

1.4 LEGO BRICKS LIST

1.4.1 BANK RESOURCES BRICKS FOR EACH REGION

BANK RESOURCES BRICKS		NORTH	EAST	WEST	SOUTH
COAL	2x10 Black	8	6	10	8
OIL	2x8 Red	8	8	8	8
NATURAL GAS	2x6 Sand	20	20	20	20
CCS COAL	2x4 Dark Grey	8	12	8	8
BIOMASS*	2x4 Dark Green	9	20	9	6
URANIUM	2x4 Light Green	15	20	5	20
WATER*	2x4 Blue	6	2	2	3
SOLAR	2x4 Yellow	10	10	10	20
WIND	2x4 White	25	20	20	20

NOTE: It is crucial to get the number of bricks right for biomass and water, therefore they are marked with an *. For the other resources +/- 3 bricks is acceptable.

1.4.2 EXTRA BRICKS FOR THE ELECTRICITY CONSUMPTION IN THE BUCKET:

EXTRA ELECTRICITY BRICKS		NORTH	EAST	WEST	SOUTH
BASE EL	2x6 Light Grey	20	20	20	20
PEAK EL	2x4 Light Grey	5	5	5	5

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1.4.3 BRICKS FOR THE BAU 2035 TOWERS

INDUSTRY TOWER BRICKS		NORTH	EAST	WEST	SOUTH
COAL	2x10 Black	2	6	2	3
OIL	2x8 Red	3	3	4	5
NATURAL GAS	2x6 Sand	5	11	7	11
BIOMASS	2x4 Dark Green	3	2	1	2

TRANSPORT TOWER BRICKS		NORTH	EAST	WEST	SOUTH
COAL	2x10 Black	0	0	0	0
OIL	2x8 Red	28	30	26	41
NATURAL GAS	2x6 Sand	0	0	0	1
BIOMASS	2x4 Dark Green	1	2	1	2

HEATING TOWER BRICKS		NORTH	EAST	WEST	SOUTH
COAL	2x10 Black	1	4	0	0
OIL	2x8 Red	4	9	7	8
NATURAL GAS	2x6 Sand	15	17	15	17
BIOMASS	2x4 Dark Green	4	6	3	6

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ELECTRICITY TOWER BRICKS		NORTH	EAST	WEST	SOUTH
COAL	2x10 Black	8	25	2	14
OIL	2x8 Red	0	0	1	3
NATURAL GAS	2x6 Sand	11	7	8	16
BIOMASS*	2x4 Dark Green	2	2	1	0
URANIUM	2x4 Light Green	9	9	29	8
WATER*	2x4 Blue	13	4	3	12
SOLAR	2x4 Yellow	0	1	0	1
WIND	2x4 White	2	3	1	4

ELECTRICITY CONSUMPTION TOWER BRICKS		NORTH	EAST	WEST	SOUTH
BASE EL	2x6 Light Grey	30	36	31	39
PEAK EL	2x4 Light Grey	15	15	14	19



2. WORKSHOP FACILITATION

2.1 PLANNING WORKSHOP

GENERAL FACILITATION TIPS

- Make sure everyone is following the process – watch out for participants that get lost in the process and start playing with the LEGO bricks.
- Keep time – Discussions can be time-consuming and therefore participants need to be pushed a little. We cannot discuss forever – decisions need to be made!
- The model behind the game is *not* up for discussion while playing. We are more than happy to receive comments afterwards, but during the game the rules need to be followed.
- Watch the groups to see if they read out loud to each other and read the entire explanatory texts. Make sure the groups keep time in this step.
- Remember to allow for breaks

2.1.1-INTRODUCTION TO CHANGING THE GAME

INTRODUCTION “Changing the Game”	<ul style="list-style-type: none"> • Set up a visual presentation • CtG purpose, background and rules. 	20 MIN
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TIPS:

1. Explain difficult concepts thoroughly and make sure everyone in the group has reached the level of understanding necessary to play the game.
2. Opportunity to test whether the basics of the game have been understood with the Quiz.
3. Help the participants to get to know each other in the region groups.
4. Following the introduction ask them to use the In-Game Manual and take turns reading.



2.1.2-PHASE I – TARGET SETTING

PHASE I TARGET SETTING	<ul style="list-style-type: none"> • Understand the Region • Agree on 2035 Region Targets 	30 MIN
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TIPS:

- 1.- There is only limited time to do this step. Watch out for participants getting lost in detailed discussions!
- 2.- Targets need to be written on the poster.
- 3.- Questions such as:
 - *“What should a politician say in order for you to want to vote for him?”*
 - *“What do you think of the European energy strategy for 2030?”*
 - *“Where do we want to be in 2050? And what should be done half way to there?”*, can perhaps be helpful.

2.1.3-PHASE II – CHOOSING YOUR PATH

PHASE II CHOOSING YOUR PATH	<ul style="list-style-type: none"> • Introduce the “Change Cards”. • Explain the Accountant and Brick bank manager role • Sort the change cards to transform the transport, heating, industry and electricity consumption tower. • Provide an accounting sheet and a fuel price sheet to each region. 	1.5 HOUR
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TIPS:

1.- **Change card demonstration:**

When a group (region) enters the change card phase, tell them how it works.

Go through the implementation of “Electric vehicles 1”. Remember all the steps in using this card and focus on the real world implications of each step.

- Read the title and the entire information out loud to the participants
 - And stress the fact that they have to do so in turns afterwards
- Pay the associated cost (more expensive vehicles – mainly because of batteries)
- Put oil bricks in savings bucket (avoided gasoline and diesel consumption)

Add electricity bricks (because of charging) – net addition of 4 bricks plus 1 being converted from peak to base due to night time charging and utilization of existing capacity¹.

- Cash in savings

¹ Fuel use goes up by 4 bricks, capacity need is only raised by 3 “bricks”
 $5 \text{ base} * 1 \text{ per base} - 1 \text{ peak} * 2 \text{ per peak} = 3$



- 2.- Tell the participants that they should first sort all the cards. Next step is implementation of all cards, and then comes cashing in savings.
- 3.- Make sure it is understood that electricity bricks are just keeping track of consumption and hence doesn't cost anything.
- 4.- Selling the electricity BAU2035 Tower
Your task is to ensure that the groups have understood the real world interpretation of selling the BAU2035 electricity production tower.

2.1.4-PHASE III – POWER YOUR FUTURE

PHASE III POWER YOUR FUTURE	<ul style="list-style-type: none"> • Buy the BAU electricity production tower to each region • Introduce the capacity cards • Explain how to build their new electricity production tower to each region. 	45 MIN
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TIPS:

- 1.- Rebuilding the electricity tower.
Make sure the group is meeting either the demands of base electricity or peak electricity first. Not both at the same time unless if group is very skilled.
The number of green and blue bricks in the bank is limited by how much sustainable biomass is available and the potential for hydropower.
- 2.- If groups want more biomass (green) bricks you should let them know that this is not sustainable. If you do give them more green bricks you should put a post-it with the text “unsustainable biomass” on their Targets & Results poster. It is *not* possible to get more blue bricks as there is no more area to dam.



2.1.5-PHASE IV – WRAP UP

PHASE IV WRAP UP	<ul style="list-style-type: none"> • Calculate the new scenario: Total energy consumption; Share of renewables; Consumption of oil and gas; Energy related CO2 emissions • Evaluate if the region's targets have been achieved 	30 MIN
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TIPS:

1.- Wrap-up Sheet.

Hand out the wrap-up sheet when the groups have completed the process of creating a scenario. The sheet should be self-explanatory. Participants can use this sheet to fill out the results on the Targets & Results poster

2.- Evaluation and Expert Feedback

Watch out for scenarios that are relying heavily on one technology. For example:

- Putting in >10 wind bricks will pose a challenge to industry (to produce the turbines), siting (find the space) and system balancing (what to do when production fluctuates?).
- Power lines are not accounted for in CtG and putting a lot of wind power in Region north backed by hydropower implies producing almost all the electricity in the North Sea when the wind blows and sending a large part of that to Norway and Sweden. The enormous power flows would need to be reversed when the wind stops and the hydro power plants produce all the power. This requires quite a bit of cabling!
- Check for whether regions have been flooded (group using more hydro power than in BAU scenario).

Comment on specific change cards that have been implemented.

Comment on the industry's ability to deliver. E.g. "Is it even realistic to put up 20.000 wind turbines within the next twenty years?"

In what ways is the group ambitious and in what ways not?

Comment on social/political acceptance of behavioral changes. Would people really be willing to go for lower indoor temperatures or car free Sundays? *Would the participants themselves?* Often these changes are picked because they seem easy, but in fact they are not.

Comment on the importance of fuel prices in assessing the feasibility in the group's scenario. We use a conservative 50 €/barrel oil price. Some projections say 100 €/barrel or even more. How would that impact the overall feasibility? *And what does that say about studies claiming one future to be better in economic terms than another?*