

The IO Game – Tutorial

This tutorial (vs the computer) is extremely progressive and only intends to help you get easily into the multiplayer game. Do not think too much in the beginning, follow our advice and do not pay attention to the score (the best way to prepare yourself for the game is to try everything, even actions that you believe are mistakes... And of course, the scores will be reset)

You are responsible for managing a firm producing and selling a perishable good. You will play the same game against the same players on 3 completely separate markets: Actions on one market do not have any direct impact on the other markets. You can see these markets as parallel universes in which demand and production costs are the same, but which will be subject to different scenario events (during the real game: in this tutorial, all the markets will have exactly the same characteristics).

The timeline is separated into years. At beginning of the year, you have to choose how much to produce and what technology to use for that. Then, once every firm has decided how much to produce, production takes place and you have to choose the price at which you will sell your goods.

(Remark: Alternatively, you can also consider that you are retailers ordering perishable goods from a supplier, who will not be able to deliver more than what you ordered if you are out of stock.)

For pedagogic reasons and to allow you to correct potential pricing mistakes, you will play the "sales part" twice (but this does not correspond to any real-world situation). We call rounds these two sales sequences (for each round, the maximum quantity you can sell is equal to the total quantity you selected at the production stage).

Note that goods are perishable: what is not sold at the end of a round is lost.

1st year of the tutorial

Production choice

On the first screen, you must select production on each market (For now, you only have access to one technology, techno P). Do not think too much for the moment, the goal is to get used to the interface. We will talk about costs next year.

airECONsim Year 1 Guide Results Edit Profile *Player 1 Logout

Scores

- *Player 1 €50,000
- Robot 2 €50,000
- Robot 3 €50,000
- Robot 4 €50,000

Production Choice - Year : 1

Market 1, "Mrk.1" (Your competitors: Robot 2 Robot 3 Robot 4)

Goods	Technology	Production Cost (€)	Production + Distribution Cost (€)	CO2 emissions (tons) by Round
1200	Techno P	62400	70800	132

Market 2, "Mrk.2" (Your competitors: Robot 2 Robot 3 Robot 4)

Goods	Technology	Production Cost (€)	Production + Distribution Cost (€)	CO2 emissions (tons) by Round
1000	Techno P	52000	59000	110

Market 3, "Mrk.3" (Your competitors: Robot 2 Robot 3 Robot 4)

Goods	Technology	Production Cost (€)	Production + Distribution Cost (€)	CO2 emissions (tons) by Round
1000	Techno P	52000	59000	110

Type 1200, 1000 and 800 goods for markets 1, 2 and 3. Validate and check your competitors' decisions on the next screen:

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Scores

- *Player 1 €50,000
- Robot 2 €50,000
- Robot 3 €50,000
- Robot 4 €50,000

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Production Choice

Year 1

Market 1, Mrk.1

Team	Production by Round	Techno	CO2 Emissions by Round	CO2 cost by Round
*Player 1	1200	Techno P	132	€0
Robot 2	921	Techno P	101.31	€0
Robot 3	1003	Techno P	110.33	€0
Robot 4	850	Techno P	93.5	€0

Production each Round (Total 3974 goods)

- *Player 1
- Robot 2
- Robot 3
- Robot 4

1200 - Techno P

921 - Techno P

1003 - Techno P

850 - Techno P

Market 2, Mrk.2

Team	Production by Round	Techno	CO2 Emissions by Round	CO2 cost by Round
*Player 1	1000	Techno P	110	€0
Robot 2	921	Techno P	101.31	€0

Sales Round

On the next page, you are invited to select your price on each market:

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Scores

- *Player 1: €50,000
- Robot 2: €50,000
- Robot 3: €50,000
- Robot 4: €50,000

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Price Choice

Round 1/2

Market 1, "Mrk.1"

Price: 80

Total: 3974 / Remaining: 3974 goods

Parameters

	*Player 1	Robot 2	Robot 3	Robot 4
Available Goods	1200 (Techno P)	921 (Techno P)	1003 (Techno P)	850 (Techno P)
Distribution Unit Cost (variable, not paid yet)	€7	€7	€7	€7
Production Unit Cost (fixed, already paid)	€52	€52	€52	€52

	*Player 1	Robot 2	Robot 3	Robot 4
Fixed Costs over the Round (excluding CO2)	€70,400	€55,892	€60,156	€52,200
CO2 Fixed Cost over the Round	€0	€0	€0	€0

Once again do not pay too much attention to the data displayed here, just enter prices around €80 on each market and validate.

Check your sales results. Remember that goods are perishable: unsold goods are lost (here, 75 goods for Robot 2, ...).

airECONsim Year 1 Guide Results Edit Profile *Player 1 Logout

Scores

- Robot 2: €121,490
- Robot 3: €116,424
- Robot 4: €109,129
- *Player 1: €89,000

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Sales

Round 1/2

Market 1, Mrk.1

Total: 3974 / Unsold: 241 goods

Results

	*Player 1	Robot 2	Robot 3	Robot 4
Price	€80	€95	€89	€99
Sales	1200 / 1200	846 / 921	975 / 1003	712 / 850
Sales at "halftime"	697	405	442	338
Total Production	1200 (Techno P)	921 (Techno P)	1003 (Techno P)	850 (Techno P)

	*Player 1	Robot 2	Robot 3	Robot 4
Revenue over the Round (excluding CO2 and exceptional)	€96,000	€80,370	€86,775	€70,488
Fixed Costs over the Round (excluding CO2 and exceptional)	€70,400	€55,892	€60,156	€52,200
CO2 Fixed Costs over the Round	€0	€0	€0	€0
Variable Costs over the Round	€8,400	€5,922	€6,825	€4,984
CO2 emissions (tons)	132	101.3	110.3	93.5

2nd sales round

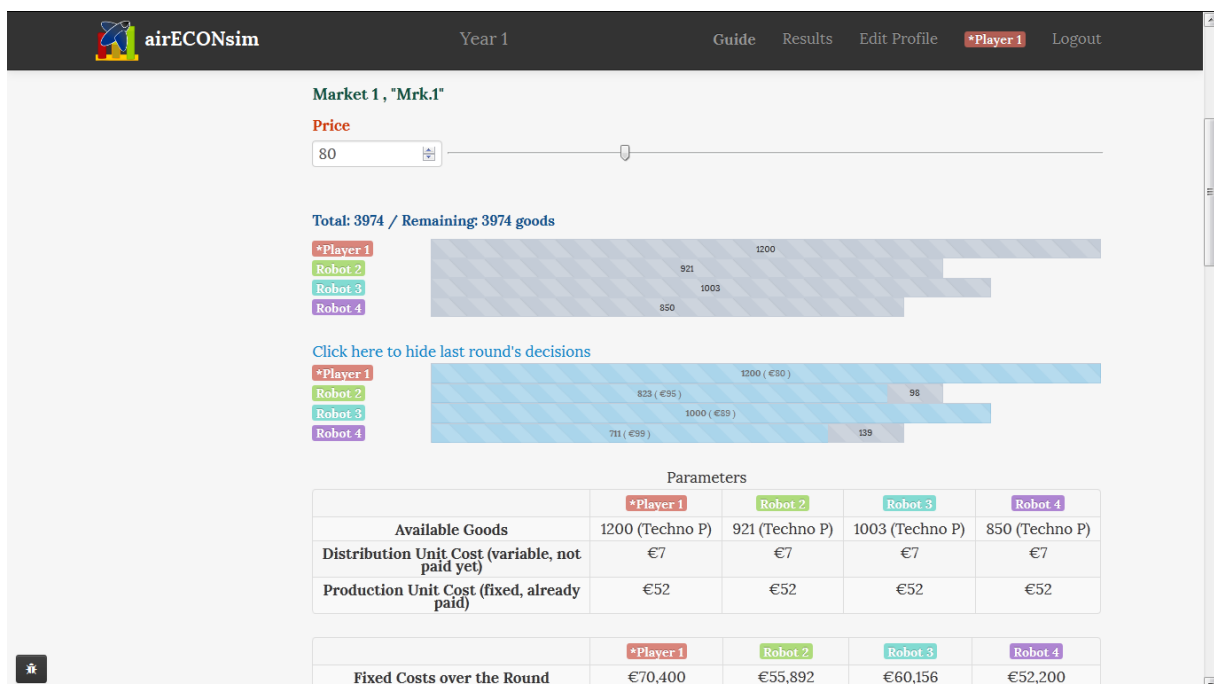
We start a new round and play the sales phase once more (understand that we are only doing once more exactly what we did in the previous round. This is not supposed to represent any "real-world" phenomenon, it is just intended to allow you to correct potential mistakes) → once again, you have 1200, 1000 and 800 goods to sell on markets 1, 2 and 3.

It's up to you to choose your prices. If you want, you can go back and change your decisions at any time of the tutorial (Click on the button on the left of the screen). Also note that you can find all the past results, by clicking on "results" in the topbar.

For your information, if you and your 3 competitors all set the same price on a market, each firm will sell, on average:

Price	30	40	50	60	70	80	90	100	110
Sales/firm	1389	1280	1183	1096	1016	941	869	804	741

Price	120	130	140	150	160	170	180	190	200
Sales/firm	680	622	566	512	461	409	361	313	267



As you will see, products are slightly differentiated and customers have different brand preferences... (There is also some random in the customer's characteristics): The cheapest firm will usually not get the whole demand.

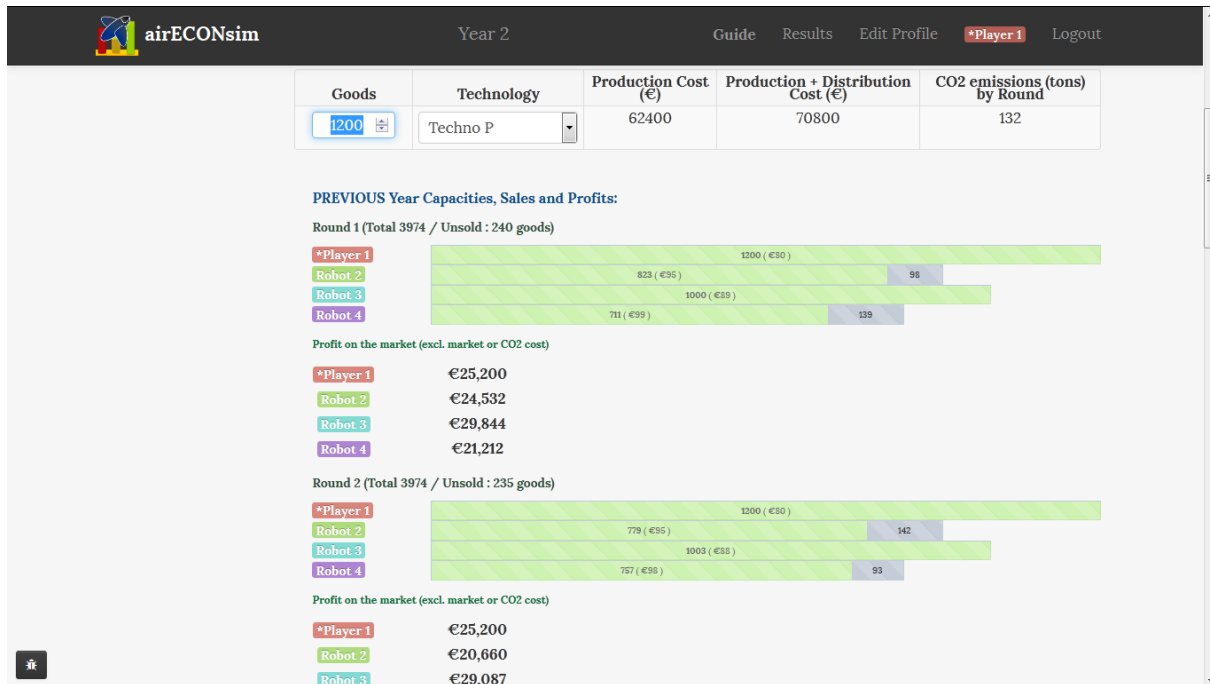
Also note that potential consumers "arrive" on the market one after the other: If a firm has few goods to sell and has a very low price, it will sell all its goods very fast and consumers "arriving" later on the market will only be able to buy from one of the other firms (if they want to buy).

2nd year of the tutorial

Scores are reset in year 2.

Now, it's up to you to decide how much to produce and what technology to use. You now have access to 2 different technologies, Techno P and to Techno S (remember that the quantity entered will be available once in round 1 and once in round 2).

For each market, you have information displayed, reminding you about previous year's productions, prices, sales and profits (green bars).



Each technology is characterized by a fixed cost, a unit production cost (paid even if the good is not sold), a unit distribution cost (paid only if the good is sold) and by CO2 emissions. These costs are detailed at the bottom of the page:

Technology	Techno specific fixed cost (by round), F_T	Unit production cost, c_1	Unit distribution cost, c_2	CO2 emissions (tons) per good produced
Techno P	€0	€52	€7	0.11
Techno S	€0	€15	€51	0.11

For example, if it uses Techno S, a firm must pay €15 for each good produced, and then €51 for each good sold. Each **produced** good « emits » 0.11 tons of CO2 (CO2 emissions are hence completely determined by choices at the production phase).

And there is an additional €8000 fixed cost F on each market over which a firm is active (i.e. on which it produces more than 0), whatever the technology used.

So, if a firm is active on a market, produces q_p each round, and sells q_s during a round, it will bear a cost $F+F_T+C_1 \cdot q_p+C_2 \cdot q_s$ this round.

Here again, do not think too much about how to adapt your strategy to these policies, this will be the subject of the game that you will play in a few minutes (with many different, more or less elaborate policies).

There will be no new feature in this tutorial. Just play until you feel you have understood the game structure and interface, and you are ready to start the real game against other human players.

Last remark, players sometimes consider that producing a lot and selling at a very low price is a good strategy. **Before the real game, try this strategy in this tutorial and see how and why this does not work. It is better not to start the game with huge losses!**

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IO games

Air Transport Economics game

Energy Economics game

CO2 Emissions and Environmental Policy game

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