BIOBASED BATTLE

COMPETIÇÃO INTERNACIONAL DE BIOECONOMIA

October 2023

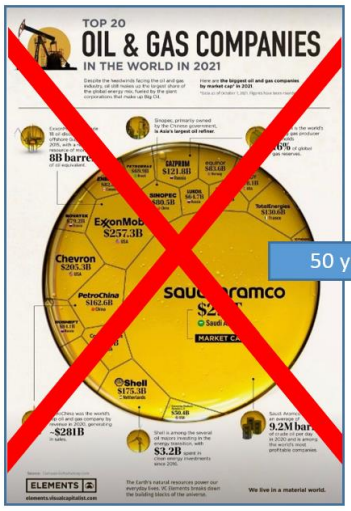
INTRODUCTION

The Biobased Battle is a model for educational development. During the battle, students from Dutch and Brazilian institutions work together to solve environmental issues in the industrial sector. Throughout the week, the teams receive an assignment and must build innovative solutions rooted in biobased economy concepts. The battle ensures that students must quickly tackle a complex issue and that they work together with students from different backgrounds. This ensures that students learn to recognize each other's field of expertise and use it to achieve valuable results at the end of the week.

The Biobased Battle is a product of Living Lab Biobased Brazil, hosted by the Universidade Federal de Juiz de Fora (UFJF), Universidade Federal de Ouro Preto (UFOP), Universidade Federal de São João del-Rei (UFSJ), and Avans University of Applied Sciences. This program is organized in cooperation with the Centre of Expertise on Biobased Economy (Breda, the Netherlands).

THE ASSIGNMENT

The year is 2073. Starting in the 2020s, the Energy and Material Transition has been a resounding success. All energy now comes from wind, sun, and renewable sources. All carbon-based materials are now made from renewable sources. The former Oil and Gas multinationals have almost disappeared. Their former market value of more than 14 trillion dollars has been wiped out. Instead, new conglomerates have risen and have taken over their role.



2023: oil and gas companies combined worth more than 10 trillion dollar

2073: 'clean Energy and Materials' companies together worth more than 10 trillion dollar

Fossil as a feedstock has been replaced with biobased sources and CO_2. The full potential of all available agricultural waste- and side streams has been unlocked.

	2023: fossil based	**2073: renewable**
energy	14 gigaton oil, gas, and coal	solar & wind
materials	2 gigaton oil, gas, and coal	4 gigaton biobased

YOUR CHALLENGE

The challenge. You are living in 2073, and as a future historian you are looking back in time: can you describe how this huge transformation took place? Pick a (fictional) 2073 company and answer some of the following questions:

- In 2023, which major idea was embraced by a company that brought a change from fossil fuel use to renewable sources?
- What volume of costs (CAPEX & OPEX) are needed to implement the idea at a commercial level? What kind of financial opportunities are possible for the idea?
- What are the environmental benefits (emission reduction, durability increase, biodegradability) of the chosen solution in comparison with traditional and current products?
- What would the ideal relationship between stakeholders like Consumers, Producers, Distributors, and Government look like if there were no limitations? What social and political changes would be necessary to make this ideal scenario a reality?

LEARNING GOALS

After having successfully followed the project, students can expect to have practiced the following:

- The students can assess different ideas within a week in such a way to be able to select and present their best solution to the given problem.
- The students can cooperate in intercultural and interdisciplinary teams in such a way to integrate their different points of view into the solution proposed.

PROJECT RULES

The following rules apply to the project:

- The communication of each student group will be online, and the tutor should also be part of this group. We advise students to bring a computer for the sessions, at least one for each group/country. For sharing documents, we suggest Microsoft Teams.
- Being absent from compulsory project activities (workshops, meetings, practicals, presentations) more than once can result in the student being removed from the event.
- If, for some urgent/meaningful reason, you cannot attend a given activity, you must inform your tutor and your fellow students before the meeting.

SCHEDULE

Monday, October 23		
Brazil	**Netherlands**	**Activity**
08:00 - 08:30	13:00 – 13:30	Opening and explanation of the Biobased Battle *(Bruno Bastos / Thais)*
08:30 – 09:00	13:30 – 14:00	Definition of the groups, checking network, meet & greet project group (including intercultural differences and group expectations)
09:00 – 09:45	14:00 – 14:45	Introduction of the assignment *(prof. Martijn Zieverink – MNext & Peel Pioneers)*
09.45 – 10.00	14:45 – 15:00	Assignment (further explanation) *(Bruno Bastos)*
10:00 – 10:30	15:00 – 15:30	Discussing the assignment and brainstorming to form 20 ideas
10:30 – 11:20	15:30 – 16:20	Prioritizing ideas (from 20 to 3 ideas) & discuss selection with the tutor
11:20 – 11:30	16:20 – 16:30	Wrap-up/Closing *(Bruno Bastos)*

Tuesday, October 24		
Brazil	**Netherlands**	**Activity**
08:30 – 08:40	13:30 – 13:40	Kick-off *(Bruno Bastos / Thais)*
08:40 – 10:00	13:40 – 15:00	Desk research on 3 ideas (technical, financial, and marketing)
10.00 – 10.10	15:00 – 15:10	Break
10:10 – 11:00	15:10 – 16:00	Set up MCA to score 3 ideas and discuss MCA with the tutor
11:00 – 11:30	16:00 – 16:30	Score MCA and choose the best idea based on the outcome of MCA
11:30 – 11:40	16:30 – 16:40	Wrap-up/Closing *(Bruno Bastos)*

Wednesday, October 25		
Brazil	**Netherlands**	**Activity**
08:30 – 09:00	13.30 – 14.00	Kick-off *(Bruno Bastos / Thais)*
09:00 – 09:10	14:00 – 14:10	How to build pitches
09:10 – 10:00	14:10 – 15:00	Detailing of the best idea (technical, financial, marketing)
10.00 – 10.20	15:00 – 15:20	Break
10:20 – 11:30	15:20 – 16:30	Further detailing of best idea + start with a pitch presentation
11:30 – 11:40	16:30 – 16:40	Wrap-up/Closing (*Bruno Bastos*)

Thursday, October 26		
Brazil	**Netherlands**	**Activity**
08:30 – 08:40	13:30 – 13:40	Kick-off (Bruno / *Thais*)
08:40 – 10:00	13:40 – 15:00	Work on pitch presentation
10:00 – 10:40	15:00 – 15:40	Pitch of the groups for the jury
10.40 – 10.50	15:40 – 15:50	Short break
10:50 – 11:20	15:50 – 16:20	The Pitch of the groups for the jury continued
11:20 – 11:40	16:20 – 16:40	Break + define results
11:40 – 12:00	16:40 – 17:00	Award ceremony (and final reflection)

FINAL PITCH

Each group will make a pitch presentation of a maximum 3 minutes that presents their idea. The groups will give their pitch in front of a jury on Thursday. The jury will score the pitches and decide who has the best idea as to what to use residues.

The pitch must contain the following topics:

- **Solution:** What is your innovative solution
- **Technology:** What is the technology/idea that underlies your concept
- **Market:** What is the market and its size
- **Value Proposition:** How you create value for one or more of the participants of the whole proposed chain
- **Feasibility:** Why is the concept technically and economically feasible

The jury will judge every pitch on the following criteria:

- **Suitability to the Challenge:** Does the team present a concept related to the challenge's principle of biobased and/or circular economy?
- **Innovation degree:** is the concept innovative?
- **Market Potential:** Is there a clearly identified market opportunity?
- **Environmental Impact:** What is the environmental impact generated by the solution?
- **Feasibility:** How much effort is needed for the solution's implantation?
- **Presentation:** Was the presentation strong and convincing?

The top-rated group will be the winner of the competition!