

Delphi-Survey Questionnaire

- the Prioritization of Criteria -

1. General information *

1.1 Name

1.2 Job Position

1.3 Organization

1.4 Email

1.5 Types of organization

- ☐ Governmental, ministry Policy maker
- ☐ Industry/ Business sector
- ☐ Non-Profit Organizations (NPOs) or Non-Governmental Organization (NGOs)
- ☐ Academic or research Institute
- ☐ Financial Institution or Bank
- ☐ Others

To which area fits your expertise/profession?

(You can select more than one option)

- ☐ Energy policy
- ☐ Agricultural production
- ☐ Biomass management or biomass conversion
- ☐ Bioethanol or biofuel production
- ☐ Renewable energy development or energy management
- ☐ Technology development or project development
- ☐ Environmental impacts analysis
- ☐ Socio-economic impacts analysis
- ☐ Business analysis or investment
- ☐ Economic or financial analysis
- ☐ Bioeconomy development
- ☐ Others

4. Part I: Prioritization of the main criteria

Question: How should we prioritize the relevant aspects?

Main Criteria	Extremely		Very Strongly		Strongly		Moderately		Equally		Moderately		Strongly		Very strongly		Extremely	Main Criteria
Economic Feasibility	9 	8 	7 	6 	5 	4 	3 	2 	1 	2 	3 	4 	5 	6 	7 	8 	9 	Technical Feasibility
Social Impacts	9 	8 	7 	6 	5 	4 	3 	2 	1 	2 	3 	4 	5 	6 	7 	8 	9 	Technical Feasibility
Environmental Impacts	9 	8 	7 	6 	5 	4 	3 	2 	1 	2 	3 	4 	5 	6 	7 	8 	9 	Technical Feasibility
Social Impacts	9 	8 	7 	6 	5 	4 	3 	2 	1 	2 	3 	4 	5 	6 	7 	8 	9 	Economic Feasibility
Environmental Impacts	9 	8 	7 	6 	5 	4 	3 	2 	1 	2 	3 	4 	5 	6 	7 	8 	9 	Economic Feasibility
Environmental Impacts	9 	8 	7 	6 	5 	4 	3 	2 	1 	2 	3 	4 	5 	6 	7 	8 	9 	Social Impacts

5. Part II: Prioritization of the sub-criteria

Please rate the importance of criteria considering each dimension.

5.1 Technical aspect

Question: How do you evaluate the technical feasibility?

Main Criteria	Extremely		Very Strongly		Strongly		Moderately		Equally		Moderately		Strongly		Very strongly		Extremely	Main Criteria
Ethanol productivity	9 ☐	8 ☐	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☒	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	Biomass availability and collectability
Biomass logistics	9 ☐	8 ☐	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☒	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	Biomass availability and collectability
Biomass logistics	9 ☐	8 ☐	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☒	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	Ethanol productivity

5.2 Economic aspect

Question: How do you evaluate the sub-criteria for economic feasibility?

Main Criteria	Extremely		Very Strongly		Strongly		Moderately		Equally		Moderately		Strongly		Very strongly		Extremely	Main Criteria
Final price per liter of ethanol	9 ☐	8 ☐	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☒	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	Net Present Value
Added value of input materials	9 ☐	8 ☐	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☒	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	Net Present Value
Added value of input materials	9 ☐	8 ☐	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☒	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	Final price per liter of ethanol

5.3 Social impacts

Question: How do you evaluate social impacts?

Main Criteria	Extremely		Very Strongly		Strongly		Moderately		Equally		Moderately		Strongly		Very strongly		Extremely	Main Criteria
Food security	9 ☐	8 ☐	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☒	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	Job creation
Household income	9 ☐	8 ☐	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☒	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	Job creation
Household income	9 ☐	8 ☐	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☒	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	Food security

5.4 Environmental aspect

Question: How do you evaluate environmental effect?

Main Criteria	Extremely		Very Strongly		Strongly		Moderately		Equally		Moderately		Strongly		Very strongly		Extremely	Main Criteria
Greenhouse gas balance	9 ☐	8 ☐	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☒	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	Indirect Land Use Change (ILUC)
Net energy balance	9 ☐	8 ☐	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☒	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	Indirect Land Use Change (ILUC)
Net energy balance	9 ☐	8 ☐	7 ☐	6 ☐	5 ☐	4 ☐	3 ☐	2 ☐	1 ☒	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	Greenhouse gas balance

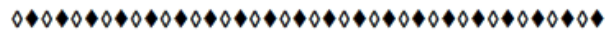
6 PART III : Suggestion for further criteria

In this step, the participants are able to, additionally, select further relevant criteria, if the above criteria are insufficient. Please select the additional important indicators

- ☐ Dependence on subsidy
- ☐ Distributed income
- ☐ Fertilizers or pesticides
- ☐ Water management and irrigation systems
- ☐ By-products
- ☐ Material balance
- ☐ Technology readiness level
- ☐ Air pollution level (e.g. PM 2.5, PM 10)
- ☐ Output wastes
- ☐ Land prices
- ☐ Job quality
- ☐ Forest areas

Other possible criteria

Please give us further comments or suggestions regarding the Delphi-Survey or the study.



Thank you for your precious time to complete our survey.