



LIQUID FUEL AND CHEMICAL INDUSTRY QUESTIONNAIRE

UNITED STATES INTERNATIONAL TRADE COMMISSION
ATTENTION: Industrial Biotechnology Project Team
Office of Industries, Room 511
500 E Street, SW, Washington, DC 20436
FAX: 202-205-2217

The U.S. International Trade Commission, or Commission, (www.usitc.gov) has been requested by the Senate Committee on Finance (SFC) to report on competitive conditions affecting industries that are developing and adopting new biotechnology processes and products. This questionnaire has been designed to collect information to fulfill this request. By completing this questionnaire, you will be providing valuable information to document the contribution of industrial biotechnology to the U.S. economy, and the conditions affecting U.S. companies and their ability to compete internationally. The Commission will report its findings to the SFC on July 2, 2008, and the SFC has indicated it intends to make this report available to the public. Questionnaire data used in the Commission's report will be aggregated and presented in such a manner that the individual operations or responses of any one organization cannot be identified.

**RESPONSE TO THIS QUESTIONNAIRE IS REQUIRED BY LAW.
READ ALL INSTRUCTIONS ON PAGES 1-8 TO DETERMINE WHETHER THIS
QUESTIONNAIRE APPLIES TO YOUR ORGANIZATION.
THE COMPLETED QUESTIONNAIRE MUST BE RETURNED TO THE
COMMISSION NO LATER THAN OCTOBER 31, 2007.**

The information called for in this questionnaire is for use by the Commission in connection with its investigation No. 332-481, *Industrial Biotechnology: Development and Adoption by the U.S. Chemical and Biofuel Industries*, notice of which was published in the *Federal Register* of December 1, 2006. The information is requested under the authority of section 332(g) of the Tariff Act of 1930 (19 U.S.C. § 1332 (g)). Completing the questionnaire is mandatory and failure to reply as directed can result in a subpoena or other order to compel the submission of records or information in your possession (19 U.S.C. § 1333(a)). Further information on this questionnaire can be obtained from the project leaders:

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Please complete this questionnaire for your organization as a whole. If this is not possible, or unreasonably burdensome, then individual business units or groups of business units within your organization can provide separate responses, but you must ensure that all of your organization's activities are reflected in questionnaire responses and that there is no double counting of such activities. If you have joint venture business units, these should in general provide their own responses, but contact the project leaders if you need further guidance.

Electronic Completion and Submission of this Questionnaire

The Commission encourages respondents to complete and submit this questionnaire electronically if possible. Gray boxes in the electronic version of this questionnaire indicate information entry areas. For an explanation of all completion and submission options, go to page 7.

ORGANIZATION INFORMATION

Organization name	_____		
Address	_____		
City	_____	State	_____ Zip code _____
Web site address	_____		
<p>Did your organization engage in any activities (production, pre-production, and/or research and development) related to liquid fuels or chemicals in establishments located in the United States at any time during 2004-2007(YTD)? Please review the information in the box on the top of page 3 before answering this question. Check one of the following boxes and follow the instructions.</p> <p><input type="checkbox"/> NO Sign the certificate below, and promptly return this page and the cover page to the Commission at the address or fax number on the cover page. See page 7 for other submission options.</p> <p><input type="checkbox"/> YES Read the instructions, definitions, and notes carefully, complete all parts of the questionnaire that apply to you, sign the certification, and return the entire questionnaire to the Commission at the address or fax number on the cover page, no later than OCTOBER 31, 2007. See page 7 for other submission options.</p>			

CERTIFICATION

The undersigned certifies that the information herein supplied in response to this questionnaire is complete and correct to the best of his/her knowledge and belief and understands that the information submitted is subject to audit and verification by the Commission. Section 332(g) provides that the Commission may not release information which the Commission considers to be confidential business information, unless the party submitting the confidential business information had notice, at the time of submission, that such information would be released by the Commission, or such party subsequently consents to the release of the information. The Senate Committee on Finance, the requestor of this investigation, has requested that the Commission provide a nonconfidential (public) report.

The undersigned acknowledges that information submitted in this questionnaire response and throughout this investigation may be used by the Commission, its employees, and contract personnel who are acting in the capacity of Commission employees, for developing or maintaining the records of this investigation or related proceedings for which this information is submitted, or in internal audits and in investigation relating to the programs and operations of the Commission pursuant to 5 U.S.C. Appendix 3. The undersigned understands that all contract personnel will sign nondisclosure agreements.

Name and title of Authorized Official	Date (MM/DD/YY)
Signature of Authorized Official*	Telephone (xxx-xxx-xxxx) Fax (xxx-xxx-xxxx)

*If submitting an electronic version of this certificate to the Commission, check this box in lieu of a written signature to indicate that the authorized official listed has certified the information provided.

WHO MUST COMPLETE THIS QUESTIONANIRE

Your organization must complete this questionnaire if either item A or item B below applied at any time during 2004-2007.

A. Liquid fuels: Your organization operated establishments located in the United States that engaged in production or pre-production of any liquid fuel (gasoline, jet fuel, ethanol, diesel, etc., regardless of process used or raw material inputs), or any research and development related to liquid fuels.

B. Chemicals: Your organization operated establishments located in the United States that engaged in production or pre-production of any chemicals (including enzymes, micro-organisms, commodity chemicals, chemical intermediates, specialty chemicals, polymers, pharmaceuticals, food additives, flavors/fragrances, etc. made by the transformation of organic or inorganic raw materials), or any research and development related to chemicals.

If either item A or item B applies, check the “Yes” box on page 2 and follow the instructions provided there.

If neither A nor B applies, check the “No” box on page 2 and follow the instructions provided there. You should also check “No” if your organization has solely food, feed, distribution, wholesale, retail, blending or mechanical processing that does not involve chemical reactions, or corporate governance activities in the United States.

INSTRUCTIONS

This questionnaire is intended for organizations with production, pre-production, or R&D activities related to liquid fuels and chemicals of all types in the United States, regardless of whether they are involved in any industrial biotechnology activities. The Commission requires information from all such organizations so that it can put the use of industrial biotechnology in the context of the entire liquid fuel and chemical industries.

This questionnaire is composed of 11 sections. Each section has a group of related questions. Not all sections apply to every organization. For example, section II must be completed by liquid fuel producers only; section III by chemical producers only. However, if your organization produces both liquid fuels and chemicals, you must complete both sections. Please also note that not all questions in a section apply to every organization. Unless otherwise instructed, leave these question response areas blank.

All information submitted on this questionnaire will be treated as confidential business information. In the Commission’s report, information will be aggregated so that it will not reveal the operations of your organization. Further, this questionnaire does not request information that relates to sensitive issues such as specific business plans or trade secrets.

Keep a copy of your submission for your records.

DEFINITIONS

1. **Industrial biotechnology:** For the purposes of this questionnaire, industrial biotechnology refers to either of these overlapping definitions:

The manufacture of liquid fuels and chemical products using enzymes, micro-organisms, fermentation, or biocatalysis at any stage of production, regardless of the type of raw materials used. In this case, the raw materials can be biomass, fossil fuel-based, or inorganic substances.

OR

The manufacture of liquid fuels and chemical products from renewable resources, regardless of the type of processing technology used.

Industrial biotechnology DOES NOT include:

Any activities related to DNA manipulation, sequencing or synthesis of proteins and other molecules, cell and tissue culturing, or nanobiotechnology. However, this highlights an important distinction for the purposes of this questionnaire: the development of pharmaceuticals using genomics and genetic engineering is not industrial biotechnology but the synthesis of pharmaceuticals using industrial biotechnology is included, even if used in combination with conventional chemical processes.

Any food or feed products, such as beverages for human consumption. However, food flavorings and ingredients produced using industrial biotechnology are included.

2. **Conventional technology:** For the purposes of this questionnaire, conventional technology refers to the following:
The manufacture of liquid fuel and chemical products using conventional raw materials (such as fossil fuel-based and inorganic substances), and conventional chemical synthesis processes (i.e., **not** using enzymes, micro-organisms, fermentation, or biocatalysis).
3. **Bio-based products:** Liquid fuels and chemicals (other than food or feed) made using industrial biotechnology as described above. More specific terms are also used in this questionnaire, such as bio-based chemicals, bio-based polymers, biofuels, and biodiesel. The term ethanol is only used to refer to bio-ethanol.
4. **Biocatalysis:** The use of biocatalysts such as enzymes and micro-organisms to initiate or modify the rate of a chemical reaction. This is also referred to as bioprocessing.
5. **Conventional products:** Liquid fuels and chemicals made using conventional technology as defined above.
6. **Establishment:** A single physical location where liquid fuels or chemicals are produced, or where R&D activities are performed in relation to liquid fuels or chemicals.
7. **Agricultural feedstocks:** Crops (such as corn, wheat, sugarcane, and soybeans), crop wastes (such as corn stover), switchgrass, and wheatgrass.

8. **Research and development (R&D):** The systematic pursuit of new knowledge of a general nature, the use of knowledge to meet a specific need, or the application of knowledge to the production or improvement of a product, service, process, or method. R&D expenses are the costs for these activities, including wages and salaries, materials consumed, utilities, insurance, property taxes, and overhead. Pilot and demonstration plant activities are considered R&D. Routine product testing and quality control, and marketing activities are not included in R&D. Capital expenditures for R&D facilities are not included in this category.
9. **Investment:** Capital expenditures for plant construction, improvements to existing plant and equipment, and purchases of new or existing plant, property, machinery and equipment. This includes direct expenditures by your organization, and expenditures by other organizations (e.g., construction firms) done for your organization. Capital expenditures for R&D-related property, plant, and equipment are included in this category. Investment also includes expenditures for acquired companies. Expenses for routine maintenance and repair are not included. Investments in financial instruments are also not included.
10. **Total net sales:** Total sales, net of returns, discounts, and allowances. Includes internal consumption and transfers to related firms, as applicable, at fair market value.
11. **Operating income:** Total net sales minus cost of goods sold (COGS) and selling, general, and administrative expenses (SG&A).
12. **Biomass:** Organic material from plants and animals. This includes agricultural feedstocks as defined above and other materials such as forestry biomass, pulp and paper mill residues, and municipal wastes.
13. **Chemicals:**
 - A. **Enzymes:** A protein that catalyzes (speeds up) a chemical reaction. For the purposes of this questionnaire, the term enzyme is only intended to refer to an enzyme used in an industrial process to produce a liquid biofuel or bio-based chemical. As such, for example, enzymes used solely for medical treatments should not be considered in responses to this questionnaire.
 - B. **Micro-organisms:** Very small life forms, often unicellular, that, among other things, can decompose other substances. Examples include bacteria, yeasts, and fungi. For the purposes of this questionnaire, the term micro-organism is only intended to refer to living cells used in an industrial process to produce a liquid biofuel or bio-based chemical. Micro-organisms used for other purposes (for example those used in medical applications) should not be considered in responses to this questionnaire.
 - C. **Commodity chemicals:** Large volume, low unit value chemicals with little product differentiation. Examples include acrylamide, cyclohexane, styrene, ethylbenzene, cumene, phenol, phthalic anhydride, terephthalic acid, and aniline.
 - D. **Specialty chemicals:** Small volume, typically high unit value chemicals with a high degree of differentiation. Examples of specialty chemicals include adhesives and sealants, catalysts, coatings, electronic chemicals, institutional and industrial cleaners, plastic additives, and water management chemicals.

- E. **Chemical intermediate:** An organic compound that is considered a "chemical stepping stone" between an upstream chemical and the final product. Examples of chemical intermediates include aniline and β -naphthol.
- F. **Polymers:** A large molecule built by repeatedly bonding together one or more smaller molecules called monomers. Plastics are a common type of polymer.
- G. **Pharmaceutical:** In general, "a substance intended for use in the diagnosis, cure, mitigation, treatment or prevention of disease, or to affect the structure or function of the body." Examples include cephalexin, Vitamin B₂, and Lipitor® (a statin).
- H. **Flavors:** Any substance or mixture of substances that contributes a positive taste to a food product, including natural products (e.g., vanillin, cacao, and fruit extracts) and various synthetic products.
- I. **Fragrance:** An aromatic compound derived from natural oils, natural isolates, or synthetics. Examples include essential oils, extracts, colognes, and perfumes.
- J. **Food additive/ingredient:** Ancillary items associated with foods, often with little or no nutritive value (e.g., sugar, baking soda, salt, vanilla, yeast, flavorings, spices, preservatives, colorants, acidulants, antioxidants, emulsifiers, flavor enhancers, leavening agents, stabilizers and thickeners, artificial sweeteners, and fat replacers).

Other definitions are shown in certain specific sections of this questionnaire.

NOTES

1. Certain questions ask for information on **ALL** the activities of your organization in the United States, in the following two categories:

Liquid fuels: Production of any liquid fuel (gasoline, jet fuel, ethanol, diesel, etc.), regardless of process used or raw material inputs, and any R&D related to liquid fuels.

Chemicals: Production of any chemicals (commodity, specialty, etc.) by the transformation of organic or inorganic raw materials, and any R&D related to chemical products.

2. Certain questions ask for information on just your organization's **industrial biotechnology** activities (a **SUBSET** of all the activities in note 1 above) in the United States, in the following two categories:

Liquid biofuels: Production of any liquid fuel using industrial biotechnology at any stage of production, and any R&D related to this. Examples are ethanol (whether derived from corn, sugar, or lignocellulose); biodiesel derived from natural oils from plants or recycled sources; and biobutanol.

Bio-based chemicals: Production of any chemical using industrial biotechnology at any stage of production, and any R&D related to bio-based chemicals. Examples include enzymes and micro-organisms made for bio-based liquid fuel and chemical products; bio-based commodity chemicals, chemical intermediates, and specialty chemicals; bio-based pharmaceuticals, food additives, flavors/fragrances; etc.

Please note that many questions ask for separate information on all of your organization's activities, as well as your industrial biotechnology activities. If your records do not separate information for these activities, then you will have to make allocations. For example, your organization may have employees that conduct both types of activities—data for these employees are to be allocated between these operations.

This questionnaire was reviewed by industry participants to ensure that data requests are sufficient, meaningful, and as limited as possible. Public reporting burden for this questionnaire is estimated to average 40 hours per response. Send comments regarding the accuracy of this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the address or fax number on the cover page.

IF THE INFORMATION REQUESTED IS NOT READILY AVAILABLE FROM YOUR RECORDS, REASONABLE ESTIMATES ARE ACCEPTABLE.

Use space provided in section XI at the end of the questionnaire if space provided for each question is not sufficient. Also include any other information you feel is relevant to the Commission's investigation in this section.

WRITTEN COMPLETION METHOD AND SUBMISSION INSTRUCTIONS

Using the provided CD, copy the questionnaire file to your computer system. Open the file in Microsoft Word and print the document. Contact the project team if this file is incompatible with your organization's version of Word. Type or write in the requested information for each question that applies to your organization. Submit by express mail service to the Commission using the address on the top of page 1.

ELECTRONIC COMPLETION METHOD AND SUBMISSION INSTRUCTIONS

Please consider completing this questionnaire electronically in Microsoft Word, following the instructions below:

Using the provided CD, copy the questionnaire file to your computer system. This file can also be downloaded from the Commission's Web site at:

www.usitc.gov/ind_econ_ana/research_ana/biotech.htm

Open the file in Microsoft Word for Windows. Contact the project team if this file is incompatible with your organization's version of Word.

Entry areas are indicated as gray boxes in this electronic version. These boxes turn black as they are selected. Enter the requested information for each question that applies to your organization. Use Tab key to advance from box to box. Use Shift and Tab keys, simultaneously, to go back to a previous box. Click on any box to go immediately to that box. Use scroll keys to navigate through areas with no entry boxes.

Other than in these boxes, you will not be able to add information to or change the questionnaire. Boxes will expand to accommodate responses.

Certain boxes require numeric information. If text is entered, it will be changed to a default numeric value after tabbing to next entry box.

After you have completed the questionnaire electronically in Word, you have three submission options:

Print the completed questionnaire and send by express mail service to the address listed on the top of page 1.

Copy the electronic version onto removable computer media such as a CD and send by express mail service to the address listed on the top of page 1.

Attach the electronic version to an e-mail message and send to one of the project leaders listed on page 1. Please note that submitting the questionnaire response by e-mail will subject your organization's confidential business information (CBI) to transmission over an unsecured environment and to possible disclosure to third parties. Any risk of disclosure of CBI during transmission is assumed by your organization and not the Commission. However, once the e-mail is received, the questionnaire response will be stored in the Commission's secured environment, and will receive the safeguards described in the certification on page 2.

If you have any security concerns about submitting your completed questionnaire by e-mail, please contact one of the project leaders listed on page 1.

SECTION I. GENERAL QUESTIONS

I.1. Who is the person at your organization who should be contacted regarding this questionnaire?

Name	Title
Telephone (xxx-xxx-xxxx)	E-mail address

I.2. Report below the actual number of hours required and the cost to your organization or establishment(s) of completing this questionnaire, including all preparatory activities.

_____ Hours _____ Dollars

I.3. Is your organization owned, in whole or in part, by another organization(s)?

- No
- Yes

If yes, provide the following for the three leading owners, based on equity share:

Organization name	Address	Equity share (%)

I.4. What best describes your current organization type? Check only one.

<input type="checkbox"/>	Farmers' cooperative				
<input type="checkbox"/>	Joint venture of farmers' cooperative and a private company				
<input type="checkbox"/>	Publicly traded company (or division thereof)*				
	If above checked, provide:				
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">Stock symbol</td> <td style="width:30%;"></td> <td style="width:30%;">Stock exchange</td> <td style="width:10%;"></td> </tr> </table>	Stock symbol		Stock exchange	
Stock symbol		Stock exchange			
<input type="checkbox"/>	Privately-held company (or division thereof)*				
<input type="checkbox"/>	Joint venture of private companies*				
<input type="checkbox"/>	Joint venture of government organization and private company*				
<input type="checkbox"/>	Other (specify):				
* Do not include farmers' cooperatives or joint ventures with farmers' cooperatives.					

I.5. Please indicate the year in which each activity listed below occurred. If the item has not occurred or is not applicable, leave year blank.

Item	Year (use 4-digits)
Organization formed (e.g., year of incorporation, partnership agreement, joint venture agreement)	
Commenced R&D involving liquid biofuels	
Commenced commercial production of liquid biofuels	
Commenced R&D involving bio-based chemicals	
Commenced commercial production of bio-based chemicals	

I.6. Please provide the following information about your organization’s establishments that were active during the indicated calendar year. Indicate the number of establishments with any production or R&D activities and **exclude** establishments that are under construction or have solely distribution, wholesale, retail, or corporate governance activities. Liquid fuel organizations should exclude establishments that solely blend fuels. If value is zero, put zero in cell; if value unknown, leave cell blank. For 2007, indicate year-to-date active establishments. Underlined term defined on page 4.

#	Production and R&D establishments	2004	2005	2006	2007
	Number				
1	All liquid fuels and/or chemicals <u>establishments</u> , both R&D and production				
	Liquid biofuels activities (do not double count for items 2 and 3 below):				
2	R&D primarily				
3	Production primarily				
	Bio-based chemical activities (do not double count for items 4 and 5 below):				
4	R&D primarily				
5	Production primarily				
	<i>Use lines below if unable to separate liquid biofuels and bio-based chemicals production and R&D establishments.</i>				
	Both liquid biofuel and bio-based chemical activities (do not double count for items 6 and 7 below):				
6	R&D primarily				
7	Production primarily				

I.7. Please indicate the states where your active establishments with liquid biofuel and bio-based chemical activities are located, based on 2007 year-to-date. List the top five states ranked by descending number of establishments.

Rank	State (Use two letter code)	Number of establishments in 2007
1		
2		
3		
4		
5		

I.8. Please indicate the importance of industrial biotechnology activities to your organization’s business. Check one box.

Crucial	Important	Minor importance	Not important
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I.9. Please indicate the North American Industry Classification System (NAICS) 3-digit classification code(s) for your establishments. A list and definition of NAICS codes can be found at www.census.gov/epcd/naics02/naicod02.htm. If more than one code applies, list the top three in descending order by number of establishments per code.

Rank	NAICS code (3-digit)
1	
2	
3	

I.10. What industrial biotechnology and related activities does your organization currently perform? Check all that apply, except as noted.

<input type="checkbox"/>	None (no other boxes should be checked if this box is checked)
<input type="checkbox"/>	Evaluation of whether to initiate industrial biotechnology activities (no other boxes should be checked if this box is checked)
<input type="checkbox"/>	Research and/or development of enzymes or micro-organisms
<input type="checkbox"/>	Research and/or development of agricultural feedstocks
<input type="checkbox"/>	Other industrial biotechnology process or product research and/or development
<input type="checkbox"/>	Production of liquid biofuels
<input type="checkbox"/>	Production of bio-based chemicals
<input type="checkbox"/>	Downstream production activities (for example: plastic fabrication)
<input type="checkbox"/>	Other (specify) _____

I.11. Unless “None” is checked above, please indicate the significance of your organization’s reasons for evaluating or pursuing the development or adoption of bio-based products.

Reason	Check one box per reason to indicate level of significance				
	Not significant	←	→	Very significant	
Product diversification	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Improve competitiveness	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Improve productivity	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Improve profitability	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Sales growth potential	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Market share potential	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Potential to develop novel products	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Related to current competencies	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Reduce emissions of greenhouse gases	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Lessen other environmental effects of in-house production	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Implement sustainable production	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Take advantage of government mandatory use requirements	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Other (specify below)	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Specify other reason: _____					

I.12. Is your organization an industrial biotechnology spin-off that was created in or after 2000? A spin-off is a new firm created to transfer and commercialize inventions and technology developed in universities, firms, or government laboratories.

<input type="checkbox"/>	Not a spin-off
<input type="checkbox"/>	Spin-off from a university
<input type="checkbox"/>	Spin-off from another firm
<input type="checkbox"/>	Spin-off from a government laboratory
<input type="checkbox"/>	Other spin-off (specify):

I.13. Is your organization currently a stand-alone R&D company? (These are typically entities that primarily perform narrowly-focused industrial biotechnology R&D activities only, although they may also be pursuing commercialization activities to a limited degree.)

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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I.14. What is your organization's main line(s) of business? Check all that apply.

<input type="checkbox"/>	Enzymes or micro-organisms
<input type="checkbox"/>	Conventional liquid fuels (e.g., gasoline, diesel fuel)
<input type="checkbox"/>	Liquid biofuels (e.g., ethanol, biodiesel)
<input type="checkbox"/>	Agricultural crop grower
<input type="checkbox"/>	Chemicals
<input type="checkbox"/>	Bio-based chemicals
<input type="checkbox"/>	Pharmaceuticals
<input type="checkbox"/>	Other (specify):

I.15. Regarding your organization's goals and strategies, please respond to the following questions.

A. Does your organization have written goals and strategies to achieve them?

NO Proceed to section II.
 YES Proceed to B below.

B. Do these goals and strategies specifically reference biotechnology, industrial biotechnology, or renewable resources?

NO Proceed to section II.
 YES Proceed to C below.

C. In what year did your organization's goals and strategies first specifically reference biotechnology, industrial biotechnology, or renewable resources?

Time frame	Check one box
Before 2004	<input type="checkbox"/>
2004	<input type="checkbox"/>
2005	<input type="checkbox"/>
2006	<input type="checkbox"/>
2007	<input type="checkbox"/>

SECTION II. LIQUID FUEL INDUSTRY

II.1. During 2004-2007, did your organization produce any liquid fuels (as described in notes 1 and 2 on page 5) in the United States?

- NO. Proceed to section III.
- YES. Continue with this section below.

II.2 Please report your total net sales of **all** liquid fuels produced in your U.S. establishments (whether for domestic or export markets), and the associated operating income. Do not include re-sales of purchased liquid fuels. Use reasonable estimates to convert fiscal year data to calendar year data and provide a reasonable estimate for full year 2007 based on your operations to date. If value is zero, put zero in cell; if value unknown, leave cell blank. Underlined term defined on page 5.

#	Item	2004	2005	2006	2007 est.
		<i>1,000 dollars</i>			
1	Organization's <u>total net sales</u> of liquid fuels made in the United States				
2	Organization's operating income				

II.3 Please provide the following data on your firm's liquid biofuels production for the last three calendar years and a reasonable estimate for full year 2007 based on your operations to date. Include commercial scale production that is shipped to internal or external users, valued on an f.o.b. basis at the plant; do not include pilot or demonstration plant production. If value is zero, put zero in cell; if value unknown, leave cell blank.

#	Item	2004	2005	2006	2007 est.
		<i>Show quantity in 1,000 gallons, value in 1,000 dollars</i>			
	Biodiesel from recycled material:				
1	Quantity				
2	Value				
	Biodiesel from non-recycled (virgin) feedstocks:				
3	Quantity				
4	Value				
	Starch-based ethanol from corn:				
5	Quantity				
6	Value				
	Starch-based ethanol from other grains:				
7	Quantity				
8	Value				
	Cellulosic ethanol:				
9	Quantity				
10	Value				
	Biobutanol:				
11	Quantity				
12	Value				
	Other liquid biofuels:				
13	Quantity				
14	Value				
	Specify other biofuels:				

II.4. Please indicate the number of plants that are presently under construction by or for your organization in the United States (ground has been broken), the expected year of start-up, and the expected capacity for each type of plant below. Include expansion of existing production facilities. If plant will be producing more than one type of liquid biofuel, include in just one category below based on the primary liquid biofuel. If value is zero, put zero in cell; if value unknown, leave cell blank.

#	Type of liquid biofuel	Number of plants under construction	Expected year of start-up*	Capacity (1,000 gallons)
1	Biodiesel from recycled material			
2	Biodiesel from non-recycled (virgin) feedstocks			
3	Starch-based ethanol from corn			
4	Starch-based ethanol from other grains			
5	Cellulosic ethanol			
6	Biobutanol			
7	Other liquid biofuels			
Specify other biofuels:				
*Use 4 digits for year. If more than one plant, separate years by commas.				

II.5. Please report your total net sales of liquid biofuels produced in your U.S. establishments (including domestic and foreign sales), and the associated operating income. Do not include re-sales of purchased liquid biofuels. Use reasonable estimates to convert fiscal year data to calendar year data and provide a reasonable estimate for full year 2007 based on your operations to date. If value is zero, put zero in cell; if value unknown, leave cell blank. Underlined term defined on page 5.

#	Item	2004	2005	2006	2007 est.
<i>1,000 dollars</i>					
<u>Total net sales</u> of liquid biofuels made in the United States:					
1	Sold in United States market				
2	Exported to foreign markets				
3	Liquid biofuel operating income				
Note: Use 2007 year-to-date data to project for full-year 2007.					

II.6. For your organization's exports of liquid biofuels reported in the previous question, please list the leading five foreign markets during 2004-2007 in descending order by value of exports. Leave blank if you have no exports.

Top markets	Country
1	
2	
3	
4	
5	

II.7. Please report the value of your organization's imports of agricultural feedstocks and liquid biofuels. Include any products imported for you by agents. Use reasonable estimates to convert fiscal year data to calendar year data and provide a reasonable estimate for full year 2007 based on imports to date. If value is zero, put zero in cell; if value unknown, leave cell blank. Underlined term defined on page 4.

#	Item	2004	2005	2006	2007 est.
		1,000 dollars			
1	<u>Agricultural feedstocks</u> used for liquid biofuel production				
2	Biodiesel				
3	Starch-based ethanol from corn				
4	Other ethanol				
5	Other liquid biofuels				
	Specify other biofuels:				
Note: Use 2007 year-to-date data to project for full-year 2007.					

II.8. For your organization's imports of agricultural feedstocks and liquid biofuels reported in the previous question, please list the leading five foreign sources during 2004-2007 in descending order by value of imports. Leave blank if you have no imports.

Top sources	Country
1	
2	
3	
4	
5	

II.9. Please report your organization's total net sales of products *other than liquid biofuels generated at your U.S. liquid biofuels production establishments*. Include *only byproducts* that offset operating costs and/or augment sales revenues (such as power, glycerin, chemicals,* or dry distiller's grain). Include internal sales or transfers of products at fair market value. Use reasonable estimates to convert fiscal year data to calendar year data and provide a reasonable estimate for full year 2007 based on your operations to date. If value is zero, put zero in cell; if value unknown, leave cell blank. Underlined term defined on page 5.

*Do not include bio-based chemicals that are primary products or co-products. These should be reported in the response to question III.3A.

#	Item	2004	2005	2006	2007 est.
		1,000 dollars			
1	<u>Total net sales</u> of non-liquid biofuel byproducts, sold in United States or exported				
Note: Use reasonable estimates to convert fiscal year data to calendar year data and provide a reasonable estimate for full year 2007 based on operations to-date.					

II.10. For the product net sales reported in the previous question, please indicate the top five most important byproducts by net sales value below. Specific examples include power, glycerin, chemicals, and dry distiller’s grain. Do not include downstream products made from these products. If none, leave cells blank.

Rank by net sales value	Product
1	
2	
3	
4	
5	
Note: Consider all byproducts, even if consumed internally.	

II.11. Please provide the number of employees for your organization’s liquid fuel and liquid biofuel production establishments located in the United States. Include production and related workers, managers, supervisors, technicians, office workers, etc. related to production activity at these establishments. Do not include employees engaged in these establishments’ upstream production activities. Full-time equivalent (FTE) reflects the total number of regular straight-time hours (i.e., not including overtime or holiday hours) worked by employees divided by the number of compensable hours applicable to each calendar year. Annual leave, sick leave, and compensatory time off and other approved leave categories are considered to be “hours worked” for purposes of defining FTE employment. If value is zero, put zero in cell; if value unknown, leave cell blank.

#	Item	2004	2005	2006	2007 est.
	All liquid fuel production:				
1	Employees (<i>full-time equivalents</i>)				
2	Wages and salaries, including fringe benefits, for these employees (<i>1,000 dollars</i>)				
	Liquid biofuels production:				
3	Employees (<i>full-time equivalents</i>)				
4	Wages and salaries, including fringe benefits, for these employees (<i>1,000 dollars</i>)				
Note: Use reasonable estimates to convert fiscal year data to calendar year data and provide a reasonable estimate for full year 2007 based on operations to date.					

SECTION III. CHEMICAL INDUSTRY

III.1. During 2004-2007, did your organization have any production of chemicals (as described in notes 1 and 2 on page 5), including enzymes and micro-organisms used in the production of industrial biotechnology products, in the United States? (Liquid fuel production should not be considered here as it is reported in section II).

- NO. Proceed to section IV.
 YES. Continue with this section below.

III.2 Please report your total net sales of **all** chemicals produced in your U.S. establishments (whether for domestic or export markets), and the associated operating income. Do not include re-sales of purchased chemicals. Use reasonable estimates to convert fiscal year data to calendar year data and provide a reasonable estimate for full year 2007 based on your operations to date. If value is zero, put zero in cell; if value unknown, leave cell blank. Underlined term defined on page 5.

#	Item	2004	2005	2006	2007 est.
		1,000 dollars			
1	Organization's <u>total net sales</u> of chemicals made in the United States				
2	Organization's operating income				

III.3A. Please provide the following data on your firm's production of the indicated bio-based chemical items for the last three calendar years and a reasonable estimate for full year 2007 based on your operations to date. Include commercial scale production that is shipped to internal or external users, valued on an f.o.b. basis at the plant; do not include pilot or demonstration plant production. If value is zero, put zero in cell; if value unknown, leave cell blank. Underlined terms defined on pages 5-6.

#	Item	2004	2005	2006	2007 est.
		Show quantity in 1,000 pounds, value in 1,000 dollars			
	A. <u>Enzymes</u> and <u>micro-organisms</u> used to make industrial biotechnology products:				
1	Quantity				
2	Value				
	B. <u>Commodity chemicals</u> produced using fermentation, enzymatic, or microbial processes:				
3	Quantity				
4	Value				
	C. <u>Commodity chemicals</u> produced from renewable resources, not including products in item B:				
5	Quantity				
6	Value				
	D. <u>Polymers</u> produced using fermentation, enzymatic, or microbial processes:				
7	Quantity				
8	Value				
	E. <u>Polymers</u> produced using renewable resources, not including products in item D:				
9	Quantity				
10	Value				
	F. <u>Specialty chemicals</u> produced using fermentation, enzymatic, or microbial processes:				
11	Quantity				
12	Value				

III.3A. *Continued*

#	Item	2004	2005	2006	2007 est.
Show quantity in 1,000 pounds, value in 1,000 dollars					
G. <u>Specialty chemicals</u> produced using renewable resources, not including products in item F:					
13	Quantity				
14	Value				
H. <u>Chemical intermediates</u> produced using fermentation, enzymatic, or microbial processes:					
15	Quantity				
16	Value				
I. <u>Chemical intermediates</u> produced using renewable resources, not including products in item H:					
17	Quantity				
18	Value				
J. <u>Pharmaceuticals</u> produced using fermentation, enzymatic, or microbial processes:					
19	Quantity				
20	Value				
K. <u>Pharmaceuticals</u> produced using renewable resources, not including products in item J:					
21	Quantity				
22	Value				
L. <u>Food additives/ingredients</u> produced using fermentation, enzymatic, or microbial processes:					
23	Quantity				
24	Value				
M. <u>Food additives/ingredients</u> produced using renewable resources, not including products in item L:					
25	Quantity				
26	Value				
N. <u>Flavors and fragrances</u> produced using fermentation, enzymatic, or microbial processes:					
27	Quantity				
28	Value				
O. <u>Flavors and fragrances</u> produced using renewable resources, not including products in item N:					
29	Quantity				
30	Value				
P. <u>Other chemicals</u> produced using fermentation, enzymatic, or microbial processes:					
31	Quantity				
32	Value				
Specify other chemical(s) included in item P:					
Q. <u>Other chemicals</u> produced using renewable resources, not including products in item P:					
33	Quantity				
34	Value				
Specify other chemical(s) included in item Q:					

III.3B. For the production shown in the previous question, list the top five specific bio-based chemicals (e.g., poly-lactic acid) that your organization produced during 2004-2007, ranked by value. If none, leave blank.

Rank	Product
1	
2	
3	
4	
5	

III.4. Please indicate the number of plants that are presently under construction by or for your organization in the United States (ground has been broken), the expected year of start-up, and the expected capacity for each type of plant below. If plant will be producing more than one type of bio-based chemical, include in just one category below based on the primary liquid bio-based chemical. Include expansion of existing production facilities. If value is zero, put zero in cell; if value unknown, leave cell blank. Underlined terms defined on pages 5-6.

#	Type of bio-based chemical	Number of plants under construction	Expected year(s) of start-up*	Capacity (1,000 pounds)
1	<u>Enzymes or micro-organisms</u> for industrial biotechnology products			
2	Bio-based <u>commodity chemicals</u>			
3	Bio-based <u>polymers</u>			
4	Bio-based <u>specialty chemicals</u>			
5	Bio-based <u>chemical intermediates</u>			
6	<u>Pharmaceuticals</u> made using industrial biotechnology			
7	<u>Food additives/ingredients</u> made using industrial biotechnology			
8	<u>Flavors and fragrances</u> made using industrial biotechnology			
9	Other bio-based chemicals			
Specify other bio-based chemical(s):				
*Use 4 digits for year. If more than one plant, separate years by commas.				

III.5. Please report your total net sales of bio-based chemicals produced in your U.S. establishments (include domestic and foreign sales), and the associated operating income. Do not include re-sales of purchased bio-based chemicals. Use reasonable estimates to convert fiscal year data to calendar year data and provide a reasonable estimate for full year 2007 based on your operations to date. If value is zero, put zero in cell; if value unknown, leave cell blank. Underlined term defined on page 5.

#	Item	2004	2005	2006	2007 est.
<i>1,000 dollars</i>					
<u>Total net sales</u> of bio-based chemical products made in the United States:					
1	Sold in United States market				
2	Exported to foreign markets				
3	Bio-based chemical operating income				
Note: Use 2007 year-to-date data to project for full-year 2007.					

III.6. For your organization's exports of bio-based chemicals reported in the previous question, please list the leading five foreign markets during 2004-2007 in descending order by value of exports. Leave blank if you have no exports.

Top markets	Indicate country
1	
2	
3	
4	
5	

III.7. Please report the value of your organization's imports of agricultural feedstocks and bio-based chemicals. Include any products imported for you by agents. Use reasonable estimates to convert fiscal year data to calendar year data and provide a reasonable estimate for full year 2007 based on imports to date. If value is zero, put zero in cell; if value unknown, leave cell blank. Underlined terms defined on pages 5-6.

#	Item	2004	2005	2006	2007 est.
1,000 dollars					
1	<u>Agricultural feedstocks for bio-based chemical production</u>				
2	<u>Enzymes/micro-organisms for industrial biotechnology products</u>				
3	<u>Bio-based commodity chemicals</u>				
4	<u>Bio-based polymers</u>				
5	<u>Bio-based specialty chemicals</u>				
6	<u>Bio-based chemical intermediates</u>				
7	<u>Pharmaceuticals made using industrial biotechnology</u>				
8	<u>Food additives/ingredients made using industrial biotechnology</u>				
9	<u>Flavors and fragrances made using industrial biotechnology</u>				
10	<u>Other bio-based chemicals</u>				
	Specify other bio-based chemicals:				
Note: Use 2007 year-to-date data to project for full-year 2007.					

III.8. For your organization's imports of agricultural feedstocks and bio-based chemicals reported in the previous question, please list the leading five foreign sources during 2004-2007 in descending order by value of imports. Leave blank if you have no imports.

Top sources	Country
1	
2	
3	
4	
5	

III.9. Please report your organization's total net sales of products *other than bio-based chemical generated at your U.S. bio-based chemical production establishments*. Include only *byproducts* that offset operating costs (such as power, biofuels*) and/or augment sales revenues. Include internal sales or transfers of products at fair market value. Use reasonable estimates to convert fiscal year data to calendar year data and provide a reasonable estimate for full year 2007 based on your operations to date. If value is zero, put zero in cell; if value unknown, leave cell blank. Underlined term defined on page 5.

*Do not include liquid biofuels that are primary products or co-products. These should be reported in the response to question II.3.

#	Item	2004	2005	2006	2007 est.
1,000 dollars					
1	<u>Total net sales of non-bio-based chemical byproducts, sold in the United States or exported</u>				
Note: Use 2007 year-to-date data to project for full-year 2007.					

III.10. For the product net sales reported in the previous question, please indicate the top five most important byproducts by net sales value below. Do not include downstream products made from these products. If none, leave cells blank.

Rank by net sales value	Product
1	
2	
3	
4	
5	
Note: Consider all byproducts, even if internally consumed.	

III.11. Please provide the number of employees for your organization’s chemical and bio-based chemical production establishments located in the United States. Include production and related workers, managers, supervisors, technicians, office workers, etc. related to production activity at these establishments. Do not include employees engaged in these establishments’ upstream production activities. Full-time equivalent (FTE) reflects the total number of regular straight-time hours (i.e., not including overtime or holiday hours) worked by employees divided by the number of compensable hours applicable to each calendar year. Annual leave, sick leave, and compensatory time off and other approved leave categories are considered to be “hours worked” for purposes of defining FTE employment. If value is zero, put zero in cell; if value unknown, leave cell blank.

#	Item	2004	2005	2006	2007 est.
All chemical production:					
1	Employees (<i>full-time equivalents</i>)				
2	Wages and salaries, including fringe benefits, for these employees (<i>1,000 dollars</i>)				
 					
Bio-based chemicals production:					
3	Employees (<i>full-time equivalents</i>)				
4	Wages and salaries, including fringe benefits, for these employees (<i>1,000 dollars</i>)				
Note: Use reasonable estimates to convert fiscal year data to calendar year data and provide a reasonable estimate for full year 2007 based on operations to date.					

SECTION IV. RESEARCH AND DEVELOPMENT (R&D)

R&D is the systematic pursuit of new knowledge of a general nature, the use of knowledge to meet a specific need, or the application of knowledge to the production or improvement of a product, service, process, or method. R&D expenses are the costs for these activities, including wages and salaries, materials consumed, utilities, insurance, property taxes, and overhead. Pilot and demonstration plant activities are considered R&D. Routine product testing and quality control, and marketing activities are not included in R&D. Capital expenditures for R&D facilities are not included in this category.

IV.1. Please provide the following information about your organization's R&D expenses. If value is zero, put zero in cell; if value unknown, leave cell blank.

#	Item	2004	2005	2006	2007 est.
		<i>1,000 dollars</i>			
1	Total in-house R&D expenses for <u>all</u> liquid fuel and chemical R&D				
2	Liquid biofuels in-house R&D expenses				
3	Bio-based chemicals in-house R&D expenses				
	<i>Use line no. 4 below only if unable to separate liquid fuels and bio-based chemicals R&D expenditures</i>				
4	Liquid biofuels and bio-based chemicals in-house R&D expenses				
Note: Use 2007 year-to-date data to project for full-year 2007.					

IV.2. What are the major areas of your R&D activities involving liquid biofuels and bio-based chemicals? Check all that apply.

Check all that apply	Research areas
<input type="checkbox"/>	Enzyme or micro-organism development
<input type="checkbox"/>	Thermochemical processes
<input type="checkbox"/>	Cellulosic ethanol
<input type="checkbox"/>	Biodiesel production using enzymes or micro-organisms
<input type="checkbox"/>	Diesel from Fisher-Tropsch conversion of bio-based syngas
<input type="checkbox"/>	Diesel isolated from liquefied biomass
<input type="checkbox"/>	Higher yields of biofuels or bio-based chemicals per unit of feedstock
<input type="checkbox"/>	Higher yields of feedstocks per acre
<input type="checkbox"/>	Development of new feedstocks
<input type="checkbox"/>	Biocatalysis
<input type="checkbox"/>	Bio-based chemicals from sugar platforms
<input type="checkbox"/>	Liquid biofuels other than ethanol, biobutanol, and biodiesel
<input type="checkbox"/>	Biobutanol
<input type="checkbox"/>	Fractionation of corn kernel
<input type="checkbox"/>	Development of higher-value co-products
<input type="checkbox"/>	New drug development
<input type="checkbox"/>	Other A
	Specify other A:
<input type="checkbox"/>	Other B
	Specify other B:
<input type="checkbox"/>	Other C
	Specify other C:
<input type="checkbox"/>	Other D
	Specify other D:

IV.3. Please provide the number of R&D in-house employees for each of the items shown below for R&D establishments located in the United States. Include scientists, engineers, technicians, R&D managers, and other staff (support, personnel, etc.) related directly to R&D. If value is zero, put zero in cell; if value unknown, leave cell blank. See question II.11 or III.11 for definition of full time equivalent.

#	Item	2004	2005	2006	2007 est.
		Full-time equivalents			
1	Total in-house employees for <u>all</u> liquid fuel and chemical R&D				
2	Liquid biofuels R&D employees				
3	Bio-based chemicals R&D employees				
	<i>Use line no. 4 below only if unable to separate liquid fuels and bio-based chemicals R&D employees.</i>				
4	Liquid biofuels and bio-based chemicals R&D employees				
	Note: Use 2007 year-to-date data to project for full-year 2007				

SECTION V. INVESTMENT

Investment is defined as capital expenditures for plant construction, improvements to existing plant and equipment, and purchases of new or existing plant, property, machinery and equipment. This includes direct expenditures by your organization, and expenditures by other organizations (e.g., construction firm) done for your organization. Capital expenditures for R&D-related property, plant, and equipment are included in this category. Investment also includes expenditures for acquired companies. It does not include expenses for routine maintenance and repair.

V.1. Please provide the following information about your organization's investment expenditures. If value is zero, put zero in cell; if value unknown, leave cell blank.

#	Item	2004	2005	2006	2007 est.
1,000 dollars					
1	Total investment for <u>all</u> liquid fuel and chemical activities				
2 Liquid biofuels investment:					
	R&D facilities (see note below)				
	All other investment				
3 Bio-based chemicals investment					
	R&D facilities (see note below)				
	All other investment				
<i>Use line no. 4 below only if unable to separate liquid fuels and bio-based chemicals investment</i>					
4 Liquid biofuels and bio-based chemicals investment:					
	R&D facilities (see note below)				
	All other investment				
Note: If unable to separate R&D investment from all other investment, include in all other investment. Use 2007 year-to-date data to project for full-year 2007.					

V.2 Indicate the most important companies your organization acquired during 2004-2007(YTD) that are related to your industrial biotechnology activities. Leave blank if no companies acquired.

Acquired company name (enter no more than five) and country location of major operations	Year acquired (4 digits)	Enter up to two type codes from list below
Type codes: A: U.S.-located domestic feedstock operation B: U.S.-located R&D operation C: U.S.-located liquid fuels production operation D: U.S.-located bio-based chemical production operations E: U.S.-located intermediate product production operations F: U.S.-located final product production operations G: U.S.-located retail operations H: Other U.S.-located operations I: Foreign-located feedstock operation J: Foreign-located R&D operation K: Foreign-located liquid fuels production operation L: Foreign-located bio-based chemical production operations M: Foreign-located intermediate product production operations N: Foreign-located final product production operations O: Foreign-located retail operations P: Other foreign-located operations		

V.3. During 2004-2007, which sources provided investment funding for your liquid biofuels and bio-based chemical activities?

Source	Check all that apply (rank importance in columns to the right)	Rank in importance, if box checked in previous column (pick one box per row)				
		Not important			Very important	
Retained earnings	<input type="checkbox"/>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Federal government	<input type="checkbox"/>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
State or local government	<input type="checkbox"/>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Domestic-sourced venture capital	<input type="checkbox"/>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Foreign-sourced venture capital	<input type="checkbox"/>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Angel investors (see note below)	<input type="checkbox"/>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Debt	<input type="checkbox"/>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Collaborative alliance partner	<input type="checkbox"/>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Initial public offering (IPO) of stock	<input type="checkbox"/>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Sales of equity other than IPO	<input type="checkbox"/>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Other	<input type="checkbox"/>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Specify other:						
Note: An angel investor is typically an individual investor involved in the early stages of equity financing when companies are too small to attract venture capital financing.						

SECTION VI. INTELLECTUAL PROPERTY AND TECHNOLOGY TRANSFER ISSUES

VI.1. Indicate below your organization’s industrial biotechnology patent and trademark activity below. In each year, indicate new activity only. If value is zero, put zero in cell; if value unknown, leave cell blank.

#	Item	2004	2005	2006	2007 est.
		Number			
1	New patent applications				
2	New trademarks registered				
Note: For 2007, include any anticipated applications or registrations.					

VI.2. Please indicate below the total number of industrial biotechnology product and process patents your organization has been granted in and outside of the United States since 1997. If value is zero, put zero in cell; if value unknown, leave cell blank.

Type	Domestic Patents	Foreign Patents
	Number	
Product patents		
Process patents		
<i>Use line below if patent is both a product and process patent or if unable to specify</i>		
Product or process patents		

VI.3. Please indicate your organization's income from granting or selling industrial biotechnology-related intellectual property rights (IPR) to external domestic or foreign organizations during 2004-2007. If value is zero, put zero in cell; if value unknown, leave cell blank.

#	Item	2004	2005	2006	2007 est.
<i>1,000 dollars</i>					
1	IPR licensing income				
2	IPR sales income				
3	Other IPR income				
	Specify other:				
Note: Use 2007 year-to-date data to project for full-year 2007.					

VI.4. Please indicate your organization's expenses for obtaining industrial biotechnology-related intellectual property rights from external domestic or foreign organizations during 2004-2007. If value is zero, put zero in cell; if value unknown, leave cell blank.

#	Item	2004	2005	2006	2007 est.
<i>1,000 dollars</i>					
1	IPR licensing costs				
2	IPR purchase costs				
3	Other IPR costs				
	Specify other:				
Note: Use 2007 year-to-date data to project for full-year 2007.					

SECTION VII. COMPETITIVE FACTORS

VII.1. Please indicate the competitive factors that affect your organization's ability to market liquid biofuels and/or bio-based chemical products. Indicate just the top five competitive factors below, ranking from one to five, with one being the most important.

Competitive Factor	Put number in this column for top five factors only
Price of feedstock	
Production costs	
Ability to price product appropriately	
Technology availability	
Product performance characteristics	
Product quality	
Plants that are able to produce co-products	
Financing availability	
Product standards	
Transportation costs	
Delivery time	
Hedging instruments for feedstocks	
Hedging instruments for product	
Consumer acceptance of product	
Government incentives/support	
Other	
Specify other factor:	

VII.2. Indicate whether each of the following acts as a significant impediment to your organization's R&D activities related to liquid biofuels and/or bio-based chemicals.

		Check one box per impediment to indicate level of significance				
#	Impediment	Not significant	←—————→			Very significant
1	Lack of funds (debt or equity)	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
2	Limits of available technology	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
3	Lack of human resources with appropriate educational qualifications	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
4	Regulatory requirements in the United States	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
5	Inability to qualify for federal government grants	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
6	Inability to qualify for state or local grants	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
7	Inability to establish alliances	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
8	Patent barriers	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
9	Difficulty in accessing technology developed in universities	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
10	Poor public perception or acceptance of bio-products	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
11	Other (specify below)	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Specify other impediment:						

VII.3. Have the impediments indicated in question VII.2 resulted in a decision by your organization not to pursue any industrial biotechnology R&D activities?

<input type="checkbox"/> No	<input type="checkbox"/> Yes
-----------------------------	------------------------------

VII.4. Have the impediments indicated in question VII.2 resulted in a decision by your organization to abandon one or more specific industrial biotechnology R&D project(s)?

<input type="checkbox"/> No	<input type="checkbox"/> Yes
-----------------------------	------------------------------

VII.5. Please indicate the three most significant impediments affecting your organization's R&D activities, using the impediment number in the first column of the table in question VII.2.

Rank	Put impediment number in this column
1	
2	
3	

VII.6. Indicate whether each of the following acts as a significant impediment to your organization's commercialization of liquid biofuels and/or bio-based chemicals.

#	Impediment	Check one box per impediment to indicate level of significance				
		Not significant	←—————→			Very significant
1	Unreliable supply of agriculture feedstocks	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
2	High price of agriculture feedstocks	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
3	High price of enzymes or micro-organisms	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
4	Availability of enzymes or micro-organisms	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
5	Crude petroleum price uncertainty	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
6	Availability of water	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
7	Ability to dispose of co-products or byproducts profitability	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
8	Lack of capital (debt or equity)	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
9	Limits of available technology	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
10	Lack of production workers	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
11	Not related to current lines of business	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
12	Lack of human resources with appropriate educational qualifications	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
13	Lack of distribution and marketing channels	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
14	Poor public perception or acceptance of bio-products	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Regulatory barriers:						
15	In the United States	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
16	In foreign countries	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
17	Patent barriers	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
18	High licensing costs	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
19	Transportation to market capacity limitations or bottlenecks	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
20	Transportation costs	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
21	Difficult to integrate into existing production processes	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
22	Absence of product standards or certification	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
23	Level of risk relative to profit potential is high	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
24	Lack of market knowledge	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
25	Cost of final product not competitive with conventional product	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
26	Market dominated by other companies	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
27	Foreign market tariffs	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
28	Other foreign market barriers	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Specify other foreign market barrier:						
29	Other (specify below)	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
Specify other impediment:						

VII.7. Have the impediments indicated in question VII.6 resulted in a decision by your organization not to pursue any industrial biotechnology commercialization activities?

<input type="checkbox"/> No	<input type="checkbox"/> Yes
-----------------------------	------------------------------

VII.8. Have the impediments indicated in question VII.6 resulted in a decision by your organization to abandon one or more specific industrial biotechnology commercialization project(s)?

<input type="checkbox"/> No	<input type="checkbox"/> Yes
-----------------------------	------------------------------

VII.9. Please rank the five most significant impediments affecting your organization's commercialization activities, using the impediment number in the first column of the table in question VII.6.

Rank	Put impediment number in this column
1	
2	
3	
4	
5	

SECTION VIII. STRATEGIC ALLIANCES

VIII.1. Please indicate the number of alliances or collaborations your organization had or has with external organizations located in the United States (regardless of the organization's country of origin). Include only those that are related to your industrial biotechnology activities. For each year, enter only new alliances established. If value is zero, put zero in cell; if value unknown, leave cell blank. Underlined terms defined on pages 4-6.

Organization type	2004	2005	2006	2007
	Number			
<u>Enzyme/micro-organism</u> developer or producer				
<u>Agriculture feedstock</u> provider				
Intermediate product producer				
End product producer				
Retail marketer				
R&D organization not affiliated with university or government				
University				
Federal government entity				
State or local government entity				
Other				
Specify other:				
Note: For 2007, include any anticipated new alliances or collaborations through the end of the year.				

VIII.2. Please indicate the number of alliances or collaborations your organization had or has with external organizations not located in the United States (regardless of the organization's country of origin). Include only those that are related to your industrial biotechnology activities. For each year, enter only new alliances established. If value is zero, put zero in cell; if value unknown, leave cell blank. Underlined terms defined on pages 4-6.

Organization type	2004	2005	2006	2007
	Number			
<u>Enzyme/micro-organism</u> developer or producer				
<u>Agriculture feedstock</u> provider				
Intermediate product producer				
End product producer				
Retail marketer				
R&D organization not affiliated with university or government				
University				
Federal government entity				
State or local government entity				
Other				
Specify other:				
Note: For 2007, include any anticipated new alliances or collaborations through the end of the year.				

VIII.3. Please indicate the reasons for the alliances listed in the previous two questions. Check all that apply. Underlined terms defined on pages 4-6.

Access to <u>agricultural feedstocks</u>	<input type="checkbox"/>
Access to other <u>biomass</u>	<input type="checkbox"/>
Access to R&D resources	<input type="checkbox"/>
Lower operating expenses	<input type="checkbox"/>
Access to domestic markets/distribution channels	<input type="checkbox"/>
Access to foreign markets/distribution channels	<input type="checkbox"/>
Access to intellectual property	<input type="checkbox"/>
Access to capital	<input type="checkbox"/>
Access to production knowledge/skills	<input type="checkbox"/>
Risk reduction	<input type="checkbox"/>
Other	<input type="checkbox"/>
Specify other:	

SECTION IX. GOVERNMENT POLICIES

IX.1. Please provide the amount of government grant funds your organization received, and any matching funds from your organization, for industrial biotechnology activities during 2004-2007. Include entire amount of grant in the year of the grant. If value is zero, put zero in cell; if value unknown, leave cell blank.

#	Grant type	2004	2005	2006	2007 est.
		<i>1,000 dollars</i>			
	Federal government:				
1	Funds from federal government				
2	Your organization's matching funds				
	State and local grants:				
3	Funds from a state or locality				
4	Your organization's matching funds				
Note: For 2007, include any anticipated grants.					

IX.2. Please provide information on what grants were or are being used for during 2004-2007, ranked by amount of total grant during 2004-2007. Leave blank if you did not use grants for indicated use category. Select use category that the grant best fits.

Use category	Rank (indicate 1, 2, 3, etc.)
R&D of enzyme or micro-organisms	
R&D of liquid biofuels	
R&D of bio-based chemicals	
R&D of second generation bio-refinery	
Liquid fuels pilot or demonstration plant	
Bio-based chemical pilot or demonstration plant	
Second generation bio-refinery pilot or demonstration plant	
Commercialization of liquid biofuels	
Commercialization of bio-based chemicals	
Commercialization of second generation bio-refinery	
Other	
Specify other:	
Note: If a grant is for more than one of the uses indicated above, prorate the amount to each use, and then determine ranking.	

IX.3. Please indicate the relative importance of U.S. government programs that are currently supporting your organization's development and/or adoption of industrial biotechnology. Underlined term defined on page 4.

#	Government program	Check one box per line to indicate importance				
		Not important	←————→			Very important
	Tax incentives:					
1	Federal	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
2	State or local	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
3	Mandatory use of intermediate products	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
4	Mandatory use of final products	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
	Loan guarantees:					
5	Federal	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
6	State or local	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
	Grants from federal government:					
7	From Department of Energy	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
8	From Department of Agriculture	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
9	From all other federal government agencies	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
10	Grants from state or local government	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
11	Collaboration with government agencies, including national laboratories	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
12	Government procurement of bio-based products	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
13	U.S. import tariff	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
14	Supporting <u>agriculture feedstock supply</u>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
15	Supporting <u>agriculture feedstock utilization</u>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
16	Other	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>
	Specify other program:					

IX.4. Compare the government programs listed in question IX.3 to each other, and list the top five most effective in supporting your organization's development and/or adoption of industrial biotechnology.

Rank	Top government programs in effectiveness (use number in first column of table in previous question)
1	
2	
3	
4	
5	

IX.5. Please describe any federal, state, or local programs that are currently inhibiting your organization's development and/or adoption of industrial biotechnology.

Description:

IX.6. Please indicate below which countries have government policies at the national or local levels that give their developers and adopters an advantage compared with U.S. developers of bio-based products, and the nature of the advantage. Consider only cases where your organization has direct experience with business conditions in the country or region. If there are any other policy advantages that are not listed in this table, please list in section XI.

Country/region	Do not know	No advantage	Policy advantage (check all that apply)				
			Tax incentives	R&D support	Mandatory use	Loan guarantees	Import tariffs
Argentina	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Australia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brazil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canada	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
China	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EU*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Belgium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Finland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
France	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Germany	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Netherlands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sweden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
United Kingdom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
India	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Indonesia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Japan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Korea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Malaysia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New Zealand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thailand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Philippines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
South Africa	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Specify other country:							
*Include policies that apply to all EU countries. Policies specific to one EU country should be included in the response for that country.							

IX.7. Please indicate which countries have the most supportive government policies in regard to the development and adoption of industrial biotechnology. Consider all countries, including the United States. Indicate up to the top 5 below.

Rank	Country name
1	
2	
3	
4	
5	

IX.8. Do agricultural feedstock issues listed below affect your operations that consume these materials? Indicate all that affect your operations, and rank the five most important issues. Agricultural feedstocks include crops (such as corn, wheat, soybeans), crop wastes (such as corn stover), switchgrass, and wheatgrass.

Check if affects operations	Agricultural feedstock issue	Ranking of top 5 issues*
<input type="checkbox"/>	Lack of storage capacity at point of origin	
<input type="checkbox"/>	Costs	
<input type="checkbox"/>	Poor quality (contamination)	
<input type="checkbox"/>	Supply disruptions	
<input type="checkbox"/>	Transportation bottlenecks from point of origin to your operations	
<input type="checkbox"/>	Poor crop yields	
<input type="checkbox"/>	Unavailability of new varieties	
<input type="checkbox"/>	Other	
Specify other:		
*Indicate a number for just the top five issues based on their effects on your organization.		

IX.9. List the major U.S. government programs and the administering agency at the federal, state, or local level that directly affect your organization's *supply* of agriculture feedstocks. Include any programs that provide farm assistance, R&D support, loan guarantees to suppliers, etc. Do not include any programs that affect downstream products; for example, tax credits for ethanol blending. Leave blank if none or unknown. Underlined term defined on page 4.

IX.10. List the major U.S. government programs and the administering agency at the federal, state, or local level that are directly affecting your organization's *utilization* of agriculture feedstocks. Leave blank if none or unknown. Underlined term defined on page 4.

SECTION X. COMPARISON OF BIO-BASED PRODUCT WITH CONVENTIONAL PRODUCT

X.1. Does your organization produce, or have experience producing, a conventional liquid fuel or chemical and a comparable bio-based product? Examples include: conventional diesel fuel versus biodiesel fuel; petroleum-based 1,3-propanediol versus bio-based 1,3-propanediol.

- NO Proceed to section XI.
- YES Proceed below.

The rest of this section requests information for each of your organization's top two products (based on sales of the bio-based product) for which you can make a knowledgeable comparison. If your organization would like to submit more than two comparisons, please contact the project team.

X.2A. Product comparison 1

Conventional product name:	
Bio-based product name	

Product type (check one):

Fuel	<input type="checkbox"/>
Commodity chemical	<input type="checkbox"/>
Chemical intermediate	<input type="checkbox"/>
Specialty chemical	<input type="checkbox"/>
Pharmaceutical	<input type="checkbox"/>
Food additive/ingredient	<input type="checkbox"/>
Polymer	<input type="checkbox"/>
Flavor or fragrance	<input type="checkbox"/>
Other	<input type="checkbox"/>
Specify other:	

X.2D. Please compare the average price of the bio-based product as compared with the price of the conventional product during the most recent year, and indicate the difference below. Check one box.

Item	Bio-based product is lower by				No difference	Bio-based product is higher by			
	Over 25%	11% to 25%	6% to 10%	5% or less		5% or less	6% to 10%	11% to 25%	Over 25%
Comparison of average price	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>

X.2E. Please indicate the trend in net sales during 2004-2007 of the bio-based product and the conventional product, and indicate the difference below. Check one box per item.

Item	Declined by				Remained constant	Increased by			
	Over 25%	11% to 25%	6% to 10%	5% or less		5% or less	6% to 10%	11% to 25%	Over 25%
Net sales of bio-product	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>
Net sales of conventional product	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>

X.2F. The primary purchasers of the bio-based and conventional product are engaged in:

- Production of an intermediate product
- Production of a final product
- Distribution to end user
- Other Specify other: _____

X.2G. What are the reasons that your primary purchasers buy the bio-based product as compared with the conventional product? Check all that apply.

<input type="checkbox"/>	Lower price
<input type="checkbox"/>	Provides product qualities that enhance their production process
<input type="checkbox"/>	Provides specific product qualities desired by their consumers
<input type="checkbox"/>	Provides energy savings in their production process
<input type="checkbox"/>	Provides environmental benefits by reducing waste
<input type="checkbox"/>	Meets federal, state, or local government mandate
<input type="checkbox"/>	Enables sales into a new market
<input type="checkbox"/>	Ability to market product as "green"
<input type="checkbox"/>	Other
Specify other:	

X.3A. Product comparison 2

Conventional product name:	
Bio-based product name	

Product type (check one):

Fuel	<input type="checkbox"/>
Commodity chemical	<input type="checkbox"/>
Chemical intermediate	<input type="checkbox"/>
Specialty chemical	<input type="checkbox"/>
Pharmaceutical	<input type="checkbox"/>
Food additive/ingredient	<input type="checkbox"/>
Polymer	<input type="checkbox"/>
Flavor or fragrance	<input type="checkbox"/>
Other	<input type="checkbox"/>
Specify other:	

X.3B. Comparing the conventional product to the bio-based product, please indicate the difference in the indicated items in regard to production. For example, if the investment required to build a plant that can produce the bio-based product is 10 percent lower than the capital costs to build a comparable conventional plant, put a check in box C in the first row. Please respond for each item that applies. Assume costs for raw material, labor, etc. are the same as the current situation. Leave cells in row blank if unknown. Check no more than one box per item

Item	Bio-based product is lower by				No difference	Bio-based product is higher by			
	Over 25%	11% to 25%	6% to 10%	5% or less		5% or less	6% to 10%	11% to 25%	Over 25%
Investment	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>
Energy consumption	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>
Total production costs	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>
Labor costs	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>
Product purity	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>
Greenhouse gas emission	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>
Air pollutant emissions	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>
Solid waste generation	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>
Other	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>
Specify other:									

X.3C. Please provide the following production costs as a percent of total production costs to the nearest indicated percentage for the most recent year. Check one box per cost item.

Cost item	Percent of total production costs for most recent year								
	10%	20%	30%	40%	50%	60%	70%	80%	90%
For conventional product:									
Raw materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Direct labor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For bio-based product:									
Raw materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Direct labor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

X.3D. Please compare the average price of the bio-based product as compared with the price of the conventional product during the most recent year, and indicate the difference below. Check one box.

Item	Bio-based product is lower by				No difference	Bio-based product is higher by			
	Over 25%	11% to 25%	6% to 10%	5% or less		5% or less	6% to 10%	11% to 25%	Over 25%
Comparison of average price	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>

X.3E. Please indicate the trend in net sales during 2004-2007 of the bio-based product and the conventional product, and indicate the difference below. Check one box per item.

Item	Declined by				Remained constant	Increased by			
	Over 25%	11% to 25%	6% to 10%	5% or less		5% or less	6% to 10%	11% to 25%	Over 25%
Net sales of bio-product	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>
Net sales of conventional product	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	G <input type="checkbox"/>	H <input type="checkbox"/>	I <input type="checkbox"/>

X.3F. The primary purchasers of the bio-based and conventional product are engaged in:

- Production of an intermediate product
- Production of a final product
- Distribution to end user
- Other Specify other: _____

X.3G. What are the reasons that your primary purchasers buy the bio-based product as compared with the conventional product? Check all that apply.

<input type="checkbox"/>	Lower price
<input type="checkbox"/>	Provides product qualities that enhance their production process
<input type="checkbox"/>	Provides specific product qualities desired by their consumers
<input type="checkbox"/>	Provides energy savings in their production process
<input type="checkbox"/>	Provides environmental benefits by reducing waste
<input type="checkbox"/>	Meets federal, state, or local government mandate
<input type="checkbox"/>	Enables sales into a new market
<input type="checkbox"/>	Ability to market product as "green"
<input type="checkbox"/>	Other
Specify other:	

SECTION XI. OTHER INFORMATION

XI.1. If you would like to elaborate on any of your responses, or provide any additional pertinent information, use the space below. Specify if the additional information applies to a specific question number. If information is general in nature, leave "Question no." column blank.

Question no.	Additional information