



# Environmental Impacts of Diet Changes in the EU

## Annex Report

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## Table of contents

<b>1</b>	<b>CHAPTER 2, ANNEX 1: FOOD BALANCE SHEETS.....</b>	<b>1</b>
<b>2</b>	<b>CHAPTER 2, ANNEX 2: FOOD GROUPS IN FAO FOOD BALANCE SHEETS.....</b>	<b>3</b>
<b>3</b>	<b>CHAPTER 3, ANNEX 1. RESULTS OF CLUSTER ANALYSIS (KMEANS PROCEDURE).....</b>	<b>5</b>
<b>4</b>	<b>CHAPTER 5, ANNEX 1: DESCRIPTION OF THE CAPRI MODEL.....</b>	<b>7</b>
4.1	General system layout.....	7
4.1.1	Model Layout .....	8
4.1.2	Policy and Tariff Representation .....	10
4.2	Regional Representation of the Agricultural Sector: Supply Module.....	11
4.3	Design of the Regional Supply Models .....	11
4.3.1	Modelling of CAP Domestic Support.....	12
4.3.2	Linking of the two Modules .....	12
4.4	The Construction of the Baseline Scenario.....	14
<b>5</b>	<b>CHAPTER 5, ANNEX2: CORRESPONDENCE TABLE CAPRI – E3IOT .....</b>	<b>18</b>
<b>6</b>	<b>CHAPTER 5, ANNEX 3: FINAL DEMAND VECTORS E3IOT.....</b>	<b>24</b>
6.1	Scenario 0, 1, 2 and 3 - All .....	25
6.2	Scenario All + first order .....	34
<b>7</b>	<b>CHAPTER 5, ANNEX 4: TOTAL SUPPLY VECTORS AS INPUT TO CAPRI.....</b>	<b>43</b>
<b>8</b>	<b>CHAPTER 5, ANNEX 5: AGGREGATED ENVIRONMENTAL IMPACTS PER EURO FOR FOOD PRODUCT GROUPS ACCORDING E3IOT.....</b>	<b>45</b>
<b>9</b>	<b>CHAPTER 5, ANNEX 6: CONTRIBUTION OF ALL PRODUCTS TO OVERALL ENVIRONMENTAL IMPACT FOR SCENARIO 0 .....</b>	<b>46</b>
<b>10</b>	<b>CHAPTER 5, ANNEX 7: CONTRIBUTION OF ALL PRODUCTS TO OVERALL ENVIRONMENTAL IMPACTS FOR SCENARIO 1 .....</b>	<b>55</b>
<b>11</b>	<b>CHAPTER 5, ANNEX 8: CONTRIBUTION OF ALL PRODUCTS TO OVERALL ENVIRONMENTAL IMPACTS FOR SCENARIO 2 .....</b>	<b>65</b>
<b>12</b>	<b>CHAPTER 5, ANNEX 9: CONTRIBUTION OF ALL PRODUCTS TO OVERALL ENVIRONMENTAL IMPACTS FOR SCENARIO 3.....</b>	<b>74</b>
<b>13</b>	<b>CHAPTER 5, ANNEX 10: ENVIRONMENTAL IMPACT SCORES OF FINAL CONSUMPTION OF ALL PRODUCTS INCLUDING FIRST ORDER EFFECTS.....</b>	<b>83</b>
<b>14</b>	<b>CHAPTER 5, ANNEX 11: ENVIRONMENTAL IMPACT SCORES OF FINAL CONSUMPTION ALL PRODUCTS INCLUDING SECOND ORDER EFFECTS.....</b>	<b>84</b>
<b>15</b>	<b>CHAPTER 5, ANNEX 12: TOTAL SUPPLY VECTORS FROM CAPRI.....</b>	<b>85</b>
<b>16</b>	<b>CHAPTER 5, ANNEX 13: LCA DATA DESCRIBING A PIG FARM .....</b>	<b>86</b>
<b>17</b>	<b>CHAPTER 5, ANNEX 14: LCA DATA DESCRIBING A MIXED DAIRY – CATTLE FARM .....</b>	<b>87</b>

## 1 CHAPTER 2, ANNEX 1: FOOD BALANCE SHEETS<sup>1</sup>

Food balance sheets present a comprehensive picture of the pattern of a country's food supply during a specified reference period. A food balance sheet shows for each food item - i.e., each primary commodity and a number of processed commodities potentially available for human consumption - the sources of supply and its utilization. The total quantity of foodstuffs produced in a country added to the total quantity imported and adjusted for any change in stocks that may have occurred since the beginning of the reference period, gives the supply available during that period. On the utilization side, a distinction is made between the quantities exported, fed to livestock, used for seed, put to manufacture for food use and non-food uses, lost during storage and transportation, and available as food for human consumption at the retail level. The per caput supply of each such food item available for human consumption is then obtained by dividing its respective quantity by the related data on the population actually partaking of it. Data on per caput food supplies are expressed in terms of quantity and also in terms of caloric value, protein and fat content.

It is important to note that the quantities of food available for human consumption, as estimated in the food balance sheets, relate simply to the quantities reaching the consumer in private households, as well as in the non-household sector, i.e., catering establishments, boarding schools, hospitals, prisons, armed forces' bases and other communities. The amount of food actually consumed may be lower than the quantity shown in the food balance sheet. The difference reflects waste occurring between the retail level and the kitchen and losses of edible food and nutrients in the household, e.g., during storage, in preparation and cooking (which affect vitamins and minerals to a greater extent than calories, protein and fat), as plate-waste, or as quantities fed to domestic animals and pets, or that thrown away.

The accuracy of food balance sheets, which are in essence derived statistics, is of course dependent on the reliability of the underlying statistics of supply and utilization of food and of population.

Among the practical issues that often must be addressed in constructing food balance sheets, a conceptual problem frequently arises with respect to the coverage/representativeness of the basic data. Production statistics are mostly confined to commercialized major food crops. Non-commercial or subsistence-level production usually is not included.

The incompleteness and inaccuracy of the basic data are the major problem encountered in developing countries. Production statistics may not be available for all commodities needed. And even where the statistics are available, they are not always complete or reliable. An appreciable part of total production is non-commercial or subsistence production, i.e., foodstuffs grown or gathered wild by households for their own consumption. The estimation of production of some crops is further complicated because they are continuously harvested at regular or irregular intervals over a long period of time, e.g., cassava, and certain fruits and vegetables. Moreover, for certain crops, the produce is not completely harvested; a portion is held back as a reserve from which to draw if the need arises or even left to rot, e.g., cassava and plantains. Moreover, certain kinds of food may not be covered by food balance sheets because they are not included in national production statistics. Meats, such as those of game, wild animals and insects, may be excluded for this reason. Under conditions such as those prevailing in many developing countries, these meats may form a substantial part of the low consumption level of animal protein. Also, major food crops may not be grown in pure stands but mix-planted in fields of bewildering complexity. In such instances, per caput food consumption data derived from household surveys, multiplied by population numbers, can sometimes help to provide the required production estimates.

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<sup>1</sup> Available at: <http://www.fao.org/es/ess/consweb.asp>

Import and export data may be reasonably accurate in the majority of countries, but in some countries significant amounts of trade across national boundaries go unrecorded. Moreover, import and export transactions may not receive equal attention from the custom's administration because taxes and/or quantitative controls are generally concentrated more on imports than exports. As a consequence, the reliability of export data may also be questionable.

Seeding rates for crops are fairly well established in most countries, but when the quantities fed to animals have to be estimated, many aspects must be considered. Feeding practices vary from country to country according to the quantity and quality of pastures, the degree to which rearing is intensive, the prices of feedstuffs, etc. In addition, the quality of grain and other feeding stuffs fed to livestock may vary from one year to year to the next.

Often in constructing the food balance sheets, a number of adjustments on the basic data as well as imputations/estimations of the missing data have to be carried out. Once estimates of the other components have been made, the estimate of food available for human consumption is usually derived as a residual according to the following equation:

Food available for human consumption = Total food supply - Feed - Seed - Industrial uses - Waste.

Since the estimate of food available for human consumption is derived as a residual, its reliability would depend on the availability and accuracy of the other components on which it is based. In the case where the majority of the basic data are available and reliable, and the adjustments are based on second judgement, the estimate of the food available for human consumption is likely to be reliable.

It stands to reason that where the basic data are incomplete and unreliable, an estimate of food available for human consumption is unlikely to be accurate. Furthermore, since it is derived as a residual, the error is unquantifiable and its direction is also unknown. In view of the frequent use of the estimate of food available for human consumption in various food and nutritional studies, it would be desirable if a more reliable and justifiable estimate of this component could be made available. At a minimum, this means the quantity of food available for human consumption would have to be estimated independently based on other existing statistical sources of information. One such source would be a household survey which collects quantities of food items consumed or acquired. Consideration of the survey data as the basic statistics pertaining to the food availability element does not, of course, necessarily imply using them directly as the estimates of food availability. They should rather be used as inputs or starting points in a process of adjustments that will have to take into account conceptual differences, judgements regarding data quality and also the consistency in relation to the inputs or estimates for the other elements of the food balance sheet. The use of the survey data in this manner should help to reduce the reliance on the residual or balancing approach in arriving at the food availability estimates, while also allowing more flexibility in handling the other elements for which the basic statistics are poor.

## 2 CHAPTER 2, ANNEX 2: FOOD GROUPS IN FAO FOOD BALANCE SHEETS.

List of commodities (main and subgroups) included in FAO Food Balance Sheets and their contribution to the average energy intake (kcal) of the European Union (2003)

Items	Calories/ capita/day	Saturated fat/ total fat (%) <sup>1</sup>	Items	Calories/ capita/day	Saturated fat/ total fat (%) <sup>1</sup>
Grand Total	3353		Vegetables	80	
Vegetal Products	2425		Tomatoes	13	
Animal Products	928		Onions	10	
Cereals - Excluding Beer	1029		Vegetables, Other	57	
Wheat	840		Fruits - Excluding Wine	101	
Rice (Milled Equivalent)	49		Oranges, Mandarines	14	
Barley	10		Lemons, Limes	1	
Maize	53		Grapefruit	1	
Rye	58		Citrus, Other	0	
Oats	11		Bananas	12	
Millet	3		Plantains	0	
Sorghum	0		Apples	24	
Cereals, Other	4		Pineapples	3	
Starchy Roots	171		Dates	1	
Cassava	0		Grapes	13	
Potatoes	170		Fruits, Other	32	
Sweet Potatoes	0		Stimulants	22	
Yams	0		Coffee	5	
Roots, Other	0		Cocoa Beans	17	57
Sugar crops	0		Tea	1	
Sugar Cane	0		Spices	4	
Sugar Beet	0		Pepper	1	
Sugar & Sweeteners	390		Pimento	2	
Sugar (Raw Equivalent)	366		Cloves	0	
Sweeteners, Other	19		Spices, Other	2	
Honey	5		Alcoholic Beverages	176	
Pulses	25		Wine	41	
Beans	7		Beer	87	
Peas	12		Beverages, Fermented	2	
Pulses, Other	6		Beverages, Alcoholic	46	
Treenuts	22	12	Meat	349	
Oilcrops	20		Bovine Meat	72	40
Soyabeans	1	10	Mutton & Goat Meat	14	50
Groundnuts (Shelled Eq)	11	18	Pigmeat	191	35
Sunflowerseed	1	0	Poultry Meat	66	30
Rape and Mustardseed	1	11.6	Meat, Other	7	40
Cottonseed	0	15	Offals, Edible	12	
Coconuts - Incl Copra	2	87	Animal Fats	182	
Sesameseed	1	16	Butter, Ghee	71	62
Palmkernels	0	48	Cream	17	57
Olives	3	14.5	Fats, Animals, Raw	91	43
Oilcrops, Other	0	15	Fish, Body Oil	3	
Vegetable Oils	382		Fish, Liver Oil	0	
Soyabean Oil	68	10	Milk - Excluding Butter	299	59
Groundnut Oil	7	16	Eggs	48	27
Sunflowerseed Oil	141	0	Fish, Seafood	38	30
Rape and Mustard Oil	57	11.6	Freshwater Fish	5	
Cottonseed Oil	1	15	Demersal Fish	9	
Palmkernel Oil	1	48	Pelagic Fish	17	
Palm Oil	13	48	Marine Fish, Other	3	
Coconut Oil	13	87	Crustaceans	2	
Sesameseed Oil	1	16	Cephalopods	2	

Items	Calories/ capita/day	Saturated fat/ total fat (%) <sup>1</sup>
Olive Oil	57	14.5
Ricebran Oil	0	
Maize Germ Oil	10	13.5
Oilcrops Oil, Other	13	15

Items	Calories/ capita/day	Saturated fat/ total fat (%) <sup>1</sup>
Molluscs, Other	1	
Aquatic Products, Other	0	
Aquatic Animals, Others	0	
Aquatic Plants	0	
Miscellaneous	4	

<sup>1</sup> % Saturated fat/total fat was derived from the Dutch Food Composition Table and used to calculate the contribution of each commodity to the saturated fat intake based on the total fat intake from the commodity.

### 3 CHAPTER 3, ANNEX 1. RESULTS OF CLUSTER ANALYSIS (KMEANS PROCEDURE)

Cluster analysis is the classification of objects into different groups, or more precisely, the partitioning of a data set into subsets (clusters), so that the data in each subset (ideally) share some common trait - often proximity according to some defined distance measure. More specifically, the K-means algorithm assigns each point to the cluster whose center (also called centroid) is nearest. The center is the average of all the points in the cluster — that is, its coordinates are the arithmetic mean for each dimension separately over all the points in the cluster.

In simple words, cluster analyses as applied here, is a statistical technique to identify groups (i.e., clusters) of countries that (1) share a fairly similar dietary pattern, and (2) are considerably different (in terms of dietary patterns) from other clusters. The technique allows simultaneous consideration of multiple factors (i.e., aspects of dietary patterns, such as: the percentage of energy derived from food sources, the ratio of energy from vegetable and protein sources) at a much more detailed level than eyeballing. Cluster analysis is a generally applied and accepted statistical technique. It does not, however, give insight in the practical plausibility of the clustering.

The cluster analysis presented below, included only the statistically significant variables from a first analysis including all variables. Analysis was conditioned to yield five clusters.

**Table 1: Cluster membership of 26<sup>1</sup> EU member states; countries sorted according to ratio vegetable energy / animal energy**

Case Number	Country	Cluster	Distance
1	Finland	1	.066
2	France	1	.028
3	Denmark	1	.045
4	Sweden	1	.060
5	Austria	2	.129
6	Hungary	2	.114
7	Ireland	2	.058
8	Belgium	2	.091
9	Slovenia	2	.127
10	Germany	2	.073
11	UK	2	.089
12	Netherlands	5	.106
13	Cyprus	5	.145
14	Portugal	5	.039
15	Spain	5	.103
16	Malta	4	.178
17	Latvia	5	.149
18	Lithuania	4	.087
19	Slovakia	4	.089
20	Poland	4	.031
21	Estonia	4	.061
22	Czech republic	4	.237
23	Italy	4	.104
24	Bulgaria	3	.115
25	Romania	3	.071
26	Greece	3	.121

<sup>1</sup> excluding Luxemburg due to lack of FBS data



**Table 2: Distances between Final Cluster Centers**

Cluster	1	2	3	4	5
1		.445	1.598	1.045	.715
2	.445		1.154	.601	.272
3	1.598	1.154		.553	.887
4	1.045	.601	.553		.338
5	.715	.272	.887	.338	

**Table 3: Variable means for each cluster (significant variables only)**

	Variable means per cluster				
	1	2	3	4	5
Ratio energy V/A	1.74	2.19	3.33	2.78	2.45
Cereals (en%)	.251	.265	.375	.327	.251
Vegetables (en%)	.021	.022	.035	.022	.027
Meat (en%)	.134	.114	.087	.096	.112
animal fats (en%)	.079	.079	.020	.057	.044
fish/seafood (en%)	.018	.006	.005	.015	.016

**Table 4: ANOVA**

	Cluster		Error		F	Sig. <sup>1</sup>
	Mean Square	df	Mean Square	df		
Ratio energy V/A	1.401	4	.011	21	125.350	.000
Cereals (en%)	.012	4	.002	21	6.598	.001
Vegetables (en%)	.000	4	.000	21	3.513	.024
Meat (en%)	.001	4	.000	21	3.556	.023
animal fats (en%)	.003	4	.001	21	3.500	.024
fish/seafood (en%)	.000	4	.000	21	3.742	.019

<sup>1</sup> The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

For more information, please refer to references such as:

- Cluster Analysis Reference Manual, Stata Press, 2003
- MacKay DJC. Information theory, inference, and learning algorithms. Cambridge University Press, 2003. <http://www.inference.phy.cam.ac.uk/mackay/itila/>
- Clatworthy, J., Buick, D., Hankins, M., Weinman, J., & Horne, R. (2005). The use and reporting of cluster analysis in health psychology: A review. *British Journal of Health Psychology* 10: 329-358.
- [Thorndike](#) RL. "Who Belong in the Family?". *Psychometrika*, 1953; **18**: (4).

## 4 CHAPTER 5, ANNEX 1: DESCRIPTION OF THE CAPRI MODEL

### 4.1 General system layout

The CAPRI (Common Agricultural Policy Regionalised Impact) modelling system is an agricultural sector model linking non-linear mathematical programming models for about 250 regions covering the whole of EU-25, Norway, Bulgaria, and Romania with a global market model for agricultural products.<sup>2</sup> Since the start of this modelling system in 1996, the model has seen a number of important advancements in scope and methodology reflected in the ever broader use of the model as for example for trade and CAP reform policy scenarios (Wieck and Wahl 2005, Britz et al. 2005a, Adenaueer 2005), baseline projections for the European Commission and the calculation of land use, biophysical, environmental and greenhouse gas emission indicators (Kempen et al. 2005, Pérez Domínguez 2006). The last major revision covered the current implementation strategies regarding decoupling and type of premium regimes for different Member States (MS), a re-specification of countries, products and policies (tariffs, trade preferences) in the global market module, and an expansion of the model to the new EU MS. In this paper, this thoroughly revised model is applied and its main characteristics as well as the integration of the global trade model with the regional impact analysis are explained in further detail.

This model is as a complex projection and simulation tool for the agricultural sector based on:

- An activity-based breakdown of regional agricultural production (39 crop and 19 animal activities) and farm and market balances (60 products and 35 inputs).
- A physical consistency framework covering balances for agricultural area, young animals, feed requirements for animals and nutrient requirements for crops. These requirement functions are modelled as constraints in the regional supply models.
- Economic accounting principles according to the definition of the European Accounts of Agriculture (EAA). All outputs and inputs in the national agricultural accounting systems are included, and revenues and costs are broken down consistently by regions and by production activities.
- A detailed policy description. The regional supply models capture all relevant payment schemes with their respective ceilings as well as set aside obligations and sales quotas. The market component includes tariffs, tariff rate quotas, intervention purchases, and subsidised exports.
- Behavioural functions and allocation mechanisms strictly in line with micro-economic theory. Functional forms are chosen to be globally well-behaved, allowing for a consistent welfare analysis.

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<sup>2</sup> The CAPRI modelling system is maintained, applied and further developed by a network of European researchers coordinated by the University of Bonn. It is mainly funded by EU research projects. Further information can be found at: [http://www.agp.uni-bonn.de/agpo/rsrch/capri/capri\\_e.htm](http://www.agp.uni-bonn.de/agpo/rsrch/capri/capri_e.htm).

## 4.2 Agricultural Markets in an Open Economy: Market Module

### 4.2.1 Model Layout

Price interactions between the EU-25 countries and 17 other countries or country blocks<sup>3</sup> are taken into account through the market module, a recursive-dynamic<sup>4</sup>, static<sup>5</sup>, spatial constrained equations system for about 40 primary and secondary agricultural products. The model belongs to the class of multi-commodity models that represent a reduced form of a welfare maximization problem (Takayama and Judge 1971). The behavioural representation of endogenous supply, human consumption, feed, and processing demand is modelled by flexible functions that exhibit all relevant regularity conditions of microeconomic theory. Hence, we assume profit maximisation for producers and processing entities as well as utility maximisation on the demand side. Marketing balances, price transmission functions, and the modelling of a wide variety of trade policies complete the equation system. The most relevant behavioural equations are presented in the following. The data for the market module arise from the supply and utilisation accounts of the FAO (see Britz et al. 2005b).

*Supply* for each agricultural output and region  $r$  is modelled by a supply function derived from a normalised quadratic profit function via the envelope theorem. Supply ( $supply_{j,r}$ ) depends on producer prices ( $Ppri_{j,r}$ ) normalised with a price index ( $Pindex_r$ ):

$$supply_{j,r} = as_{j,r} + \sum_k bs_{j,k,r} \frac{Ppri_{k,r}}{Pindex_r} \quad (1)$$

where  $as_{j,r}$  and  $bs_{j,k,r}$  are the constant and slope terms of the function (the latter captures own and cross-price effects,  $k=j$  and  $k \neq j$  respectively).

The system for *feed demand* is identically structured. However, not producer prices but raw product prices determined by the Armington top level aggregator ( $ArmlP_{k,r}$ ) combined with changes in the supply of animal products ( $supply_j$ ) weighed with feed use factors  $w_j$  determine feed demand ( $feed_{j,r}$ ):

$$feed_{j,r} = \left( af_{j,r} + \sum_k bf_{j,k,r} \frac{ArmlP_{k,r}}{Pindex_r} \right) \sum_{j(=anim)} w_j \frac{supply_j}{supply_j^{cal}} \quad (2)$$

where  $af_{j,r}$  and  $bf_{j,k,r}$  are the constant and slope terms of the function, and  $supply_j^{cal}$  is the supply of animal products at the calibration point.

Marshallian demand function for product  $j$  (alias  $j'$ ) in region  $r$  are derived from a Generalised Leontief indirect utility function and used to represent *human consumption* ( $hcom_{j,r}$ ). The demand functions depend on own and cross consumer prices ( $cpri_{j,r}$ ), and per capita income ( $y_r$ ). They are calibrated on per head consumption, and hence multiplied with the population ( $pop_r$ ) in each region in order to represent total demand.

<sup>3</sup> Trade blocks in the model are: EU-15, EU-10, Bulgaria & Romania, Rest of Europe, USA, Canada, Mexico, MERCOSUR countries, Rest of South America, India, China, Japan, Rest of Asia, Australia & New Zealand, Mediterranean countries, Least Developed Countries, ACP countries and Rest of the World. The EU-15, EU-10, MERCOSUR and Mediterranean countries feature behavioural equations at single country level.

<sup>4</sup> Currently, the recursive-dynamic feature is only captured through a partial adjustment approach on the supply side.

<sup>5</sup> It is static since no stochastic effects are considered.

$$hcom_{j,r} = pop_r \left[ d_{j,r} + \frac{\sum_{j'} bd_{j,j',r} \sqrt{cpri_{j',r}/cpri_{j,r}}}{\sum_{j'} \sum_k bd_{j',k,r} \sqrt{cpri_{j',r} cpri_{k,r}}} \left( y_r - \sum_{j'} d_{j',r} cpri_{j',r} \right) \right] \quad (3)$$

Regularity of the demand functions is ensured in the calibration process with restrictions enforcing adding-up, homogeneity of degree zero in prices, symmetry and the correct curvature of the parameter matrix  $bd$ .  $d$  represents a shift parameter.

*Processing of oilseeds* is modelled using behavioural functions that are derived from a normalised quadratic profit function under the assumption of a fixed input/output relation between seeds, cakes and oils. *Processing of dairy products* is also based on a normalised quadratic function that is driven by the regional differences between the market price and the value of its fat and protein content. Additionally, balancing equations for fat and protein are included in order to ensure that the processing sector makes use of the exact amount of fat and protein contained in the raw milk.

Substitution between non-homogeneous goods is modelled based on the Armington assumption (Armington 1969). This allows reflecting trade preferences for certain regions that cannot be observed in a net-trade model. A two stage Armington system is adopted: on the *top level*, total demand for product  $j$  is divided into total imports and domestic sales from origins  $r$  ( $r=r'$ ) ( $Arm1_{j,r}$ ) and, on the *lower level*, substitution between different import origins are determined ( $Arm2_{j,r}$ ) using Constant Elasticity of Substitution functions (CES).

$$Arm1_{j,r} = sp1_{j,r} \left[ dp_{j,r,r'} Arm2_{j,r}^{-\rho1} + dp_{j,r,r} DSales_{j,r}^{-\rho1} \right]^{-1/\rho1} \quad (4)$$

$$Arm2_{j,r} = sp2_{j,r} \left[ \sum_s dp_{j,r,r'} Streams_{j,r,r'}^{-\rho2} \right]^{-1/\rho2} \quad (5)$$

**Arm1** = Armington 1 aggregate for product  $j$  and region  $r$  ( $r$  alias  $r'$ )

**Arm2** = Armington 2 aggregate (aggregate of imported products)

**DSales** = Domestic production sold

**Streams** = Imports from different origins

**sp1, sp2** = shift parameters

**dp** = share parameters

**$\rho1, \rho2$**  = parameters related to substitution elasticities the respective Armington aggregates

As reflected in

Table 5:, substitution elasticities are in many cases set to rather high values. It is assumed that substitution between imports from different origins is generally stronger than substitution between imports and domestically produced goods. This is rationalized on the basis that consumers are more indifferent toward the different sources of imported goods compared to the choice between imported or domestic products.<sup>6</sup>

<sup>6</sup> A sensitivity analysis for the Armington elasticities can be found in Britz (2005).

**Table 5: Substitution elasticities for the CES-nesting in the Armington approach**

<b>Product</b>	<b>Substitution elasticity between import flows</b>	<b>Substitution elasticity between imports and domestic sales</b>
Generally	10	5
Meats, Butter	6	4 (beef for the EU-15: 2)
Cheese, Fresh milk products	4	2
Japan, all products	5	2.5
Fruits and vegetables for Mediterranean countries, rice for the EU	0.8	0.5

Source: CAPRI Modelling System

#### **4.2.2 Policy and Tariff Representation**

The outlay of the spatial multi-commodity market module allows the integration of all types of market support and trade policy instruments separated by trading blocks and if necessary, on a bilateral basis.

For the EU-25, a more explicit representation of intervention sales and subsidised exports under the WTO commitments is realised. Tariff rate quotas (TRQs), intervention sales, and subsidised exports under the WTO commitments are explicitly modelled for the EU-25. TRQs in the model are either allocated to specific trading partners or open to any imports. Tariffs and imports under TRQs in the model are endogenous, so that regime switches from underfilled to binding and to over-quota imports and vice-versa along with the resulting changes in tariffs are modelled endogenously. Additionally, the model captures the remaining flexible levies in cereal markets and safeguards for sugar and rice for the EU.

Policy instruments for the other regional aggregates in the market module include bilateral tariffs, TRQs, and producer or consumer subsidy equivalent price wedges (PSE/CSE) to capture domestic policies. Policy information data of these regions is based on OECD data as used in the AGLINK model, WTO schedules, and the AMAD tariff data base.

Tariffs are selected out of AMAD data base<sup>7</sup>. Bound rates and applied rates are available as yearly series up to the year 2004. Applied rates after the year 2004 were set to the minimum of the bound rate and the 2004 rate.

## 4.3 Regional Representation of the Agricultural Sector: Supply Module

### 4.3.1 Design of the Regional Supply Models

In the supply component of CAPRI, regional agricultural supply of crops and animal outputs<sup>8</sup> is modelled by an aggregated profit function approach under a limited number of constraints: land, policy restrictions, grass and arable land<sup>9</sup>, crop fertiliser restrictions, and feeding restrictions based on requirement functions. The underlying methodology assumes a two-stage decision process. In the *first stage*, producers determine optimal variable input coefficients per hectare or head for given yields. Nutrient requirements enter the supply models as constraints and all other variable inputs, together with their prices, define the accounting cost matrix. In the *second stage*, the profit-maximising mix of crop and animal activities is determined simultaneously with cost-minimisation of feed and fertiliser use in the supply models.

$$\begin{aligned} \max_{x_i \geq 0} \quad \pi &= \sum_{i=1}^n mg_i x_i \\ s.t. \quad \sum_{l=1}^m a_{li} x_i &\leq b_l \quad [\lambda] \end{aligned} \tag{6}$$

$\pi$  = objective function (agricultural income)

$x_i$  = production level of activity  $i$

$b_l$  = level of constraint  $l$  (physical or economic)

$mg_i$  = gross margin of activity  $i$  (revenues plus premiums minus costs)

$n, m$  = number of activities and constraints respectively

$a_{li}$  = matrix of coefficients which link constraints and activities

$\lambda_l$  = marginal value or 'price' associated with the constraint  $l$

<sup>7</sup> In order to arrive at the product definition of CAPRI (HS2 to HS3), we use two equally weighted aggregation algorithms: *import weighted tariff averages* (which shows the representativity of the tariff line in a specific country or trade block) and *world-trade weighted averages* (which shows the representativity of the tariff line in the overall world trade).

<sup>8</sup> Activities in the model: soft wheat, durum wheat, rye, barley, oats, grain maize, other cereals, paddy rice, rape, sunflower, soya, olives for oil, other oils, pulses, potatoes, sugar beet, flax & hemp, tobacco, other industrial crops, tomatoes, other vegetables, apples & pears & peaches, other fruits, citrus fruits, table grapes, table olives, wine, nurseries, flowers, other crops, fodder maize, fodder root crops, other fodder on arable land, non-food production on set-aside, fallow land, obligatory set-aside, voluntary set-aside, grass & grazings extensive, grass & grazings intensive, suckler cows, heifers breeding, calves fattening male, calves fattening female, calves raising male, calves raising female, pigs for fattening, sows, sheep and goat for milk, sheep and goat for fattening, laying hens, poultry fattening, other animals, dairy cows low yield, dairy cows high yield, male adult fattening low final weight, male adult fattening high final weight, heifers fattening low final weight and heifers fattening high final weight.

<sup>9</sup> Agricultural land is considered a fixed resource in the model and is divided in arable land and grassland. It is distributed according to cropping shares. Crop rotations are not explicitly considered a restriction in the model, however, there is a steering mechanism for land allocation: land rents react to prices prevailing in a certain scenario. Fallow land is included as "closure" activity (e.g. if soft wheat premiums decrease, soft wheat area will decrease and other substitutive activities and non-cultivated land will increase).

The simulation interaction of the activities is mainly due to resource and policy constraints since the aggregate profit function does not comprise inter-activity terms. Hence, in the optimum, the Kuhn-Tucker first order conditions of the programming model ensure that marginal revenue (consisting of market revenues and premiums) are equal to marginal costs. The marginal costs include accounting costs, opportunity costs of binding resources, and a non-linear cost component derived from a PMP based approach (see Heckeley and Britz 2005). The non-linear cost term covers the supply effect of all factors not explicitly handled by the restriction such as capacity constraints, rotational effects, or reduced from risk representation and aggregation errors (Heckeley 2002). The calibration of the cost parameters ensure that observed base year activity levels satisfy the conditions for optimal land allocation given shadow prices of land and prior information on supply elasticities. All data in the supply module is based on EUROSTAT.

Production costs for each activity are calculated using the information contained in the FADN and EAA databases<sup>10</sup>. The EAA provide information about the national input demand whereas the FADN data base is used to gather information about regional distribution of the input use and related costs. The final cost coefficients are estimated using Bayesian Highest Posterior Density estimation and cross-entropy frameworks. In doing so, additional restrictions ensure that the national accounts for input expenditures are met (HECKELEI ET AL. 2005). The feed input requirements of animals are calibrated by using entropy estimation techniques (BRITZ ET AL. 1999) and are based on yield and age variables derived from animal production engineering knowledge (see NASUELLI ET AL. 1997). Crude protein and net energy intake model estimates are validated in PÉREZ DOMÍNGUEZ 2006, pp. 54-59.

#### **4.3.2 Modelling of CAP Domestic Support**

A detailed modelling component allows for the definition of payment schemes linked to output or activity levels in combination with ceilings in physical (hectare or head) and/or value terms. Both, output and activity level can be based on current or historic data and payments may differ across MS and NUTS 2 regions. If the updating of the premiums between iterations result in a premium sum or number of eligible hectares/heads that overshoots the ceilings, premiums are cut proportionally in order to meet the obligations. In addition, this activity based, regionalised approach allows for the introduction of different decoupling options, i.e. regional flat rate, dynamic regional flat rate, or farm specific payments.

#### **4.3.3 Linking of the two Modules**

The two modules presented are stand-alone policy models in their own right. However, given the objective of the CAPRI modelling system to provide a rich, regionally differentiated EU policy analysis that accounts for the role of the EU as an important, price setting player in the global market (“large country assumption”), a mechanism has to be found to combine these two models. This is necessary since the simultaneous solution for endogenous supply and prices of an integrated version of the two modules is technically impossible.<sup>11</sup> Hence, the supply and the market module are linked by an iterative procedure where supply and feed demand as they result from the supply module are approximated in each iteration of the market module. This allows for model

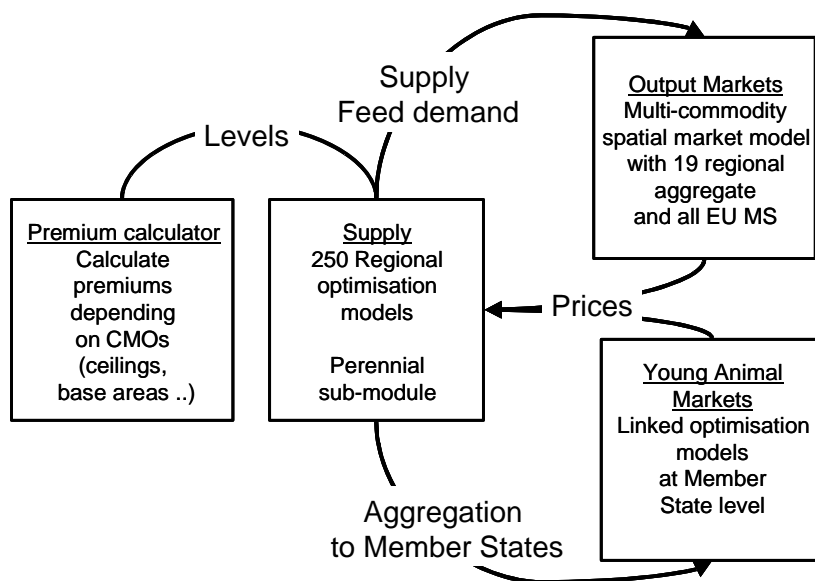
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<sup>10</sup> The European Accounts of Agriculture can be freely accessed at the EUROSTAT web site: [http://epp.eurostat.ec.europa.eu/portal/page?\\_pageid=2353,47212687&\\_dad=portal&\\_schema=PORTAL](http://epp.eurostat.ec.europa.eu/portal/page?_pageid=2353,47212687&_dad=portal&_schema=PORTAL) accessed on 19.07.2006. Data on farm typologies are released by the FADN unit only for specific purposes and under strict contractual conditions.

<sup>11</sup> The global trade model already contains around 26000 variables. Each of the programming models adds another 1000 variables.

convergence to market clearing prices and quantities without compromising the specific features of each module.

**Figure 1: Link of modules in CAPRI**



Source: CAPRI Modelling System

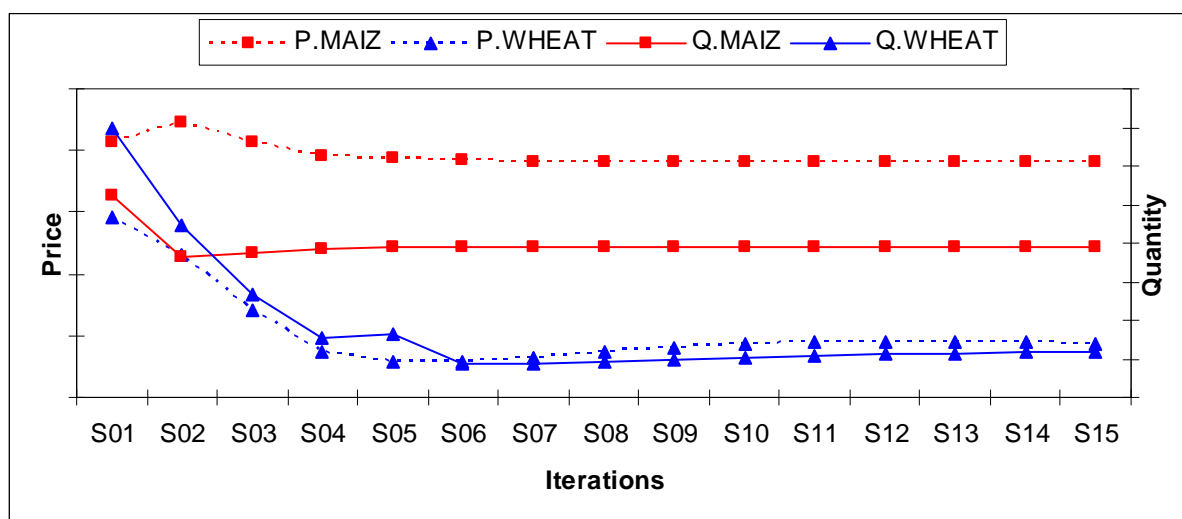
In each iteration, all regional programming models are solved with exogenous prices resulting from the previous iteration of the market module (see Figure 1:).<sup>12</sup> In the next step, the supply and feed demand functions of the market model must be approximated in order to reproduce the aggregated feed and supply results from the regional supply models. This is done by adjusting the intercept of the supply and feed demand functions. Finally, the squared spatial equation system of the market module is solved and the resulting producer prices at MS level transmitted back to the supply module for the following iteration.

In between iterations, premiums for activities are adjusted if ceilings as defined in the CMOs are overshoot. In addition, in an intermediate step, young animal prices are determined. Having solved the regional models, their results (crop areas, herd sizes, input/output coefficients, supply, and demand quantities) are aggregated to MS level programming models and their objective functions calibrated to the results of the supply module using previously described PMP techniques. Young animal prices are determined by linking these calibrated models into a non-spatial EU model with a common market balances for young animals.

<sup>12</sup> Technically, these exogenous prices from the market module are the shadow values of the market clearing balances in the programming models. In the first model iteration, prices from a previous run are used.



**Figure 2: Example for convergence**



Note: Quantities have been scaled with a constant. P = Producer price, Q = EU Total Production.  
Source: CAPRI Modelling System

This iterative procedure is repeated until convergence of price and quantity developments between market and supply module is achieved.

#### 4.4 The Construction of the Baseline Scenario

Ideally, the baseline scenario should capture the most probable development for all exogenous elements of an economic model, and the economic model should create a set of endogenous results in response to these exogenous elements. For bigger systems as CAPRI, complex interrelations between technological, structural and preference changes for agricultural products world-wide, in combination with changes in policies, population and non-agricultural markets, render that a rather demanding exercise. The process can be split up in two elements: defining the exogenous elements, and secondly, generating the endogenous response to that scenario.

In CAPRI a combination of two approaches has been selected for the construction of the baseline, on the one hand expert judgements (consultation on the most likely developments of a specific variable) and on the other hand trend analysis (projection tool). The aim is to provide a baseline used as comparison points or comparison time series for counterfactual analysis. The baseline may be interpreted as a projection in time covering the most probable future development of the European agricultural sector under the status-quo policy and including all future changes already foreseen in the current legislation. Expert data on future trends are obtained from internationally reliable sources doing forecasting research at EU level (Commission of the European Communities) and for non-EU regions and exogenous drivers (FAO and World Bank). This information and own trend projections using time series from the current CAPRI database are fed into a Highest Posterior Density estimator which chooses the most likely combination of forecast value subject to a larger set a consistency restrictions which ensure mutual compatibility between time series and plausibility of results (e.g. closed area and market balances).

A calibration of the regional supply models (non-linear optimization models) to the results of the projection tools requires that first-order conditions are fulfilled in the calibration point. With this purpose, elements not projected so far but entering the constraints of the supply models must be

defined in such way that constraints are feasible and the cost functions of the models must be shifted to balance marginal costs and revenues.

On the market side, the projection results at EU-25 level plus Norway, Bulgaria and Romania are taken as given for calibration. In the calibration step bilateral import and export flows from these countries to other trade blocks are defined, as well as development of agricultural production, feed use, processing activities and human consumption.

**Table 6: Exogenous drivers considered for the baseline construction**

<b>Exogenous drivers</b>	<b>Value</b>
Inflation	1.9 % per annum
Growth of GDP per capita	2.0 % nominal per annum for the EU10, 5 % for India, 1.5 % for USA, 4 % for Russia, 1.5 % for Least Developed countries and ACPs, and 1 % for the rest.
Demographic changes	EUROSTAT projections for Europe and UN projections for the rest of countries in the world
Technical progress	0.5% input savings per annum (affecting exogenous yield trends), with the exemption of N, P, K needs for crops where technical progress is trend forecasted
Domestic Policy	National decisions on coupling options and premium models, with their expected implementation date for the EU25 MSs (25 different premium schemes, compilation by Massot Martí, 2005)
Common Market Organisations	Supply and demand shifted according to the expert forecasts (Commission of the European Communities, 2005)
Trade policy	Final implementation of the 1994 Uruguay round plus some further elements as NAFTA.
World markets	Supply and demand forecasts (FAO, 2003).

Source: CAPRI Modelling System

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## 5 CHAPTER 5, ANNEX2: CORRESPONDENCE TABLE CAPRI – E3IOT

Table 7: List of intermediate products in E3IOT

	<b>E3IOT categories</b>
1	Dairy farm products
2	Poultry and eggs
3	Cattle
4	Pigs
5	Miscellaneous livestock
6	Food grains
7	Feed grains
8	Fruits
9	Tree nuts
10	Vegetables
11	Sugar crops
12	Miscellaneous crops
13	Oil bearing crops
14	Wines, brandy, and brandy spirits
15	Soybean oil mills
16	Vegetables oil mills, n.e.c.
17	Edible fats and oils, n.e.c.
18	Prepared feed n.e.c.

Table 8: List of agricultural primary products in CAPRI

	<b>CAPRI primary products</b>	
1	<b>cereals</b>	wheat
2		rye and meslin
3		barley
4		oats
5		grain maize
6		other cereals
7	<b>oilseeds</b>	rape seed
8		sunflower seed
9		soya seed
10	<b>oils</b>	rape seed oil
11		sunflower seed oil
12		soya oil
13		olive oil
14	<b>oil cakes</b>	rape seed cake
15		sunflower seed cake
16		soya cake
17	<b>other arable field crops</b>	pulses
18		potatoes
19	<b>vegetables and permanent crops</b>	tomatoes
20		other vegetables
21		apples pears and peaches
22		table grapes
23		citrus fruits
24		other fruits

25		table olives
26		table wine
27	<b>meat</b>	beef
28		pork meat
29		sheep and goat meat
30		poultry meat
31	<b>other animal products</b>	eggs
32	<b>dairy products</b>	butter
33		skimmed milk powder
34		cheese
35		fresh milk products
36		cream
37		concentrated milk
38		whole milk powder
39	<b>secondary products</b>	rice milled
40		sugar

Table 9: Bridge Matrix E3IOT to CAPRI (All scenarios)

E3IOT to CAPRI		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
<i>E3IOT</i>		[1]	[2]	[3]	[4]	[5]	[7]	[8]	[11]	[12]	[13]	[14]	[15]	[16]	[187]						Sum
<i>CAPRI</i>		Dairy farm products	Poultry and eggs	Cattle	Pigs	Miscellaneous livestock	Food grains	Feed grains	Fruits	Tree nuts	Vegetables	Sugar crops	Miscellaneous crops	Oil bearing crops	Wines, brandy, and brandy spirits	Soybean oil mills	Vegetables oil mills, n.e.c.	Edible fats and oils, n.e.c.	Prepared feed n.e.c.		
<b>cereals</b>	wheat	0	0	0	0	0	0,6679147	0,3250422	0	0	0	0	0	0	0	0	0	0	0	0	0,992957
	rye and meslin	0	0	0	0	0	0,0501669	0,03135	0	0	0	0	0	0	0	0	0	0	0	0	0,081517
	barley	0	0	0	0	0	0,1192108	0,2513879	0	0	0	0	0	0	0	0	0	0	0	0	0,370599
	oats	0	0	0	0	0	0,0117488	0,0694344	0	0	0	0	0	0	0	0	0	0	0	0	0,081183
	grain maize	0	0	0	0	0	0,1083226	0,2609809	0	0	0	0	0	0	0	0	0	0	0	0	0,369304
	other cereals	0	0	0	0	0	0,0093114	0,0604388	0	0	0	0	0	0	0	0	0	0	0	0	0,07035
<b>oilseeds</b>	rape seed	0	0	0	0	0	0	0	0	0	0	0	0	0,3228328	0	0	0	0	0	0	0,322833
	sunflower seed	0	0	0	0	0	0	0	0	0	0	0	0	0,1400399	0	0	0	0	0	0	0,14004
	soya seed	0	0	0	0	0	0	0	0	0	0	0	0	0,5371273	0	0	0	0	0	0	0,537127
<b>oils</b>	rape seed oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,3804035	0	0	0,380404
	sunflower seed oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,1996116	0	0	0,199612
	soya oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,2069638	0	0	0,206964
	olive oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,2130211	0	0	0,213021
<b>oil cakes</b>	rape seed cake	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,5459308	0	0	0	0,545931
	sunflower seed cake	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,4540692	0	0	0	0,454069
	soya cake	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
<b>other ar</b>	pulses	0	0	0	0	0	0	0	0	0	0	0	0,0184123	0	0	0	0	0	0,3255109	0	0,343923
	potatoes	0	0	0	0	0	0	0	0	0	0	0	0,9815877	0	0	0	0	0	0,6744891	0	1,656077
<b>vegetabl</b>	tomatoes	0	0	0	0	0	0	0	0	0	0,2499346	0	0	0	0	0	0	0	0	0	0,249935
	other vegetables	0	0	0	0	0	0	0	0	0	0,7500654	0	0	0	0	0	0	0	0	0	0,750065
	apples pears and peaches	0	0	0	0	0	0	0	0,2842971	0	0	0	0	0	0	0	0	0	0	0	0,284297
	table grapes	0	0	0	0	0	0	0	0,0569161	0	0	0	0	0	0	0	0	0	0	0	0,056916
	citrus fruits	0	0	0	0	0	0	0	0,3004937	0	0	0	0	0	0	0	0	0	0	0	0,300494
	other fruits	0	0	0	0	0	0	0	0,3582931	0	0	0	0	0	0	0	0	0	0	0	0,358293
	table olives	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	table wine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>meat</b>	beef	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	pork meat	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	sheep and goat meat	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	poultry meat	0	0,6276367	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,627637
<b>other ani</b>	eggs	0	0,3723633	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,372363
<b>dairy pro</b>	butter	0,0342658	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,034266
	skimmed milk powder	0,0175736	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,017574
	cheese	0,123384	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,123384
	fresh milk products	0,763253	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,763253
	cream	0,0373059	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,037306
	concentrated milk	0,017214	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,017214
	whole milk powder	0,0070036	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,007004
<b>seconda</b>	rice milled	0	0	0	0	0	0,0327249	0,0013659	0	0	0	0	0	0	0	0	0	0	0	0	0,034091
	sugar	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
<b>Sum</b>		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

**Table 10: Bridge Matrix CAPRI to E3IOT (Scenario 1)**

E3IOT	CAPRI	Cereals						Oilseeds			Oils			Oil cakes			
		Wheat	Rye and m	Barley	Oats	Grain maize	Other cerea	Rape seed	Sunflower	Soya seed	Rape seed	Sunflower	Soya oil	Olive oil	Rape seed c	Sunflowe s	Soya cake
[11]	Dairy farm products	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[12]	Poultry and eggs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[13]	Cattle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[14]	Pigs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[15]	Miscellaneous livestock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[17]	Food grains	0,2429338	0,19993	0,0690191	0,0257519	0,060946053	0,0249778	0	0	0	0	0	0	0	0	0	0
[18]	Feed grains	0,7565644	0,799537	0,9314019	0,9739355	0,939667865	0,9747102	0	0	0	0	0	0	0	0	0	0
[111]	Fruits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[112]	Tree nuts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[113]	Vegetables	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[114]	Sugar crops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[115]	Miscellaneous crops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[116]	Oil bearing crops	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0
[187]	Wines, brandy, and brandy spirits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Soybean oil mills	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Vegetables oil mills, n.e.c.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
	Edible fats and oils, n.e.c.	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
	Prepared feed n.e.c.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Sum	0,9994982	0,999467	1,0004209	0,9996874	1,000613924	0,9996881	1	1	1	1	1	1	1	1	1	1

Other arable field c		Vegetables and Permanent crops						Meat				Other Ar		Dairy products					Secondary produc					
Pulses	Potatoes	Tomatoes	Other veget	Apples pe	Table grap	Citrus fruit	Other fruits	Table olive	Table wine	Beef	Pork meat	Sheep and	Poultry me	Eggs	Butter	Skimmed	Cheese	Fresh milk	Cream	Concentra	Whole mil	Rice miller	Sugar	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,788434	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,210589	0
0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0,00195	0,0478273	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0,998544	0,9519455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,000493	0,9997728	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0,999023



Table 11: Bridge Matrix CAPRI to E3IOT (Scenario 2)

E3IOT	CAPRI	Cereals						Oilseeds			Oils			Oil cakes			
		Wheat	Rye and m	Barley	Oats	Grain maize	Other cere	Rape seed	Sunflower	Soya seed	Rape seed	Sunflower	Soya oil	Olive oil	Rape seed	Sunflower	Soya cake
[11]	Dairy farm products	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[12]	Poultry and eggs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[13]	Cattle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[14]	Pigs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[15]	Miscellaneous livestock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[17]	Food grains	0,2773494	0,230131	0,081457	0,030647	0,07196796	0,02973	0	0	0	0	0	0	0	0	0	0
[18]	Feed grains	0,7223247	0,769631	0,919271	0,969296	0,927930173	0,970214	0	0	0	0	0	0	0	0	0	0
[111]	Fruits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[112]	Tree nuts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[113]	Vegetables	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[114]	Sugar crops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[115]	Miscellaneous crops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[116]	Oil bearing crops	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0
[187]	Wines, brandy, and brandy spirits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Soybean oil mills	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Vegetables oil mills, n.e.c.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
	Edible fats and oils, n.e.c.	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
	Prepared feed n.e.c.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Sum	0,999674	0,999763	1,000728	0,999943	0,999898133	0,999944	1	1	1	1	1	1	1	1	1	1

Other arable field		Vegetables and Permanent crops						Meat				Other A	Dairy products					Secondary products								
Pulses	Potatoes	Tomatoes	Other vege	Apples	pe	Table grap	Citrus fruit	Other fruit	Table olive	Table wine	Beef	Pork mea	Sheep and	Poultry m	Eggs	Butter	Skimmed	Cheese	Fresh milk	Cream	Concentra	Whole mil	Rice miller	Sugar		
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0,001971	0,048321	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0,998532	0,951448	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,000503	0,999768	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Table 12: Bridge Matrix CAPRI to E3IOT (Scenario 3)

E3IOT	CAPRI							Oilseeds			Oils			Oil cakes			
	Cereals	Cereals	Cereals	Cereals	Cereals	Cereals	Cereals	Rape seed	Sunflower s	Soya seed	Rape seed	Sunflower s	Soya oil	Olive oil	Rape seed c	Sunflowe s	Soja cake
[11] Dairy farm products	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[12] Poultry and eggs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[13] Cattle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[14] Pigs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[15] Miscellaneous livestock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[17] Food grains	0,288514079	0,240082	0,08567921	0,032326	0,0757335	0,0313607											
[18] Feed grains	0,711131236	0,759877	0,9150996	0,9676035	0,9241479	0,9685699											
[111] Fruits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[112] Tree nuts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[113] Vegetables	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[114] Sugar crops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[115] Miscellaneous crops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[116] Oil bearing crops	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0
[187] Wines, brandy, and brandy spirits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Soybean oil mills	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Vegetables oil mills, n.e.c.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Edible fats and oils, n.e.c.	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
Prepared feed n.e.c.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum	0,999645315	0,999958	1,00077881	0,9999295	0,9998813	0,9999305		1	1	1	1	1	1	1	1	1	1

Other arable field cr		Vegetables and Permanent crops							Meat				Other An	Dairy products				Secondary products							
Pulses	Potatoes	Tomatoes	Other veget	Apples	peal	Table grape	Citrus fruits	Other fruits	Table oliv	Table wine	Beef	Pork meat	Sheep and	Poultry me	Eggs	Butter	Skimmed r	Cheese	Fresh milk pi	Cream	Concentra	Whole mil	Rice milled	Sugar	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,824711	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,17434	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0,001975	0,048418	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0,99853	0,95134948	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,000505	0,99976748	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0,999051

## 6 CHAPTER 5, ANNEX 3: FINAL DEMAND VECTORS E3IOT

The next 4 sections give the total expenditure for the EU27 on the around 280 expenditure categories for final consumption. The first gives a baseline expenditure for the year 2003. The 2<sup>nd</sup> to 4<sup>th</sup> give the three scenarios, with changed expenditures on foodstuffs according to the relative changes calculated in Chapter 4, Annex 2. Two variations are shown:

- Without 1<sup>st</sup> order effect: expenditure of non-food items is not impacted by changes in expenditure on food.
- With 1<sup>st</sup> order effects: expenditures of non-food items are adjusted in such a way that despite the higher or lower price of the new food basket, the total expenditure for all categories together stays the same.

:

## 6.1 Scenario 0, 1, 2 and 3 - All

e3iot categories	Scenario 0 – All	Scenario 1 - All	Scenario 2 - All	Scenario 3 - All
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Dairy farm products	0.29	0.29	0.29	0.26
Poultry and eggs	6.87	6.87	6.87	6.46
Miscellaneous livestock	3.79	3.79	1.59	1.56
Feed grains	0.43	0.43	0.43	0.43
Fruits	9.96	12.53	12.53	11.82
Tree nuts	0.95	0.95	2.39	1.54
Vegetables	18.00	21.14	21.14	21.97
Miscellaneous crops	0.00	0.00	0.00	0.00
Oil bearing crops	0.17	0.17	0.17	0.22
Greenhouse and nursery products	12.30	14.44	14.44	15.01
Forestry products	6.73	6.73	6.73	6.73
Commercial fishing	5.90	7.01	7.01	11.53
Agricultural, forestry, and fishery services	0.35	0.35	0.35	0.35
Coal	0.06	0.06	0.06	0.06
Crude petroleum and natural gas	1.74	1.74	1.74	1.74
Chemical and fertilizer minerals	0.02	0.02	0.02	0.02
New residential 1 unit structures, nonfarm	149.00	149.00	149.00	149.00
New residential 2-4 unit structures, nonfarm	3.47	3.47	3.47	3.47
New additions & alterations, nonfarm, construction	74.10	74.10	74.10	74.10
New residential garden and high-rise apartments construction	28.30	28.30	28.30	28.30
New highways, bridges, and other horizontal construction	0.44	0.44	0.44	0.44
New farm residential construction	3.70	3.70	3.70	3.70
Maintenance and repair of farm and nonfarm residential structures	35.40	35.40	35.40	35.40
Small arms	0.25	0.25	0.25	0.25
Small arms ammunition	0.18	0.18	0.18	0.18
Beef packing plants	24.30	22.09	14.51	10.02
Sausages and other prepared beef products	10.20	9.27	0.00	4.20
Pork packing plants	25.60	23.76	15.56	10.55
Sausages and other prepared pork products	10.70	9.93	0.00	4.41
Poultry slaughtering and processing	41.00	41.00	50.84	52.84
Creamery butter	2.06	1.20	1.20	1.08

e3iot categories	Scenario 0 – All	Scenario 1 - All	Scenario 2 - All	Scenario 3 - All
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Natural, processed, and imitation cheese	21.80	21.80	21.80	19.78
Dry, condensed, and evaporated dairy products	8.27	8.27	8.27	7.50
Ice cream and frozen desserts	2.11	1.82	1.82	1.62
Fluid milk	27.40	27.40	27.40	24.86
Canned and cured fish and seafoods	6.85	8.14	8.14	13.39
Canned specialties	1.89	1.89	1.89	1.89
Canned fruits, vegetables, preserves, jams, and jellies	7.61	6.57	6.57	5.84
Dehydrated fruits, vegetables, and soups	2.45	3.08	3.08	2.91
Pickles, sauces, and salad dressings	1.84	1.84	1.84	1.84
Prepared fresh or frozen fish and seafoods	9.22	10.96	10.96	18.02
Frozen fruits, fruit juices, and vegetables	12.00	14.65	14.65	14.24
Frozen specialties, n.e.c.	3.70	3.70	3.70	3.70
Flour and other grain mill products	1.23	1.29	1.36	1.41
Cereal breakfast foods	9.21	9.69	10.19	10.55
Prepared flour mixes and doughs	6.12	6.44	6.77	7.01
Dog and cat food	5.65	5.65	5.65	5.65
Prepared feeds, n.e.c.	1.15	1.15	1.15	1.15
Bread, cake, and related products	27.40	28.82	30.31	31.39
Cookies and crackers	10.70	10.70	10.70	12.26
Frozen bakery products, except bread	3.61	3.80	3.99	4.14
Sugar	1.65	1.42	1.42	1.27
Chocolate and cocoa products	0.54	0.47	0.47	0.42
Salted and roasted nuts and seeds	0.78	0.78	1.71	1.21
Candy and other confectionery products	10.50	9.06	9.06	8.05
Malt beverages	9.99	9.99	9.99	9.20
Wines, brandy, and brandy spirits	15.60	15.60	15.60	14.37
Distilled and blended liquors	3.93	3.93	3.93	3.62
Bottled and canned soft drinks	18.40	15.88	15.88	14.11
Flavoring extracts and flavoring syrups, n.e.c.	3.03	2.62	2.62	2.32
Roasted coffee	11.20	11.20	11.20	11.20
Edible fats and oils, n.e.c.	16.30	19.27	19.59	22.92
Manufactured ice	0.19	0.16	0.16	0.14
Macaroni, spaghetti, vermicelli, and noodles	1.30	1.37	1.44	1.49

e3iot categories	Scenario 0 – All	Scenario 1 - All	Scenario 2 - All	Scenario 3 - All
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Potato chips and similar snacks	12.70	12.70	12.70	12.16
Food preparations, n.e.c.	5.27	5.27	5.27	5.27
Cigarettes	34.70	34.70	34.70	34.70
Cigars	1.25	1.25	1.25	1.25
Chewing and smoking tobacco and snuff	1.97	1.97	1.97	1.97
Carpets and rugs	8.20	8.20	8.20	8.20
Cordage and twine	0.16	0.16	0.16	0.16
Nonwoven fabrics	0.93	0.93	0.93	0.93
Textile goods, n.e.c.	0.04	0.04	0.04	0.04
Women's hosiery, except socks	2.48	2.48	2.48	2.48
Hosiery, n.e.c.	1.62	1.62	1.62	1.62
Apparel made from purchased materials	57.20	57.20	57.20	57.20
Curtains and draperies	3.05	3.05	3.05	3.05
Housefurnishings, n.e.c.	7.63	7.63	7.63	7.63
Textile bags	0.33	0.33	0.33	0.33
Canvas and related products	0.82	0.82	0.82	0.82
Pleating and stitching	1.40	1.40	1.40	1.40
Automotive and apparel trimmings	3.89	3.89	3.89	3.89
Schiffli machine embroideries	0.10	0.10	0.10	0.10
Fabricated textile products, n.e.c.	4.41	4.41	4.41	4.41
Mobile homes	1.23	1.23	1.23	1.23
Wood products, n.e.c.	0.48	0.48	0.48	0.48
Wood household furniture, except upholstered	11.20	11.20	11.20	11.20
Household furniture, n.e.c.	0.42	0.42	0.42	0.42
Wood television and radio cabinets	0.02	0.02	0.02	0.02
Upholstered household furniture	7.73	7.73	7.73	7.73
Metal household furniture	2.26	2.26	2.26	2.26
Mattresses and bedsprings	4.22	4.22	4.22	4.22
Wood office furniture	3.63	3.63	3.63	3.63
Wood partitions and fixtures	4.86	4.86	4.86	4.86
Partitions and fixtures, except wood	6.61	6.61	6.61	6.61
Draperies hardware and window blinds and shades	2.28	2.28	2.28	2.28
Furniture and fixtures, n.e.c.	4.16	4.16	4.16	4.16

e3iot categories	Scenario 0 – All	Scenario 1 - All	Scenario 2 - All	Scenario 3 - All
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Envelopes	0.20	0.20	0.20	0.20
Sanitary paper products	7.79	7.79	7.79	7.79
Paper coating and glazing	0.50	0.50	0.50	0.50
Bags, except textile	1.22	1.22	1.22	1.22
Stationery, tablets, and related products	0.18	0.18	0.18	0.18
Converted paper products, n.e.c.	0.82	0.82	0.82	0.82
Paperboard containers and boxes	0.29	0.29	0.29	0.29
Newspapers	10.30	10.30	10.30	10.30
Periodicals	9.71	9.71	9.71	9.71
Book publishing	12.90	12.90	12.90	12.90
Miscellaneous publishing	1.28	1.28	1.28	1.28
Commercial printing	0.36	0.36	0.36	0.36
Blankbooks, looseleaf binders and devices	0.27	0.27	0.27	0.27
Greeting cards	1.55	1.55	1.55	1.55
Nitrogenous and phosphatic fertilizers	2.00	2.00	2.00	2.00
(Household use of) pesticides and agricultural chemicals, n.e.c.	12.00	12.00	12.00	12.00
Gum and wood chemicals	1.72	1.72	1.72	1.72
Adhesives and sealants	0.35	0.35	0.35	0.35
Chemicals and chemical preparations, n.e.c.	0.79	0.79	0.79	0.79
Drugs	24.30	24.30	24.30	24.30
Soap and other detergents	5.96	5.96	5.96	5.96
Polishes and sanitation goods	0.88	0.88	0.88	0.88
Toilet preparations	12.60	12.60	12.60	12.60
Paints and allied products	0.15	0.15	0.15	0.15
Lubricating oils and greases	1.01	1.01	1.01	1.01
Products of petroleum and coal, n.e.c.	0.01	0.01	0.01	0.01
Rubber and plastics footwear	1.81	1.81	1.81	1.81
Fabricated rubber products, n.e.c.	1.58	1.58	1.58	1.58
Miscellaneous plastics products, n.e.c.	6.54	6.54	6.54	6.54
Rubber and plastics hose and belting	0.30	0.30	0.30	0.30
Gaskets, packing, and sealing devices	0.15	0.15	0.15	0.15
Boot and shoe cut stock and findings	0.00	0.00	0.00	0.00
Shoes, except rubber	3.56	3.56	3.56	3.56

e3iot categories	Scenario 0 – All	Scenario 1 - All	Scenario 2 - All	Scenario 3 - All
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
House slippers	0.26	0.26	0.26	0.26
Leather gloves and mittens	0.10	0.10	0.10	0.10
Luggage	1.29	1.29	1.29	1.29
Women's handbags and purses	0.20	0.20	0.20	0.20
Personal leather goods, n.e.c.	0.33	0.33	0.33	0.33
Leather goods, n.e.c.	0.29	0.29	0.29	0.29
Glass and glass products, except containers	1.78	1.78	1.78	1.78
Glass containers	0.14	0.14	0.14	0.14
Vitreous china table and kitchenware	0.09	0.09	0.09	0.09
Fine earthenware table and kitchenware	0.10	0.10	0.10	0.10
Pottery products, n.e.c.	0.51	0.51	0.51	0.51
Concrete products, except block and brick	0.00	0.00	0.00	0.00
Cut stone and stone products	0.07	0.07	0.07	0.07
Abrasive products	0.08	0.08	0.08	0.08
Minerals, ground or treated	0.07	0.07	0.07	0.07
Nonmetallic mineral products, n.e.c.	0.05	0.05	0.05	0.05
Steel wiredrawing and steel nails and spikes	0.00	0.00	0.00	0.00
Primary metal products, n.e.c.	0.02	0.02	0.02	0.02
Nonferrous wiredrawing and insulating	0.03	0.03	0.03	0.03
(Household heating with) heating equipment, except electric and warm a furnaces	58.30	58.30	58.30	58.30
Prefabricated metal buildings and components	0.01	0.01	0.01	0.01
Screw machine products, bolts, etc.	0.04	0.04	0.04	0.04
Crowns and closures	0.01	0.01	0.01	0.01
Metal stampings, n.e.c.	0.39	0.39	0.39	0.39
Cutlery	0.60	0.60	0.60	0.60
Hand and edge tools, except machine tools and handsaws	0.41	0.41	0.41	0.41
Saw blades and handsaws	0.15	0.15	0.15	0.15
Hardware, n.e.c.	0.12	0.12	0.12	0.12
Miscellaneous fabricated wire products	0.11	0.11	0.11	0.11
Steel springs, except wire	0.01	0.01	0.01	0.01
Pipe, valves, and pipe fittings	0.48	0.48	0.48	0.48
Metal foil and leaf	0.17	0.17	0.17	0.17
Fabricated metal products, n.e.c.	0.32	0.32	0.32	0.32



e3iot categories	Scenario 0 – All	Scenario 1 - All	Scenario 2 - All	Scenario 3 - All
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Internal combustion engines, n.e.c.	0.38	0.38	0.38	0.38
Lawn and garden equipment	0.82	0.82	0.82	0.82
Power-driven handtools	0.54	0.54	0.54	0.54
Blowers and fans	0.85	0.85	0.85	0.85
Scales and balances, except laboratory	0.57	0.57	0.57	0.57
Calculating and accounting machines	0.43	0.43	0.43	0.43
(use of) Electronic computers	13.70	13.70	13.70	13.70
(use of) Computer peripheral equipment	10.00	10.00	10.00	10.00
Office machines, n.e.c.	0.40	0.40	0.40	0.40
(use of) Household cooking equipment	13.70	13.70	13.70	13.70
(use of) Household refrigerators and freezers	21.60	21.60	21.60	21.60
(Washing with) household laundry equipment	31.90	31.90	31.90	31.90
(use of) Electric housewares and fans	3.29	3.29	3.29	3.29
(use of) Household vacuum cleaners	4.02	4.02	4.02	4.02
(use of) Household appliances, n.e.c.	22.00	22.00	22.00	22.00
(use of) Electric lamp bulbs and tubes	13.90	13.90	13.90	13.90
Lighting fixtures and equipment	0.56	0.56	0.56	0.56
Wiring devices	0.01	0.01	0.01	0.01
(use of) Household audio and video equipment	17.40	17.40	17.40	17.40
Prerecorded records and tapes	0.74	0.74	0.74	0.74
(use of) Telephone and telegraph apparatus	2.74	2.74	2.74	2.74
(use of) Communication equipment	2.68	2.68	2.68	2.68
Other electronic components	0.08	0.08	0.08	0.08
Storage batteries	0.71	0.71	0.71	0.71
Primary batteries, dry and wet	0.75	0.75	0.75	0.75
Magnetic and optical recording media	0.31	0.31	0.31	0.31
Truck and bus bodies	3.65	3.65	3.65	3.65
Truck trailers	0.88	0.88	0.88	0.88
(Driving with) motor vehicles and passenger car bodies	220.00	220.00	220.00	220.00
Aircraft	3.04	3.04	3.04	3.04
Aircraft and missile engines and engine parts	0.64	0.64	0.64	0.64
Ship building and repairing	0.28	0.28	0.28	0.28
Boat building and repairing	0.82	0.82	0.82	0.82

e3iot categories	Scenario 0 – All	Scenario 1 - All	Scenario 2 - All	Scenario 3 - All
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Motorcycles, bicycles, and parts	5.23	5.23	5.23	5.23
Travel trailers and campers	0.36	0.36	0.36	0.36
Motor homes	0.45	0.45	0.45	0.45
Transportation equipment, n.e.c.	0.54	0.54	0.54	0.54
Search and navigation equipment	9.89	9.89	9.89	9.89
Watches, clocks, watchcases, and parts	0.22	0.22	0.22	0.22
Instruments to measure electricity	4.01	4.01	4.01	4.01
Ophthalmic goods	5.31	5.31	5.31	5.31
Photographic equipment and supplies	3.56	3.56	3.56	3.56
Jewelry, precious metal	1.59	1.59	1.59	1.59
Jewelers' materials and lapidary work	1.07	1.07	1.07	1.07
Silverware and plated ware	0.08	0.08	0.08	0.08
Costume jewelry	0.38	0.38	0.38	0.38
Musical instruments	0.90	0.90	0.90	0.90
Games, toys, and children's vehicles	2.53	2.53	2.53	2.53
Dolls and stuffed toys	0.41	0.41	0.41	0.41
Sporting and athletic goods, n.e.c.	2.39	2.39	2.39	2.39
Pens, mechanical pencils, and parts	0.37	0.37	0.37	0.37
Lead pencils and art goods	0.17	0.17	0.17	0.17
Marking devices	0.01	0.01	0.01	0.01
Carbon paper and inked ribbons	0.02	0.02	0.02	0.02
Fasteners, buttons, needles, and pins	0.05	0.05	0.05	0.05
Brooms and brushes	18.00	18.00	18.00	18.00
Signs and advertising specialties	1.88	1.88	1.88	1.88
Railroads and related services	9.78	9.78	9.78	9.78
Local and suburban transit and interurban highway passenger transportation	16.80	16.80	16.80	16.80
Trucking and courier services, except air	1.21	1.21	1.21	1.21
Warehousing and storage	0.13	0.13	0.13	0.13
Water transportation	1.64	1.64	1.64	1.64
Air transportation	9.30	9.30	9.30	9.30
Arrangement of passenger transportation	0.19	0.19	0.19	0.19
Telephone, telgraph communications, and communications services n.e.c.	90.10	90.10	90.10	90.10

e3iot categories	Scenario 0 – All	Scenario 1 - All	Scenario 2 - All	Scenario 3 - All
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Cable and other pay television services	12.10	12.10	12.10	12.10
Radio and TV broadcasting	1.40	1.40	1.40	1.40
Water supply and sewerage systems	21.00	21.00	21.00	21.00
Banking	4.92	4.92	4.92	4.92
Credit agencies other than banks	1.18	1.18	1.18	1.18
Security and commodity brokers	3.89	3.89	3.89	3.89
Insurance carriers	119.00	119.00	119.00	119.00
Real estate agents, managers, operators, and lessors	16.60	16.60	16.60	16.60
Hotels	24.00	24.00	24.00	24.00
Other lodging places	11.10	11.10	11.10	11.10
Laundry, cleaning, garment services, and shoe repair	9.31	9.31	9.31	9.31
Funeral service and crematories	0.69	0.69	0.69	0.69
Portrait photographic studios, and other miscellaneous personal services	12.00	12.00	12.00	12.00
Electrical repair shops	7.07	7.07	7.07	7.07
Watch, clock, jewelry, and furniture repair	5.19	5.19	5.19	5.19
Beauty and barber shops	35.50	35.50	35.50	35.50
Miscellaneous repair shops	2.21	2.21	2.21	2.21
Services to dwellings and other buildings	1.22	1.22	1.22	1.22
Personnel supply services	0.30	0.30	0.30	0.30
Detective and protective services	0.25	0.25	0.25	0.25
Miscellaneous equipment rental and leasing	9.02	9.02	9.02	9.02
Photofinishing labs and commercial photography	1.77	1.77	1.77	1.77
Other business services	13.70	13.70	13.70	13.70
Advertising	0.07	0.07	0.07	0.07
Legal services	3.92	3.92	3.92	3.92
Engineering, architectural, and surveying services	1.44	1.44	1.44	1.44
Accounting, auditing and bookkeeping, and miscellaneous services, n.e.c.	0.03	0.03	0.03	0.03
Eating and drinking places	207.00	207.00	207.00	207.00
Automotive rental and leasing, without drivers	18.80	18.80	18.80	18.80
Automotive repair shops and services	51.80	51.80	51.80	51.80
Automobile parking and car washes	5.53	5.53	5.53	5.53
Motion picture services and theaters	3.88	3.88	3.88	3.88

e3iot categories	Scenario 0 – All	Scenario 1 - All	Scenario 2 - All	Scenario 3 - All
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Video tape rental	3.20	3.20	3.20	3.20
Theatrical producers (except motion picture), bands, orchestras and entertainers	3.28	3.28	3.28	3.28
Bowling centers	0.61	0.61	0.61	0.61
Professional sports clubs and promoters	1.21	1.21	1.21	1.21
Racing, including track operation	1.74	1.74	1.74	1.74
Physical fitness facilities and membership sports and recreation clubs	5.80	5.80	5.80	5.80
Other amusement and recreation services	54.30	54.30	54.30	54.30
Doctors and dentists	50.50	50.50	50.50	50.50
Hospitals	6.04	6.04	6.04	6.04
Nursing and personal care facilities	6.24	6.24	6.24	6.24
Home health care services	11.60	11.60	11.60	11.60
Veterinary services	1.33	1.33	1.33	1.33
Elementary and secondary schools	7.01	7.01	7.01	7.01
Colleges, universities, and professional schools	19.60	19.60	19.60	19.60
Private libraries, vocational schools, and educational services, n.e.c.	6.39	6.39	6.39	6.39
Business associations and professional membership organizations	0.32	0.32	0.32	0.32
Labor organizations, civic, social, and fraternal associations	1.46	1.46	1.46	1.46
Religious organizations	2.76	2.76	2.76	2.76
Other membership organizations	1.96	1.96	1.96	1.96
Job training and related services	1.85	1.85	1.85	1.85
Child day care services	1.99	1.99	1.99	1.99
Residential care	1.72	1.72	1.72	1.72
Social services, n.e.c.	4.25	4.25	4.25	4.25
Postal Service	6.24	6.24	6.24	6.24
Sum food products	2069	2069	2069	2069
Sum nonfood	447	455	433	444
Sum all	2516	2524	2502	2513

## 6.2 Scenario All + first order

e3iot categories	Scenario 1 – All + first order	Scenario 2 – All + first order	Scenario 3 – All + first order
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Dairy farm products	0.29	0.29	0.26
Poultry and eggs	6.87	6.87	6.46
Miscellaneous livestock	3.79	1.59	1.56
Feed grains	0.43	0.43	0.43
Fruits	12.53	12.53	11.82
Tree nuts	0.95	2.39	1.54
Vegetables	21.14	21.14	21.97
Miscellaneous crops	0.00	0.00	0.00
Oil bearing crops	0.17	0.17	0.22
Greenhouse and nursery products	14.44	14.44	15.01
Forestry products	6.70	6.78	6.74
Commercial fishing	7.01	7.01	11.53
Agricultural, forestry, and fishery services	0.35	0.35	0.35
Coal	0.06	0.06	0.06
Crude petroleum and natural gas	1.73	1.75	1.74
Chemical and fertilizer minerals	0.02	0.02	0.02
New residential 1 unit structures, nonfarm	148.41	150.00	149.24
New residential 2-4 unit structures, nonfarm	3.46	3.49	3.48
New additions & alterations, nonfarm, construction	73.81	74.60	74.22
New residential garden and high-rise apartments construction	28.19	28.49	28.35
New highways, bridges, and other horizontal construction	0.44	0.45	0.44
New farm residential construction	3.69	3.72	3.71
Maintenance and repair of farm and nonfarm residential structures	35.26	35.64	35.46
Small arms	0.24	0.25	0.25
Small arms ammunition	0.18	0.18	0.18
Beef packing plants	22.09	14.51	10.02
Sausages and other prepared beef products	9.27	0.00	4.20
Pork packing plants	23.76	15.56	10.55
Sausages and other prepared pork products	9.93	0.00	4.41
Poultry slaughtering and processing	41.00	50.84	52.84

e3iot categories	Scenario 1 – All + first order	Scenario 2 – All + first order	Scenario 3 – All + first order
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Creamery butter	1.20	1.20	1.08
Natural, processed, and imitation cheese	21.80	21.80	19.78
Dry, condensed, and evaporated dairy products	8.27	8.27	7.50
Ice cream and frozen desserts	1.82	1.82	1.62
Fluid milk	27.40	27.40	24.86
Canned and cured fish and seafoods	8.14	8.14	13.39
Canned specialties	1.89	1.89	1.89
Canned fruits, vegetables, preserves, jams, and jellies	6.57	6.57	5.84
Dehydrated fruits, vegetables, and soups	3.08	3.08	2.91
Pickles, sauces, and salad dressings	1.84	1.84	1.84
Prepared fresh or frozen fish and seafoods	10.96	10.96	18.02
Frozen fruits, fruit juices, and vegetables	14.65	14.65	14.24
Frozen specialties, n.e.c.	3.70	3.70	3.70
Flour and other grain mill products	1.29	1.36	1.41
Cereal breakfast foods	9.69	10.19	10.55
Prepared flour mixes and doughs	6.44	6.77	7.01
Dog and cat food	5.63	5.69	5.66
Prepared feeds, n.e.c.	1.15	1.16	1.15
Bread, cake, and related products	28.82	30.31	31.39
Cookies and crackers	10.70	10.70	12.26
Frozen bakery products, except bread	3.80	3.99	4.14
Sugar	1.42	1.42	1.27
Chocolate and cocoa products	0.47	0.47	0.42
Salted and roasted nuts and seeds	0.78	1.71	1.21
Candy and other confectionery products	9.06	9.06	8.05
Malt beverages	9.99	9.99	9.20
Wines, brandy, and brandy spirits	15.60	15.60	14.37
Distilled and blended liquors	3.93	3.93	3.62
Bottled and canned soft drinks	15.88	15.88	14.11
Flavoring extracts and flavoring syrups, n.e.c.	2.62	2.62	2.32
Roasted coffee	11.20	11.20	11.20
Edible fats and oils, n.e.c.	19.27	19.59	22.92
Manufactured ice	0.16	0.16	0.14

e3iot categories	Scenario 1 – All + first order	Scenario 2 – All + first order	Scenario 3 – All + first order
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Macaroni, spaghetti, vermicelli, and noodles	1.37	1.44	1.49
Potato chips and similar snacks	12.70	12.70	12.16
Food preparations, n.e.c.	5.27	5.27	5.27
Cigarettes	34.56	34.93	34.76
Cigars	1.25	1.26	1.25
Chewing and smoking tobacco and snuff	1.96	1.98	1.97
Carpets and rugs	8.17	8.25	8.21
Cordage and twine	0.16	0.16	0.16
Nonwoven fabrics	0.93	0.94	0.93
Textile goods, n.e.c.	0.04	0.04	0.04
Women's hosiery, except socks	2.47	2.50	2.48
Hosiery, n.e.c.	1.61	1.63	1.62
Apparel made from purchased materials	56.97	57.58	57.29
Curtains and draperies	3.04	3.07	3.05
Housefurnishings, n.e.c.	7.60	7.68	7.64
Textile bags	0.33	0.33	0.33
Canvas and related products	0.82	0.83	0.82
Pleating and stitching	1.39	1.41	1.40
Automotive and apparel trimmings	3.87	3.92	3.90
Schiffli machine embroideries	0.10	0.10	0.10
Fabricated textile products, n.e.c.	4.39	4.44	4.42
Mobile homes	1.23	1.24	1.23
Wood products, n.e.c.	0.48	0.49	0.48
Wood household furniture, except upholstered	11.16	11.27	11.22
Household furniture, n.e.c.	0.42	0.42	0.42
Wood television and radio cabinets	0.02	0.02	0.02
Upholstered household furniture	7.70	7.78	7.74
Metal household furniture	2.25	2.28	2.26
Mattresses and bedsprings	4.20	4.25	4.23
Wood office furniture	3.62	3.65	3.64
Wood partitions and fixtures	4.84	4.89	4.87
Partitions and fixtures, except wood	6.58	6.65	6.62
Drapery hardware and window blinds and shades	2.27	2.30	2.28

e3iot categories	Scenario 1 – All + first order	Scenario 2 – All + first order	Scenario 3 – All + first order
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Furniture and fixtures, n.e.c.	4.14	4.19	4.17
Envelopes	0.20	0.20	0.20
Sanitary paper products	7.76	7.84	7.80
Paper coating and glazing	0.50	0.50	0.50
Bags, except textile	1.22	1.23	1.22
Stationery, tablets, and related products	0.18	0.18	0.18
Converted paper products, n.e.c.	0.81	0.82	0.82
Paperboard containers and boxes	0.29	0.29	0.29
Newspapers	10.26	10.37	10.32
Periodicals	9.67	9.77	9.73
Book publishing	12.85	12.99	12.92
Miscellaneous publishing	1.27	1.29	1.28
Commercial printing	0.36	0.36	0.36
Blankbooks, looseleaf binders and devices	0.27	0.27	0.27
Greeting cards	1.54	1.56	1.55
Nitrogenous and phosphatic fertilizers	1.99	2.01	2.00
(Household use of) pesticides and agricultural chemicals, n.e.c.	11.95	12.08	12.02
Gum and wood chemicals	1.71	1.73	1.72
Adhesives and sealants	0.35	0.35	0.35
Chemicals and chemical preparations, n.e.c.	0.79	0.80	0.79
Drugs	24.20	24.46	24.34
Soap and other detergents	5.94	6.00	5.97
Polishes and sanitation goods	0.88	0.89	0.88
Toilet preparations	12.55	12.68	12.62
Paints and allied products	0.15	0.15	0.15
Lubricating oils and greases	1.01	1.02	1.01
Products of petroleum and coal, n.e.c.	0.01	0.01	0.01
Rubber and plastics footwear	1.80	1.82	1.81
Fabricated rubber products, n.e.c.	1.57	1.59	1.58
Miscellaneous plastics products, n.e.c.	6.51	6.58	6.55
Rubber and plastics hose and belting	0.29	0.30	0.30
Gaskets, packing, and sealing devices	0.15	0.15	0.15
Boot and shoe cut stock and findings	0.00	0.00	0.00



e3iot categories	Scenario 1 – All + first order	Scenario 2 – All + first order	Scenario 3 – All + first order
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Shoes, except rubber	3.55	3.58	3.57
House slippers	0.26	0.26	0.26
Leather gloves and mittens	0.10	0.10	0.10
Luggage	1.28	1.30	1.29
Women's handbags and purses	0.20	0.20	0.20
Personal leather goods, n.e.c.	0.33	0.33	0.33
Leather goods, n.e.c.	0.29	0.30	0.29
Glass and glass products, except containers	1.77	1.79	1.78
Glass containers	0.14	0.14	0.14
Vitreous china table and kitchenware	0.09	0.09	0.09
Fine earthenware table and kitchenware	0.10	0.10	0.10
Pottery products, n.e.c.	0.51	0.52	0.51
Concrete products, except block and brick	0.00	0.00	0.00
Cut stone and stone products	0.07	0.07	0.07
Abrasive products	0.08	0.08	0.08
Minerals, ground or treated	0.07	0.07	0.07
Nonmetallic mineral products, n.e.c.	0.05	0.05	0.05
Steel wiredrawing and steel nails and spikes	0.00	0.00	0.00
Primary metal products, n.e.c.	0.02	0.02	0.02
Nonferrous wiredrawing and insulating	0.03	0.03	0.03
(Household heating with) heating equipment, except electric and warm a furnaces	58.07	58.69	58.39
Prefabricated metal buildings and components	0.01	0.01	0.01
Screw machine products, bolts, etc.	0.04	0.04	0.04
Crowns and closures	0.01	0.01	0.01
Metal stampings, n.e.c.	0.39	0.40	0.39
Cutlery	0.60	0.60	0.60
Hand and edge tools, except machine tools and handsaws	0.41	0.41	0.41
Saw blades and handsaws	0.15	0.15	0.15
Hardware, n.e.c.	0.12	0.12	0.12
Miscellaneous fabricated wire products	0.11	0.11	0.11
Steel springs, except wire	0.01	0.01	0.01
Pipe, valves, and pipe fittings	0.48	0.48	0.48

e3iot categories	Scenario 1 – All + first order	Scenario 2 – All + first order	Scenario 3 – All + first order
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Metal foil and leaf	0.17	0.17	0.17
Fabricated metal products, n.e.c.	0.31	0.32	0.32
Internal combustion engines, n.e.c.	0.38	0.39	0.38
Lawn and garden equipment	0.82	0.82	0.82
Power-driven handtools	0.54	0.54	0.54
Blowers and fans	0.85	0.86	0.85
Scales and balances, except laboratory	0.57	0.58	0.57
Calculating and accounting machines	0.43	0.44	0.43
(use of) Electronic computers	13.65	13.79	13.72
(use of) Computer peripheral equipment	9.96	10.07	10.02
Office machines, n.e.c.	0.40	0.40	0.40
(use of) Household cooking equipment	13.65	13.79	13.72
(use of) Household refrigerators and freezers	21.51	21.74	21.63
(Washing with) household laundry equipment	31.77	32.11	31.95
(use of) Electric housewares and fans	3.28	3.31	3.30
(use of) Household vacuum cleaners	4.00	4.05	4.03
(use of) Household appliances, n.e.c.	21.91	22.15	22.04
(use of) Electric lamp bulbs and tubes	13.85	13.99	13.92
Lighting fixtures and equipment	0.55	0.56	0.56
Wiring devices	0.01	0.01	0.01
(use of) Household audio and video equipment	17.33	17.52	17.43
Prerecorded records and tapes	0.73	0.74	0.74
(use of) Telephone and telegraph apparatus	2.73	2.76	2.74
(use of) Communication equipment	2.67	2.70	2.68
Other electronic components	0.08	0.08	0.08
Storage batteries	0.70	0.71	0.71
Primary batteries, dry and wet	0.75	0.76	0.75
Magnetic and optical recording media	0.31	0.31	0.31
Truck and bus bodies	3.64	3.67	3.66
Truck trailers	0.87	0.88	0.88
(Driving with) motor vehicles and passenger car bodies	219.13	221.47	220.35
Aircraft	3.03	3.06	3.04
Aircraft and missile engines and engine parts	0.64	0.64	0.64

e3iot categories	Scenario 1 – All + first order	Scenario 2 – All + first order	Scenario 3 – All + first order
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Ship building and repairing	0.28	0.28	0.28
Boat building and repairing	0.82	0.83	0.82
Motorcycles, bicycles, and parts	5.21	5.26	5.24
Travel trailers and campers	0.35	0.36	0.36
Motor homes	0.44	0.45	0.45
Transportation equipment, n.e.c.	0.54	0.54	0.54
Search and navigation equipment	9.85	9.96	9.91
Watches, clocks, watchcases, and parts	0.22	0.22	0.22
Instruments to measure electricity	3.99	4.04	4.02
Ophthalmic goods	5.29	5.35	5.32
Photographic equipment and supplies	3.55	3.58	3.57
Jewelry, precious metal	1.58	1.60	1.59
Jewelers' materials and lapidary work	1.07	1.08	1.07
Silverware and plated ware	0.08	0.08	0.08
Costume jewelry	0.38	0.39	0.38
Musical instruments	0.90	0.91	0.90
Games, toys, and children's vehicles	2.52	2.55	2.53
Dolls and stuffed toys	0.41	0.41	0.41
Sporting and athletic goods, n.e.c.	2.38	2.41	2.39
Pens, mechanical pencils, and parts	0.37	0.37	0.37
Lead pencils and art goods	0.17	0.17	0.17
Marking devices	0.01	0.01	0.01
Carbon paper and inked ribbons	0.02	0.02	0.02
Fasteners, buttons, needles, and pins	0.05	0.05	0.05
Brooms and brushes	17.93	18.12	18.03
Signs and advertising specialties	1.87	1.89	1.88
Railroads and related services	9.74	9.85	9.80
Local and suburban transit and interurban highway passenger transportation	16.73	16.91	16.83
Trucking and courier services, except air	1.21	1.22	1.21
Warehousing and storage	0.13	0.13	0.13
Water transportation	1.63	1.65	1.64
Air transportation	9.26	9.36	9.31
Arrangement of passenger transportation	0.19	0.19	0.19

e3iot categories	Scenario 1 – All + first order	Scenario 2 – All + first order	Scenario 3 – All + first order
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Telephone, telgraph communications, and communications services n.e.c.	89.74	90.70	90.24
Cable and other pay television services	12.05	12.18	12.12
Radio and TV broadcasting	1.39	1.41	1.40
Water supply and sewerage systems	20.92	21.14	21.03
Banking	4.90	4.95	4.93
Credit agencies other than banks	1.18	1.19	1.18
Security and commodity brokers	3.87	3.92	3.90
Insurance carriers	118.53	119.80	119.19
Real estate agents, managers, operators, and lessors	16.53	16.71	16.63
Hotels	23.91	24.16	24.04
Other lodging places	11.06	11.17	11.12
Laundry, cleaning, garment services, and shoe repair	9.27	9.37	9.32
Funeral service and crematories	0.69	0.70	0.69
Portrait photographic studios, and other miscellaneous personal services	11.95	12.08	12.02
Electrical repair shops	7.04	7.12	7.08
Watch, clock, jewelry, and furniture repair	5.17	5.22	5.20
Beauty and barber shops	35.36	35.74	35.56
Miscellaneous repair shops	2.20	2.22	2.21
Services to dwellings and other buildings	1.22	1.23	1.22
Personnel supply services	0.30	0.31	0.30
Detective and protective services	0.25	0.25	0.25
Miscellaneous equipment rental and leasing	8.98	9.08	9.03
Photofinishing labs and commercial photography	1.76	1.78	1.77
Other business services	13.65	13.79	13.72
Advertising	0.07	0.07	0.07
Legal services	3.90	3.95	3.93
Engineering, architectural, and surveying services	1.43	1.45	1.44
Accounting, auditing and bookkeeping, and miscellaneous services, n.e.c.	0.03	0.03	0.03
Eating and drinking places	206.18	208.39	207.33
Automotive rental and leasing, without drivers	18.73	18.93	18.83
Automotive repair shops and services	51.60	52.15	51.88
Automobile parking and car washes	5.51	5.57	5.54
Motion picture services and theaters	3.86	3.91	3.89

e3iot categories	Scenario 1 – All + first order	Scenario 2 – All + first order	Scenario 3 – All + first order
	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)	Final consumer expenditure (billion euro)
Video tape rental	3.19	3.22	3.21
Theatrical producers (except motion picture), bands, orchestras and entertainers	3.27	3.30	3.29
Bowling centers	0.60	0.61	0.61
Professional sports clubs and promoters	1.21	1.22	1.21
Racing, including track operation	1.73	1.75	1.74
Physical fitness facilities and membership sports and recreation clubs	5.78	5.84	5.81
Other amusement and recreation services	54.09	54.66	54.39
Doctors and dentists	50.30	50.84	50.58
Hospitals	6.02	6.08	6.05
Nursing and personal care facilities	6.22	6.28	6.25
Home health care services	11.55	11.68	11.62
Veterinary services	1.32	1.34	1.33
Elementary and secondary schools	6.98	7.06	7.02
Colleges, universities, and professional schools	19.52	19.73	19.63
Private libraries, vocational schools, and educational services, n.e.c.	6.36	6.43	6.40
Business associations and professional membership organizations	0.32	0.32	0.32
Labor organizations, civic, social, and fraternal associations	1.45	1.47	1.46
Religious organizations	2.75	2.78	2.76
Other membership organizations	1.95	1.97	1.96
Job training and related services	1.84	1.86	1.85
Child day care services	1.98	2.00	1.99
Residential care	1.71	1.73	1.72
Social services, n.e.c.	4.23	4.28	4.26
Postal Service	6.22	6.28	6.25
Sum all	2516	2516	2516
Sum food products	455	433	444
Sum nonfood	2061	2083	2072

## 7 CHAPTER 5, ANNEX 4: TOTAL SUPPLY VECTORS AS INPUT TO CAPRI

Total supply vectors for primary agricultural sectors resulting from the final demand of food products as bought by consumers in the status quo scenario (Scenario 0) and the various diet change scenarios including first order consumer expenditure redistribution effects. These total supply vectors have been calculated with E3IOT and are in principle specified in terms of the E3IOT industry sector classification. Using the E3IOT to CAPRI transformation matrix as specified in Annex to Chapter 5.2 the E3IOT total supply vector has been produced.

Capri categories						
no	group	item	Total Supply scenario 0 - All (billion Euro)	Total Supply scenario 1 - All + first order (billion Euro)	Total Supply scenario 2 - All + first order (billion Euro)	Total Supply scenario 3 - All + first order (billion Euro)
1	cereals	wheat	32.64	32.16	28.65	28.01
2		rye and meslin	2.99	2.94	2.59	2.53
3		barley	20.72	20.22	17.43	16.85
4		oats	5.48	5.34	4.56	4.40
5		grain maize	21.33	20.81	17.91	17.31
6		other cereals	4.77	4.64	3.97	3.82
7	oilseeds	rape seed	10.81	11.23	11.11	11.69
8		sunflower seed	4.69	4.87	4.82	5.07
9		soya seed	17.99	18.69	18.48	19.44
10	oils	rape seed oil	9.24	10.58	10.73	12.25
11		sunflower seed oil	4.85	5.55	5.63	6.43
12		soya oil	5.03	5.75	5.84	6.66
13		olive oil	5.18	5.92	6.01	6.86
14	oil cakes	rape seed cake	1.41	1.48	1.48	1.54
15		sunflower seed cake	1.17	1.23	1.23	1.28
16		soya cake	26.20	26.90	26.20	27.40
17	other arable field crops	pulses	14.06	13.80	13.27	13.34
18		potatoes	30.50	29.96	28.85	28.99
19	vegetables and permanent crops	tomatoes	7.10	8.02	8.00	8.17
20		other vegetables	21.30	24.08	24.00	24.53
21		apples pears and peaches	7.73	8.50	8.50	8.19
22		table grapes	1.55	1.70	1.70	1.64
23		citrus fruits	8.17	8.98	8.98	8.65
24		other fruits	9.75	10.71	10.71	10.32
25		table olives	2.06	2.03	3.78	2.76
26		table wine	19.00	19.00	19.00	17.60
27	meat	beef	54.60	50.90	31.70	30.40
28		pork meat	55.30	52.20	31.50	29.90
29		sheep and goat meat	9.07	9.41	6.65	8.00
30		poultry meat	33.96	33.83	38.54	39.73
31	other animal products	eggs	20.14	20.07	22.86	23.57
32	dairy products	butter	2.11	2.09	2.09	1.94
33		skimmed milk	1.08	1.07	1.07	0.99

Capri categories						
no	group	item	Total Supply scenario 0 - All (billion Euro)	Total Supply scenario 1 - All + first order (billion Euro)	Total Supply scenario 2 - All + first order (billion Euro)	Total Supply scenario 3 - All + first order (billion Euro)
34		powder				
		cheese	7.61	7.53	7.51	6.98
35		fresh milk products	47.09	46.56	46.48	43.20
36		cream	2.30	2.28	2.27	2.11
37		concentrated milk	1.06	1.05	1.05	0.97
38		whole milk powder	0.43	0.43	0.43	0.40
39	secondary products	rice milled	0.48	0.49	0.48	0.48
40		sugar	4.67	4.49	4.49	4.39

## 8 CHAPTER 5, ANNEX 5: AGGREGATED ENVIRONMENTAL IMPACTS PER EURO FOR FOOD PRODUCT GROUPS ACCORDING E3IOT

Name	weighted environmental impact per Euro
Miscellaneous crops	4.47E-12
Tree nuts	1.07E-12
Sugar	1.06E-12
Sausages and other prepared pork products	1.00E-12
Pork packing plants	9.99E-13
Miscellaneous livestock	8.85E-13
Sausages and other prepared beef products	8.66E-13
Flour and other grain mill products	8.34E-13
Beef packing plants	8.29E-13
Poultry slaughtering and processing	7.99E-13
Natural, processed, and imitation cheese	7.84E-13
Fluid milk	7.55E-13
Poultry and eggs	7.41E-13
Prepared flour mixes and doughs	7.22E-13
Dairy farm products	7.06E-13
Salted and roasted nuts and seeds	6.32E-13
Edible fats and oils, n.e.c.	6.27E-13
Ice cream and frozen desserts	6.21E-13
Fruits	6.05E-13
Food preparations, n.e.c.	5.88E-13
Frozen fruits, fruit juices, and vegetables	5.78E-13
Roasted coffee	5.76E-13
Creamery butter	5.74E-13
Cereal breakfast foods	5.73E-13
Dry, condensed, and evaporated dairy products	5.64E-13
Feed grains	5.63E-13
Chocolate and cocoa products	5.63E-13
Frozen specialties, n.e.c.	5.48E-13
Frozen bakery products, except bread	5.42E-13
Macaroni, spaghetti, vermicelli, and noodles	5.14E-13
Dehydrated fruits, vegetables, and soups	4.83E-13
Vegetables	4.74E-13
Canned fruits, vegetables, preserves, jams, and jellies	4.47E-13
Candy and other confectionery products	4.46E-13
Bottled and canned soft drinks	4.35E-13
Potato chips and similar snacks	4.24E-13
Oil bearing crops	4.22E-13
Prepared fresh or frozen fish and seafoods	4.07E-13
Canned specialties	3.99E-13
Pickles, sauces, and salad dressings	3.94E-13
Cookies and crackers	3.65E-13
Canned and cured fish and seafoods	3.44E-13
Wines, brandy, and brandy spirits	3.19E-13
Bread, cake, and related products	3.14E-13
Malt beverages	2.87E-13
Flavoring extracts and flavoring syrups, n.e.c.	2.75E-13
Distilled and blended liquors	2.33E-13
Manufactured ice	1.96E-13
Commercial fishing	1.84E-13
Greenhouse and nursery products	1.34E-13



## 9 CHAPTER 5, ANNEX 6: CONTRIBUTION OF ALL PRODUCTS TO OVERALL ENVIRONMENTAL IMPACT FOR SCENARIO 0

Aggregated environmental impacts associated with the final consumption of food products compared to the aggregated environmental impacts of all other product groups for the status quo situation (scenario 0 – All). The product groups have been ordered from high to low aggregated environmental impact per Euro. The relative contribution of the product group to the total environmental impact is calculated by multiplying the Final consumption (in Euros) with the aggregated environmental impact per Euro for the product group.

Product Group	Final consumption (billion Euro)	Cumulative final consumption (billion Euro)	Aggregated environmental impact per Euro	Fraction contribution to overall impact	food product
Nonwoven fabrics	0.929	0.929	5.45E-12	0.005	no
Miscellaneous crops	0.002	0.931	4.47E-12	0.000	yes
(Household use of) pesticides and agricultural chemicals, n.e.c.	11.990	12.921	2.58E-12	0.031	no
Nonmetallic mineral products, n.e.c.	0.049	12.970	1.87E-12	0.000	no
Boot and shoe cut stock and findings	0.002	12.972	1.65E-12	0.000	no
Coal	0.064	13.036	1.31E-12	0.000	no
Gum and wood chemicals	1.718	14.754	1.22E-12	0.002	no
(use of) Electric lamp bulbs and tubes	13.854	28.608	1.09E-12	0.015	no
Tree nuts	0.951	29.559	1.07E-12	0.001	yes
Sugar	1.649	31.209	1.06E-12	0.002	yes
Sausages and other prepared pork products	10.700	41.909	1.00E-12	0.011	yes
Pork packing plants	25.600	67.509	9.99E-13	0.026	yes
(use of) Household refrigerators and freezers	21.567	89.076	9.73E-13	0.021	no
Postal Service	6.240	95.316	9.14E-13	0.006	no
Miscellaneous livestock	3.789	99.105	8.85E-13	0.003	yes
(Washing with) household laundry equipment	31.924	131.028	8.71E-13	0.028	no
Sausages and other prepared beef products	10.200	141.228	8.66E-13	0.009	yes
Fabricated textile products, n.e.c.	4.415	145.643	8.62E-13	0.004	no
(Driving with) motor vehicles and passenger car bodies	220.341	365.984	8.53E-13	0.188	no
Steel wiredrawing and steel nails and spikes	0.001	365.985	8.48E-13	0.000	no
Flour and other grain mill products	1.233	367.218	8.34E-13	0.001	yes
Beef packing plants	24.300	391.518	8.29E-13	0.020	yes
(Household heating with) heating equipment, except electric and warm a furnaces	58.307	449.825	8.18E-13	0.048	no

Product Group	Final consumption (billion Euro)	Cumulative final consumption (billion Euro)	Aggregated environmental impact per Euro	Fraction contribution to overall impact	food product
(use of) Household cooking equipment	13.725	463.550	8.08E-13	0.011	no
Poultry slaughtering and processing	41.034	504.584	7.99E-13	0.033	yes
Natural, processed, and imitation cheese	21.804	526.388	7.84E-13	0.017	yes
(use of) Household audio and video equipment	17.364	543.752	7.75E-13	0.013	no
Fluid milk	27.415	571.167	7.55E-13	0.021	yes
Nitrogenous and phosphatic fertilizers	2.000	573.167	7.50E-13	0.002	no
Poultry and eggs	6.875	580.042	7.41E-13	0.005	yes
Primary metal products, n.e.c.	0.024	580.066	7.36E-13	0.000	no
Prepared flour mixes and doughs	6.121	586.187	7.22E-13	0.004	yes
Prepared feeds, n.e.c.	1.149	587.335	7.19E-13	0.001	no
(use of) Electric housewares and fans	3.291	590.626	7.07E-13	0.002	no
Dairy farm products	0.289	590.916	7.06E-13	0.000	yes
Small arms ammunition	0.181	591.097	6.83E-13	0.000	no
Chemicals and chemical preparations, n.e.c.	0.793	591.890	6.63E-13	0.001	no
(use of) Household vacuum cleaners	4.021	595.910	6.38E-13	0.003	no
Dog and cat food	5.653	601.564	6.37E-13	0.004	no
Salted and roasted nuts and seeds	0.779	602.343	6.32E-13	0.000	yes
Edible fats and oils, n.e.c.	16.303	618.646	6.27E-13	0.010	yes
Products of petroleum and coal, n.e.c.	0.014	618.659	6.26E-13	0.000	no
Ice cream and frozen desserts	2.107	620.766	6.21E-13	0.001	yes
Small arms	0.245	621.011	6.07E-13	0.000	no
Fruits	9.958	630.969	6.05E-13	0.006	yes
Household furniture, n.e.c.	0.421	631.390	5.91E-13	0.000	no
Food preparations, n.e.c.	5.268	636.658	5.88E-13	0.003	yes
Sanitary paper products	7.791	644.449	5.82E-13	0.005	no
Textile bags	0.332	644.780	5.79E-13	0.000	no
Frozen fruits, fruit juices, and vegetables	12.004	656.784	5.78E-13	0.007	yes
Roasted coffee	11.182	667.966	5.76E-13	0.006	yes
Creamery butter	2.058	670.024	5.74E-13	0.001	yes
Cereal breakfast foods	9.207	679.231	5.73E-13	0.005	yes
Dry, condensed, and evaporated dairy products	8.273	687.503	5.64E-13	0.005	yes
Chocolate and cocoa products	0.544	688.048	5.63E-13	0.000	yes
Feed grains	0.432	688.480	5.63E-13	0.000	yes
Glass containers	0.140	688.620	5.60E-13	0.000	no

Product Group	Final consumption (billion Euro)	Cumulative final consumption (billion Euro)	Aggregated environmental impact per Euro	Fraction contribution to overall impact	food product
Automotive and apparel trimmings	3.890	692.511	5.51E-13	0.002	no
Cordage and twine	0.159	692.669	5.49E-13	0.000	no
Frozen specialties, n.e.c.	3.704	696.373	5.48E-13	0.002	yes
Textile goods, n.e.c.	0.042	696.416	5.47E-13	0.000	no
Frozen bakery products, except bread	3.606	700.022	5.42E-13	0.002	yes
Paper coating and glazing	0.499	700.521	5.37E-13	0.000	no
Adhesives and sealants	0.350	700.871	5.28E-13	0.000	no
Chemical and fertilizer minerals	0.021	700.892	5.21E-13	0.000	no
Shoes, except rubber	3.560	704.452	5.19E-13	0.002	no
Macaroni, spaghetti, vermicelli, and noodles	1.300	705.752	5.14E-13	0.001	yes
Housefurnishings, n.e.c.	7.626	713.378	5.04E-13	0.004	no
Water transportation	1.644	715.022	5.04E-13	0.001	no
Concrete products, except block and brick	0.004	715.026	4.99E-13	0.000	no
Prefabricated metal buildings and components	0.008	715.034	4.91E-13	0.000	no
Paperboard containers and boxes	0.293	715.327	4.87E-13	0.000	no
Fabricated metal products, n.e.c.	0.315	715.642	4.87E-13	0.000	no
Converted paper products, n.e.c.	0.817	716.459	4.83E-13	0.000	no
Crude petroleum and natural gas	1.744	718.203	4.83E-13	0.001	no
Dehydrated fruits, vegetables, and soups	2.451	720.653	4.83E-13	0.001	yes
Crowns and closures	0.009	720.662	4.79E-13	0.000	no
Miscellaneous plastics products, n.e.c.	6.537	727.199	4.75E-13	0.003	no
Rubber and plastics hose and belting	0.295	727.494	4.74E-13	0.000	no
Vegetables	17.989	745.484	4.74E-13	0.009	yes
Bags, except textile	1.223	746.707	4.74E-13	0.001	no
(use of) Communication equipment	2.685	749.392	4.71E-13	0.001	no
Carpets and rugs	8.197	757.589	4.64E-13	0.004	no
Paints and allied products	0.150	757.739	4.56E-13	0.000	no
Leather gloves and mittens	0.100	757.839	4.55E-13	0.000	no
Lubricating oils and greases	1.009	758.847	4.52E-13	0.000	no
Canned fruits, vegetables, preserves, jams, and jellies	7.607	766.454	4.47E-13	0.003	yes
Candy and other confectionery products	10.495	776.950	4.46E-13	0.005	yes
Drugs	24.347	801.297	4.40E-13	0.011	no
Bottled and canned soft drinks	18.364	819.661	4.35E-13	0.008	yes
Curtains and draperies	3.046	822.707	4.32E-13	0.001	no

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(use of) Household appliances, n.e.c.	22.031	844.737	4.27E-13	0.009	no
Glass and glass products, except containers	1.779	846.516	4.27E-13	0.001	no
Potato chips and similar snacks	12.704	859.220	4.24E-13	0.005	yes
Oil bearing crops	0.165	859.385	4.22E-13	0.000	yes
Jewelry, precious metal	1.586	860.971	4.19E-13	0.001	no
Soap and other detergents	5.955	866.927	4.10E-13	0.002	no
Storage batteries	0.707	867.634	4.09E-13	0.000	no
Abrasive products	0.077	867.711	4.07E-13	0.000	no
Prepared fresh or frozen fish and seafoods	9.219	876.930	4.07E-13	0.004	yes
Envelopes	0.202	877.131	4.06E-13	0.000	no
Fabricated rubber products, n.e.c.	1.576	878.707	4.01E-13	0.001	no
Canned specialties	1.894	880.601	3.99E-13	0.001	yes
Metal household furniture	2.259	882.859	3.97E-13	0.001	no
Pickles, sauces, and salad dressings	1.842	884.702	3.94E-13	0.001	yes
Metal stampings, n.e.c.	0.394	885.096	3.92E-13	0.000	no
Magnetic and optical recording media	0.312	885.407	3.92E-13	0.000	no
(use of) Telephone and telegraph apparatus	2.737	888.144	3.88E-13	0.001	no
Metal foil and leaf	0.166	888.310	3.88E-13	0.000	no
Steel springs, except wire	0.015	888.325	3.85E-13	0.000	no
Nonferrous wiredrawing and insulating	0.032	888.356	3.83E-13	0.000	no
Minerals, ground or treated	0.074	888.430	3.83E-13	0.000	no
Miscellaneous fabricated wire products	0.113	888.543	3.83E-13	0.000	no
Polishes and sanitation goods	0.883	889.426	3.77E-13	0.000	no
Lead pencils and art goods	0.166	889.593	3.76E-13	0.000	no
Trucking and courier services, except air	1.212	890.805	3.76E-13	0.000	no
Truck trailers	0.876	891.681	3.74E-13	0.000	no
Partitions and fixtures, except wood	6.609	898.290	3.72E-13	0.002	no
Rubber and plastics footwear	1.808	900.098	3.71E-13	0.001	no
Pleating and stitching	1.403	901.501	3.68E-13	0.001	no
Stationery, tablets, and related products	0.177	901.678	3.68E-13	0.000	no
Fine earthenware table and kitchenware	0.098	901.776	3.67E-13	0.000	no
Railroads and related services	9.783	911.559	3.66E-13	0.004	no
Cookies and crackers	10.682	922.241	3.65E-13	0.004	yes
Truck and bus bodies	3.649	925.890	3.62E-13	0.001	no

Product Group	Final consumption (billion Euro)	Cumulative final consumption (billion Euro)	Aggregated environmental impact per Euro	Fraction contribution to overall impact	food product
Agricultural, forestry, and fishery services	0.350	926.240	3.52E-13	0.000	no
Canned and cured fish and seafoods	6.855	933.095	3.44E-13	0.002	yes
Blowers and fans	0.853	933.947	3.32E-13	0.000	no
Pottery products, n.e.c.	0.514	934.461	3.26E-13	0.000	no
Gaskets, packing, and sealing devices	0.150	934.611	3.24E-13	0.000	no
Carbon paper and inked ribbons	0.020	934.631	3.20E-13	0.000	no
Wines, brandy, and brandy spirits	15.635	950.266	3.19E-13	0.005	yes
Boat building and repairing	0.823	951.089	3.17E-13	0.000	no
Silverware and plated ware	0.077	951.166	3.14E-13	0.000	no
Bread, cake, and related products	27.438	978.604	3.14E-13	0.009	yes
Primary batteries, dry and wet	0.751	979.355	3.14E-13	0.000	no
Hosiery, n.e.c.	1.622	980.977	3.13E-13	0.001	no
Luggage	1.288	982.266	3.13E-13	0.000	no
Eating and drinking places	207.100	1189.366	3.10E-13	0.064	no
Women's hosiery, except socks	2.478	1191.844	3.10E-13	0.001	no
Beauty and barber shops	35.500	1227.344	3.02E-13	0.011	no
Internal combustion engines, n.e.c.	0.383	1227.727	3.00E-13	0.000	no
Laundry, cleaning, garment services, and shoe repair	9.310	1237.037	2.99E-13	0.003	no
Fasteners, buttons, needles, and pins	0.053	1237.089	2.98E-13	0.000	no
Pipe, valves, and pipe fittings	0.479	1237.568	2.97E-13	0.000	no
Hardware, n.e.c.	0.120	1237.688	2.97E-13	0.000	no
Mattresses and bedsprings	4.221	1241.909	2.96E-13	0.001	no
Brooms and brushes	18.025	1259.933	2.95E-13	0.005	no
Commercial printing	0.362	1260.295	2.90E-13	0.000	no
Women's handbags and purses	0.197	1260.492	2.89E-13	0.000	no
Lighting fixtures and equipment	0.555	1261.047	2.87E-13	0.000	no
Malt beverages	9.988	1271.035	2.87E-13	0.003	yes
Screw machine products, bolts, etc.	0.036	1271.071	2.86E-13	0.000	no
Saw blades and handsaws	0.146	1271.217	2.84E-13	0.000	no
Lawn and garden equipment	0.819	1272.036	2.83E-13	0.000	no
Ship building and repairing	0.277	1272.313	2.83E-13	0.000	no
Upholstered household furniture	7.727	1280.040	2.81E-13	0.002	no
Other lodging places	11.144	1291.184	2.80E-13	0.003	no
Wood products, n.e.c.	0.483	1291.668	2.79E-13	0.000	no

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Flavoring extracts and flavoring syrups, n.e.c.	3.027	1294.695	2.75E-13	0.001	yes
Air transportation	9.296	1303.991	2.72E-13	0.003	no
Cut stone and stone products	0.072	1304.063	2.69E-13	0.000	no
Marking devices	0.009	1304.072	2.68E-13	0.000	no
Wiring devices	0.010	1304.082	2.66E-13	0.000	no
Drapery hardware and window blinds and shades	2.283	1306.365	2.65E-13	0.001	no
Games, toys, and children's vehicles	2.529	1308.894	2.65E-13	0.001	no
Hospitals	6.040	1314.934	2.65E-13	0.002	no
Mobile homes	1.232	1316.166	2.64E-13	0.000	no
Wood television and radio cabinets	0.016	1316.182	2.63E-13	0.000	no
Apparel made from purchased materials	57.180	1373.362	2.63E-13	0.015	no
Personal leather goods, n.e.c.	0.328	1373.690	2.58E-13	0.000	no
Water supply and sewerage systems	20.976	1394.666	2.55E-13	0.005	no
Leather goods, n.e.c.	0.294	1394.960	2.51E-13	0.000	no
Miscellaneous repair shops	2.213	1397.173	2.50E-13	0.001	no
Toilet preparations	12.565	1409.738	2.49E-13	0.003	no
Costume jewelry	0.383	1410.121	2.49E-13	0.000	no
Warehousing and storage	0.127	1410.248	2.47E-13	0.000	no
Hand and edge tools, except machine tools and handsaws	0.407	1410.655	2.46E-13	0.000	no
Veterinary services	1.330	1411.985	2.42E-13	0.000	no
Vitreous china table and kitchenware	0.090	1412.075	2.41E-13	0.000	no
Advertising	0.073	1412.148	2.36E-13	0.000	no
Dolls and stuffed toys	0.412	1412.560	2.33E-13	0.000	no
Distilled and blended liquors	3.930	1416.489	2.33E-13	0.001	yes
Wood office furniture	3.627	1420.116	2.31E-13	0.001	no
Other electronic components	0.083	1420.199	2.30E-13	0.000	no
Sporting and athletic goods, n.e.c.	2.393	1422.592	2.30E-13	0.001	no
Social services, n.e.c.	4.249	1426.841	2.29E-13	0.001	no
Local and suburban transit and interurban highway passenger transportation	16.800	1443.641	2.29E-13	0.004	no
Photographic equipment and supplies	3.556	1447.197	2.28E-13	0.001	no
Wood household furniture, except upholstered	11.224	1458.420	2.26E-13	0.003	no
Watch, clock, jewelry, and furniture repair	5.187	1463.608	2.26E-13	0.001	no
Other membership organizations	1.961	1465.569	2.25E-13	0.000	no

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Travel trailers and campers	0.355	1465.924	2.25E-13	0.000	no
New residential 2-4 unit structures, nonfarm	3.469	1469.393	2.23E-13	0.001	no
Power-driven handtools	0.540	1469.934	2.21E-13	0.000	no
Motorcycles, bicycles, and parts	5.234	1475.168	2.21E-13	0.001	no
Blankbooks, looseleaf binders and devices	0.272	1475.440	2.20E-13	0.000	no
Jewelers' materials and lapidary work	1.073	1476.513	2.18E-13	0.000	no
House slippers	0.259	1476.772	2.16E-13	0.000	no
New highways, bridges, and other horizontal construction	0.443	1477.215	2.15E-13	0.000	no
Miscellaneous equipment rental and leasing	9.025	1486.240	2.13E-13	0.002	no
Wood partitions and fixtures	4.863	1491.103	2.10E-13	0.001	no
Canvas and related products	0.823	1491.926	2.08E-13	0.000	no
Scales and balances, except laboratory	0.574	1492.500	2.07E-13	0.000	no
Cutlery	0.599	1493.099	2.03E-13	0.000	no
Portrait photographic studios, and other miscellaneous personal services	11.991	1505.091	2.03E-13	0.002	no
Watches, clocks, watchcases, and parts	0.218	1505.308	2.02E-13	0.000	no
Motor homes	0.446	1505.755	2.02E-13	0.000	no
New additions & alterations, nonfarm, construction	74.110	1579.865	2.02E-13	0.015	no
Automotive rental and leasing, without drivers	18.775	1598.640	2.01E-13	0.004	no
Funeral service and crematories	0.691	1599.331	1.99E-13	0.000	no
Pens, mechanical pencils, and parts	0.368	1599.699	1.99E-13	0.000	no
Forestry products	6.732	1606.430	1.98E-13	0.001	no
Greeting cards	1.546	1607.976	1.96E-13	0.000	no
Manufactured ice	0.187	1608.163	1.96E-13	0.000	yes
Furniture and fixtures, n.e.c.	4.159	1612.322	1.89E-13	0.001	no
Cigars	1.248	1613.570	1.88E-13	0.000	no
Residential care	1.722	1615.293	1.88E-13	0.000	no
Labor organizations, civic, social, and fraternal associations	1.457	1616.750	1.87E-13	0.000	no
Schiffli machine embroideries	0.102	1616.852	1.87E-13	0.000	no
Business associations and professional membership organizations	0.319	1617.172	1.86E-13	0.000	no
Hotels	23.956	1641.127	1.86E-13	0.004	no
New farm residential construction	3.705	1644.832	1.86E-13	0.001	no
Automotive repair shops and services	51.803	1696.635	1.85E-13	0.010	no
New residential garden and high-rise apartments construction	28.310	1724.945	1.85E-13	0.005	no

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Commercial fishing	5.897	1730.843	1.84E-13	0.001	yes
Real estate agents, managers, operators, and lessors	16.639	1747.482	1.80E-13	0.003	no
Bowling centers	0.605	1748.086	1.79E-13	0.000	no
New residential 1 unit structures, nonfarm	148.966	1897.052	1.77E-13	0.026	no
Periodicals	9.712	1906.764	1.76E-13	0.002	no
Electrical repair shops	7.066	1913.830	1.72E-13	0.001	no
Child day care services	1.994	1915.823	1.69E-13	0.000	no
Cigarettes	34.679	1950.502	1.68E-13	0.006	no
Transportation equipment, n.e.c.	0.539	1951.041	1.66E-13	0.000	no
Ophthalmic goods	5.308	1956.350	1.66E-13	0.001	no
Maintenance and repair of farm and nonfarm residential structures	35.394	1991.744	1.65E-13	0.006	no
Signs and advertising specialties	1.877	1993.620	1.64E-13	0.000	no
Physical fitness facilities and membership sports and recreation clubs	5.800	1999.421	1.63E-13	0.001	no
Newspapers	10.321	2009.742	1.61E-13	0.002	no
Book publishing	12.944	2022.686	1.60E-13	0.002	no
Engineering, architectural, and surveying services	1.441	2024.127	1.59E-13	0.000	no
Other business services	13.675	2037.802	1.55E-13	0.002	no
Aircraft and missile engines and engine parts	0.640	2038.442	1.52E-13	0.000	no
Nursing and personal care facilities	6.235	2044.677	1.47E-13	0.001	no
Other amusement and recreation services	54.342	2099.019	1.45E-13	0.008	no
Aircraft	3.040	2102.059	1.44E-13	0.000	no
Services to dwellings and other buildings	1.221	2103.279	1.44E-13	0.000	no
Accounting, auditing and bookkeeping, and miscellaneous services, n.e.c.	0.034	2103.313	1.42E-13	0.000	no
Job training and related services	1.851	2105.164	1.41E-13	0.000	no
Video tape rental	3.202	2108.366	1.41E-13	0.000	no
Theatrical producers (except motion picture), bands, orchestras and entertainers	3.276	2111.642	1.40E-13	0.000	no
Photofinishing labs and commercial photography	1.773	2113.415	1.40E-13	0.000	no
Chewing and smoking tobacco and snuff	1.966	2115.382	1.40E-13	0.000	no
Musical instruments	0.899	2116.281	1.34E-13	0.000	no
Greenhouse and nursery products	12.254	2128.534	1.34E-13	0.002	yes
(use of) Electronic computers	13.745	2142.280	1.34E-13	0.002	no
Instruments to measure electricity	4.011	2146.291	1.32E-13	0.001	no



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Automobile parking and car washes	5.525	2151.816	1.29E-13	0.001	no
Miscellaneous publishing	1.278	2153.094	1.28E-13	0.000	no
Racing, including track operation	1.742	2154.836	1.27E-13	0.000	no
Radio and TV broadcasting	1.403	2156.239	1.27E-13	0.000	no
Cable and other pay television services	12.060	2168.299	1.25E-13	0.002	no
Motion picture services and theaters	3.884	2172.183	1.23E-13	0.000	no
Elementary and secondary schools	7.007	2179.190	1.17E-13	0.001	no
(use of) Computer peripheral equipment	10.003	2189.193	1.17E-13	0.001	no
Prerecorded records and tapes	0.735	2189.928	1.15E-13	0.000	no
Search and navigation equipment	9.885	2199.813	1.12E-13	0.001	no
Colleges, universities, and professional schools	19.555	2219.368	1.11E-13	0.002	no
Arrangement of passenger transportation	0.193	2219.561	1.10E-13	0.000	no
Professional sports clubs and promoters	1.212	2220.773	1.09E-13	0.000	no
Legal services	3.920	2224.693	1.06E-13	0.000	no
Home health care services	11.600	2236.293	1.06E-13	0.001	no
Telephone, telgraph communications, and communications services n.e.c.	90.100	2326.393	9.97E-14	0.009	no
Private libraries, vocational schools, and educational services, n.e.c.	6.387	2332.780	9.48E-14	0.001	no
Office machines, n.e.c.	0.402	2333.183	9.14E-14	0.000	no
Calculating and accounting machines	0.434	2333.617	7.73E-14	0.000	no
Religious organizations	2.757	2336.374	7.25E-14	0.000	no
Doctors and dentists	50.500	2386.874	7.17E-14	0.004	no
Detective and protective services	0.252	2387.126	6.48E-14	0.000	no
Banking	4.921	2392.047	6.42E-14	0.000	no
Insurance carriers	119.000	2511.047	6.33E-14	0.008	no
Credit agencies other than banks	1.175	2512.222	6.14E-14	0.000	no
Security and commodity brokers	3.885	2516.107	5.70E-14	0.000	no
Personnel supply services	0.304	2516.412	4.68E-14	0.000	no

## 10 CHAPTER 5, ANNEX 7: CONTRIBUTION OF ALL PRODUCTS TO OVERALL ENVIRONMENTAL IMPACTS FOR SCENARIO 1

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 1 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 1 - All + first order	As fraction of Scenario 0
Nonwoven fabrics	5.06E-03	5.06E-03	1.00	5.04E-03	1.00
Miscellaneous crops	9.59E-06	9.57E-06	1.00	9.57E-06	1.00
(Household use of) pesticides and agricultural chemicals, n.e.c.	3.09E-02	3.10E-02	1.00	3.08E-02	1.00
Nonmetallic mineral products, n.e.c.	9.21E-05	9.22E-05	1.00	9.18E-05	1.00
Boot and shoe cut stock and findings	2.70E-06	2.71E-06	1.00	2.70E-06	1.00
Coal	8.36E-05	8.36E-05	1.00	8.32E-05	1.00
Gum and wood chemicals	2.10E-03	2.10E-03	1.00	2.09E-03	1.00
(use of) Electric lamp bulbs and tubes	1.51E-02	1.52E-02	1.00	1.51E-02	1.00
Tree nuts	1.02E-03	1.02E-03	1.00	1.02E-03	1.00
Sugar	1.75E-03	1.51E-03	0.86	1.51E-03	0.86
Sausages and other prepared pork products	1.07E-02	9.93E-03	0.93	9.93E-03	0.93
Pork packing plants	2.56E-02	2.37E-02	0.93	2.37E-02	0.93
(use of) Household refrigerators and freezers	2.10E-02	2.10E-02	1.00	2.09E-02	1.00
Postal Service	5.70E-03	5.70E-03	1.00	5.68E-03	1.00
Miscellaneous livestock	3.35E-03	3.35E-03	1.00	3.35E-03	1.00
(Washing with) household laundry equipment	2.78E-02	2.78E-02	1.00	2.77E-02	1.00
Sausages and other prepared beef products	8.83E-03	8.03E-03	0.91	8.03E-03	0.91
Fabricated textile products, n.e.c.	3.81E-03	3.80E-03	1.00	3.79E-03	0.99
(Driving with) motor vehicles and passenger car bodies	1.88E-01	1.88E-01	1.00	1.87E-01	0.99
Steel wiredrawing and steel nails and spikes	9.77E-07	9.75E-07	1.00	9.71E-07	0.99
Flour and other grain mill products	1.03E-03	1.08E-03	1.05	1.08E-03	1.05
Beef packing plants	2.01E-02	1.83E-02	0.91	1.83E-02	0.91
(Household heating with) heating equipment, except electric and warm a furnaces	4.77E-02	4.77E-02	1.00	4.75E-02	1.00
(use of) Household cooking equipment	1.11E-02	1.11E-02	1.00	1.10E-02	0.99
Poultry slaughtering and processing	3.28E-02	3.28E-02	1.00	3.28E-02	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 1 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 1 - All + first order	As fraction of Scenario 0
Natural, processed, and imitation cheese	1.71E-02	1.71E-02	1.00	1.71E-02	1.00
(use of) Household audio and video equipment	1.35E-02	1.35E-02	1.00	1.34E-02	1.00
Fluid milk	2.07E-02	2.07E-02	1.00	2.07E-02	1.00
Nitrogenous and phosphatic fertilizers	1.50E-03	1.50E-03	1.00	1.49E-03	1.00
Poultry and eggs	5.09E-03	5.09E-03	1.00	5.09E-03	1.00
Primary metal products, n.e.c.	1.78E-05	1.77E-05	1.00	1.77E-05	0.99
Prepared flour mixes and doughs	4.42E-03	4.65E-03	1.05	4.65E-03	1.05
Prepared feeds, n.e.c.	8.26E-04	8.27E-04	1.00	8.24E-04	1.00
(use of) Electric housewares and fans	2.33E-03	2.33E-03	1.00	2.32E-03	1.00
Dairy farm products	2.04E-04	2.04E-04	1.00	2.04E-04	1.00
Small arms ammunition	1.24E-04	1.24E-04	1.00	1.23E-04	1.00
Chemicals and chemical preparations, n.e.c.	5.26E-04	5.26E-04	1.00	5.24E-04	1.00
(use of) Household vacuum cleaners	2.57E-03	2.56E-03	1.00	2.55E-03	1.00
Dog and cat food	3.60E-03	3.60E-03	1.00	3.58E-03	1.00
Salted and roasted nuts and seeds	4.92E-04	4.92E-04	1.00	4.92E-04	1.00
Edible fats and oils, n.e.c.	1.02E-02	1.21E-02	1.18	1.21E-02	1.18
Products of petroleum and coal, n.e.c.	8.48E-06	8.51E-06	1.00	8.48E-06	1.00
Ice cream and frozen desserts	1.31E-03	1.13E-03	0.86	1.13E-03	0.86
Small arms	1.49E-04	1.49E-04	1.00	1.48E-04	1.00
Fruits	6.02E-03	7.58E-03	1.26	7.58E-03	1.26
Household furniture, n.e.c.	2.49E-04	2.49E-04	1.00	2.48E-04	1.00
Food preparations, n.e.c.	3.10E-03	3.10E-03	1.00	3.10E-03	1.00
Sanitary paper products	4.53E-03	4.53E-03	1.00	4.52E-03	1.00
Textile bags	1.92E-04	1.92E-04	1.00	1.91E-04	1.00
Frozen fruits, fruit juices, and vegetables	6.94E-03	8.47E-03	1.22	8.47E-03	1.22
Roasted coffee	6.44E-03	6.45E-03	1.00	6.45E-03	1.00
Creamery butter	1.18E-03	6.88E-04	0.58	6.88E-04	0.58
Cereal breakfast foods	5.28E-03	5.55E-03	1.05	5.55E-03	1.05
Dry, condensed, and evaporated dairy products	4.67E-03	4.66E-03	1.00	4.66E-03	1.00
Chocolate and cocoa products	3.06E-04	2.64E-04	0.86	2.64E-04	0.86
Feed grains	2.43E-04	2.43E-04	1.00	2.43E-04	1.00
Glass containers	7.85E-05	7.84E-05	1.00	7.81E-05	0.99

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 1 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 1 - All + first order	As fraction of Scenario 0
Automotive and apparel trimmings	2.14E-03	2.14E-03	1.00	2.13E-03	1.00
Cordage and twine	8.72E-05	8.73E-05	1.00	8.69E-05	1.00
Frozen specialties, n.e.c.	2.03E-03	2.03E-03	1.00	2.03E-03	1.00
Textile goods, n.e.c.	2.31E-05	2.31E-05	1.00	2.30E-05	1.00
Frozen bakery products, except bread	1.95E-03	2.06E-03	1.05	2.06E-03	1.05
Paper coating and glazing	2.68E-04	2.68E-04	1.00	2.67E-04	1.00
Adhesives and sealants	1.85E-04	1.85E-04	1.00	1.84E-04	1.00
Chemical and fertilizer minerals	1.10E-05	1.10E-05	1.00	1.09E-05	1.00
Shoes, except rubber	1.85E-03	1.85E-03	1.00	1.84E-03	1.00
Macaroni, spaghetti, vermicelli, and noodles	6.68E-04	7.03E-04	1.05	7.03E-04	1.05
Housefurnishings, n.e.c.	3.84E-03	3.85E-03	1.00	3.83E-03	1.00
Water transportation	8.29E-04	8.27E-04	1.00	8.23E-04	0.99
Concrete products, except block and brick	2.09E-06	2.09E-06	1.00	2.08E-06	1.00
Prefabricated metal buildings and components	4.05E-06	4.05E-06	1.00	4.03E-06	1.00
Paperboard containers and boxes	1.43E-04	1.43E-04	1.00	1.42E-04	1.00
Fabricated metal products, n.e.c.	1.54E-04	1.53E-04	1.00	1.53E-04	0.99
Converted paper products, n.e.c.	3.94E-04	3.95E-04	1.00	3.93E-04	1.00
Crude petroleum and natural gas	8.42E-04	8.40E-04	1.00	8.37E-04	0.99
Dehydrated fruits, vegetables, and soups	1.18E-03	1.49E-03	1.26	1.49E-03	1.26
Crowns and closures	4.35E-06	4.34E-06	1.00	4.33E-06	1.00
Miscellaneous plastics products, n.e.c.	3.10E-03	3.11E-03	1.00	3.09E-03	1.00
Rubber and plastics hose and belting	1.40E-04	1.40E-04	1.00	1.39E-04	0.99
Bags, except textile	5.80E-04	5.78E-04	1.00	5.76E-04	0.99
Vegetables	8.53E-03	1.00E-02	1.18	1.00E-02	1.18
(use of) Communication equipment	1.26E-03	1.26E-03	1.00	1.26E-03	0.99
Carpets and rugs	3.80E-03	3.80E-03	1.00	3.79E-03	1.00
Paints and allied products	6.82E-05	6.84E-05	1.00	6.81E-05	1.00
Leather gloves and mittens	4.57E-05	4.55E-05	1.00	4.53E-05	0.99
Lubricating oils and greases	4.56E-04	4.57E-04	1.00	4.55E-04	1.00
Canned fruits, vegetables, preserves, jams, and jellies	3.40E-03	2.94E-03	0.86	2.94E-03	0.86
Candy and other confectionery products	4.68E-03	4.04E-03	0.86	4.04E-03	0.86
Drugs	1.07E-02	1.07E-02	1.00	1.06E-02	0.99

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 1 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 1 - All + first order	As fraction of Scenario 0
Bottled and canned soft drinks	7.99E-03	6.91E-03	0.86	6.91E-03	0.86
Curtains and draperies	1.32E-03	1.32E-03	1.00	1.31E-03	1.00
(use of) Household appliances, n.e.c.	9.41E-03	9.39E-03	1.00	9.36E-03	0.99
Glass and glass products, except containers	7.59E-04	7.60E-04	1.00	7.57E-04	1.00
Potato chips and similar snacks	5.39E-03	5.38E-03	1.00	5.38E-03	1.00
Oil bearing crops	6.96E-05	6.96E-05	1.00	6.96E-05	1.00
Jewelry, precious metal	6.65E-04	6.66E-04	1.00	6.64E-04	1.00
Soap and other detergents	2.44E-03	2.44E-03	1.00	2.43E-03	1.00
Storage batteries	2.89E-04	2.89E-04	1.00	2.88E-04	1.00
Abrasive products	3.13E-05	3.13E-05	1.00	3.12E-05	1.00
Prepared fresh or frozen fish and seafoods	3.75E-03	4.46E-03	1.19	4.46E-03	1.19
Envelopes	8.19E-05	8.20E-05	1.00	8.17E-05	1.00
Fabricated rubber products, n.e.c.	6.32E-04	6.34E-04	1.00	6.31E-04	1.00
Canned specialties	7.56E-04	7.54E-04	1.00	7.54E-04	1.00
Metal household furniture	8.97E-04	8.97E-04	1.00	8.94E-04	1.00
Pickles, sauces, and salad dressings	7.26E-04	7.25E-04	1.00	7.25E-04	1.00
Metal stampings, n.e.c.	1.54E-04	1.54E-04	1.00	1.54E-04	1.00
Magnetic and optical recording media	1.22E-04	1.22E-04	1.00	1.22E-04	1.00
(use of) Telephone and telegraph apparatus	1.06E-03	1.06E-03	1.00	1.06E-03	1.00
Metal foil and leaf	6.44E-05	6.44E-05	1.00	6.42E-05	1.00
Steel springs, except wire	5.74E-06	5.74E-06	1.00	5.71E-06	1.00
Nonferrous wiredrawing and insulating	1.21E-05	1.21E-05	1.00	1.21E-05	0.99
Minerals, ground or treated	2.82E-05	2.82E-05	1.00	2.81E-05	1.00
Miscellaneous fabricated wire products	4.34E-05	4.33E-05	1.00	4.31E-05	0.99
Polishes and sanitation goods	3.33E-04	3.33E-04	1.00	3.32E-04	1.00
Lead pencils and art goods	6.26E-05	6.24E-05	1.00	6.22E-05	0.99
Trucking and courier services, except air	4.56E-04	4.55E-04	1.00	4.53E-04	0.99
Truck trailers	3.28E-04	3.28E-04	1.00	3.26E-04	1.00
Partitions and fixtures, except wood	2.46E-03	2.46E-03	1.00	2.45E-03	1.00
Rubber and plastics footwear	6.71E-04	6.72E-04	1.00	6.69E-04	1.00
Pleating and stitching	5.16E-04	5.15E-04	1.00	5.13E-04	0.99
Stationery, tablets, and related products	6.52E-05	6.51E-05	1.00	6.49E-05	0.99

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 1 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 1 - All + first order	As fraction of Scenario 0
Fine earthenware table and kitchenware	3.60E-05	3.60E-05	1.00	3.59E-05	1.00
Railroads and related services	3.58E-03	3.58E-03	1.00	3.57E-03	1.00
Cookies and crackers	3.90E-03	3.91E-03	1.00	3.91E-03	1.00
Truck and bus bodies	1.32E-03	1.32E-03	1.00	1.32E-03	1.00
Agricultural, forestry, and fishery services	1.23E-04	1.23E-04	1.00	1.23E-04	1.00
Canned and cured fish and seafoods	2.36E-03	2.80E-03	1.19	2.80E-03	1.19
Blowers and fans	2.83E-04	2.83E-04	1.00	2.82E-04	1.00
Pottery products, n.e.c.	1.67E-04	1.68E-04	1.00	1.67E-04	1.00
Gaskets, packing, and sealing devices	4.87E-05	4.86E-05	1.00	4.84E-05	0.99
Carbon paper and inked ribbons	6.41E-06	6.40E-06	1.00	6.37E-06	0.99
Wines, brandy, and brandy spirits	4.99E-03	4.98E-03	1.00	4.98E-03	1.00
Boat building and repairing	2.61E-04	2.61E-04	1.00	2.60E-04	1.00
Silverware and plated ware	2.42E-05	2.41E-05	1.00	2.41E-05	1.00
Primary batteries, dry and wet	2.36E-04	2.36E-04	1.00	2.35E-04	1.00
Bread, cake, and related products	8.62E-03	9.05E-03	1.05	9.05E-03	1.05
Hosiery, n.e.c.	5.08E-04	5.07E-04	1.00	5.05E-04	0.99
Luggage	4.03E-04	4.04E-04	1.00	4.02E-04	1.00
Eating and drinking places	6.42E-02	6.42E-02	1.00	6.39E-02	1.00
Women's hosiery, except socks	7.68E-04	7.69E-04	1.00	7.66E-04	1.00
Beauty and barber shops	1.07E-02	1.07E-02	1.00	1.07E-02	1.00
Internal combustion engines, n.e.c.	1.15E-04	1.15E-04	1.00	1.14E-04	1.00
Laundry, cleaning, garment services, and shoe repair	2.78E-03	2.78E-03	1.00	2.77E-03	1.00
Fasteners, buttons, needles, and pins	1.57E-05	1.57E-05	1.00	1.56E-05	1.00
Pipe, valves, and pipe fittings	1.42E-04	1.42E-04	1.00	1.42E-04	1.00
Hardware, n.e.c.	3.56E-05	3.56E-05	1.00	3.55E-05	1.00
Mattresses and bedsprings	1.25E-03	1.25E-03	1.00	1.24E-03	1.00
Brooms and brushes	5.32E-03	5.31E-03	1.00	5.29E-03	0.99
Commercial printing	1.05E-04	1.05E-04	1.00	1.05E-04	1.00
Women's handbags and purses	5.69E-05	5.69E-05	1.00	5.67E-05	1.00
Lighting fixtures and equipment	1.59E-04	1.59E-04	1.00	1.59E-04	1.00
Malt beverages	2.87E-03	2.87E-03	1.00	2.87E-03	1.00
Screw machine products, bolts, etc.	1.03E-05	1.04E-05	1.00	1.03E-05	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 1 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 1 - All + first order	As fraction of Scenario 0
Saw blades and handsaws	4.15E-05	4.15E-05	1.00	4.13E-05	0.99
Lawn and garden equipment	2.32E-04	2.32E-04	1.00	2.31E-04	1.00
Ship building and repairing	7.84E-05	7.84E-05	1.00	7.81E-05	1.00
Upholstered household furniture	2.17E-03	2.17E-03	1.00	2.16E-03	1.00
Other lodging places	3.12E-03	3.11E-03	1.00	3.10E-03	0.99
Wood products, n.e.c.	1.35E-04	1.35E-04	1.00	1.34E-04	1.00
Flavoring extracts and flavoring syrups, n.e.c.	8.32E-04	7.19E-04	0.86	7.19E-04	0.86
Air transportation	2.53E-03	2.53E-03	1.00	2.52E-03	1.00
Cut stone and stone products	1.92E-05	1.92E-05	1.00	1.92E-05	1.00
Marking devices	2.39E-06	2.39E-06	1.00	2.38E-06	1.00
Wiring devices	2.79E-06	2.79E-06	1.00	2.78E-06	1.00
Drapery hardware and window blinds and shades	6.05E-04	6.04E-04	1.00	6.02E-04	0.99
Games, toys, and children's vehicles	6.70E-04	6.70E-04	1.00	6.68E-04	1.00
Hospitals	1.60E-03	1.60E-03	1.00	1.59E-03	1.00
Mobile homes	3.25E-04	3.25E-04	1.00	3.23E-04	0.99
Wood television and radio cabinets	4.21E-06	4.21E-06	1.00	4.19E-06	1.00
Apparel made from purchased materials	1.50E-02	1.50E-02	1.00	1.50E-02	1.00
Personal leather goods, n.e.c.	8.45E-05	8.46E-05	1.00	8.43E-05	1.00
Water supply and sewerage systems	5.35E-03	5.36E-03	1.00	5.33E-03	1.00
Leather goods, n.e.c.	7.39E-05	7.38E-05	1.00	7.35E-05	0.99
Miscellaneous repair shops	5.53E-04	5.53E-04	1.00	5.50E-04	0.99
Toilet preparations	3.13E-03	3.14E-03	1.00	3.13E-03	1.00
Costume jewelry	9.54E-05	9.54E-05	1.00	9.50E-05	1.00
Warehousing and storage	3.13E-05	3.14E-05	1.00	3.12E-05	1.00
Hand and edge tools, except machine tools and handsaws	1.00E-04	1.00E-04	1.00	9.97E-05	1.00
Veterinary services	3.22E-04	3.22E-04	1.00	3.21E-04	1.00
Vitreous china table and kitchenware	2.17E-05	2.17E-05	1.00	2.16E-05	1.00
Advertising	1.72E-05	1.72E-05	1.00	1.71E-05	1.00
Dolls and stuffed toys	9.59E-05	9.60E-05	1.00	9.56E-05	1.00
Distilled and blended liquors	9.16E-04	9.16E-04	1.00	9.16E-04	1.00
Wood office furniture	8.38E-04	8.39E-04	1.00	8.35E-04	1.00
Other electronic components	1.90E-05	1.90E-05	1.00	1.90E-05	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 1 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 1 - All + first order	As fraction of Scenario 0
Sporting and athletic goods, n.e.c.	5.50E-04	5.50E-04	1.00	5.48E-04	0.99
Social services, n.e.c.	9.73E-04	9.73E-04	1.00	9.69E-04	1.00
Local and suburban transit and interurban highway passenger transportation	3.85E-03	3.85E-03	1.00	3.83E-03	1.00
Photographic equipment and supplies	8.11E-04	8.12E-04	1.00	8.08E-04	1.00
Wood household furniture, except upholstered	2.54E-03	2.53E-03	1.00	2.52E-03	0.99
Watch, clock, jewelry, and furniture repair	1.17E-03	1.17E-03	1.00	1.17E-03	1.00
Other membership organizations	4.41E-04	4.41E-04	1.00	4.39E-04	1.00
Travel trailers and campers	8.00E-05	7.99E-05	1.00	7.96E-05	0.99
New residential 2-4 unit structures, nonfarm	7.74E-04	7.74E-04	1.00	7.71E-04	1.00
Power-driven handtools	1.19E-04	1.19E-04	1.00	1.19E-04	1.00
Motorcycles, bicycles, and parts	1.16E-03	1.16E-03	1.00	1.15E-03	1.00
Blankbooks, looseleaf binders and devices	5.99E-05	5.98E-05	1.00	5.96E-05	0.99
Jewelers' materials and lapidary work	2.34E-04	2.33E-04	1.00	2.32E-04	0.99
House slippers	5.59E-05	5.59E-05	1.00	5.57E-05	1.00
New highways, bridges, and other horizontal construction	9.53E-05	9.52E-05	1.00	9.49E-05	1.00
Miscellaneous equipment rental and leasing	1.92E-03	1.92E-03	1.00	1.91E-03	1.00
Wood partitions and fixtures	1.02E-03	1.02E-03	1.00	1.02E-03	1.00
Canvas and related products	1.71E-04	1.71E-04	1.00	1.71E-04	1.00
Scales and balances, except laboratory	1.19E-04	1.19E-04	1.00	1.18E-04	1.00
Cutlery	1.22E-04	1.22E-04	1.00	1.21E-04	1.00
Portrait photographic studios, and other miscellaneous personal services	2.43E-03	2.44E-03	1.00	2.43E-03	1.00
Watches, clocks, watchcases, and parts	4.39E-05	4.40E-05	1.00	4.39E-05	1.00
Motor homes	9.02E-05	9.01E-05	1.00	8.97E-05	1.00
New additions & alterations, nonfarm, construction	1.50E-02	1.50E-02	1.00	1.49E-02	1.00
Automotive rental and leasing, without drivers	3.77E-03	3.78E-03	1.00	3.76E-03	1.00
Funeral service and crematories	1.38E-04	1.38E-04	1.00	1.37E-04	1.00
Pens, mechanical pencils, and parts	7.32E-05	7.32E-05	1.00	7.29E-05	1.00
Forestry products	1.33E-03	1.33E-03	1.00	1.33E-03	1.00
Greeting cards	3.03E-04	3.04E-04	1.00	3.03E-04	1.00
Manufactured ice	3.66E-05	3.16E-05	0.86	3.16E-05	0.86



e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 1 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 1 - All + first order	As fraction of Scenario 0
Furniture and fixtures, n.e.c.	7.86E-04	7.86E-04	1.00	7.83E-04	1.00
Cigars	2.35E-04	2.35E-04	1.00	2.34E-04	1.00
Residential care	3.24E-04	3.23E-04	1.00	3.22E-04	0.99
Labor organizations, civic, social, and fraternal associations	2.73E-04	2.73E-04	1.00	2.72E-04	1.00
Schiffli machine embroideries	1.91E-05	1.91E-05	1.00	1.90E-05	0.99
Business associations and professional membership organizations	5.94E-05	5.93E-05	1.00	5.91E-05	0.99
Hotels	4.46E-03	4.46E-03	1.00	4.45E-03	1.00
New farm residential construction	6.89E-04	6.88E-04	1.00	6.85E-04	0.99
Automotive repair shops and services	9.58E-03	9.58E-03	1.00	9.55E-03	1.00
New residential garden and high-rise apartments construction	5.24E-03	5.24E-03	1.00	5.21E-03	1.00
Commercial fishing	1.09E-03	1.29E-03	1.19	1.29E-03	1.19
Real estate agents, managers, operators, and lessors	3.00E-03	2.99E-03	1.00	2.98E-03	0.99
Bowling centers	1.08E-04	1.08E-04	1.00	1.08E-04	1.00
New residential 1 unit structures, nonfarm	2.64E-02	2.64E-02	1.00	2.63E-02	1.00
Periodicals	1.71E-03	1.71E-03	1.00	1.70E-03	1.00
Electrical repair shops	1.22E-03	1.22E-03	1.00	1.21E-03	1.00
Child day care services	3.37E-04	3.36E-04	1.00	3.35E-04	0.99
Cigarettes	5.83E-03	5.83E-03	1.00	5.81E-03	1.00
Transportation equipment, n.e.c.	8.95E-05	8.95E-05	1.00	8.91E-05	1.00
Ophthalmic goods	8.81E-04	8.81E-04	1.00	8.78E-04	1.00
Maintenance and repair of farm and nonfarm residential structures	5.84E-03	5.84E-03	1.00	5.82E-03	1.00
Signs and advertising specialties	3.08E-04	3.08E-04	1.00	3.07E-04	1.00
Physical fitness facilities and membership sports and recreation clubs	9.45E-04	9.45E-04	1.00	9.42E-04	1.00
Newspapers	1.66E-03	1.66E-03	1.00	1.65E-03	0.99
Book publishing	2.07E-03	2.06E-03	1.00	2.06E-03	0.99
Engineering, architectural, and surveying services	2.29E-04	2.29E-04	1.00	2.28E-04	1.00
Other business services	2.12E-03	2.12E-03	1.00	2.12E-03	1.00
Aircraft and missile engines and engine parts	9.73E-05	9.73E-05	1.00	9.69E-05	1.00
Nursing and personal care facilities	9.17E-04	9.17E-04	1.00	9.14E-04	1.00
Other amusement and recreation services	7.88E-03	7.87E-03	1.00	7.84E-03	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 1 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 1 - All + first order	As fraction of Scenario 0
Aircraft	4.38E-04	4.38E-04	1.00	4.36E-04	1.00
Services to dwellings and other buildings	1.76E-04	1.76E-04	1.00	1.75E-04	1.00
Accounting, auditing and bookkeeping, and miscellaneous services, n.e.c.	4.80E-06	4.80E-06	1.00	4.78E-06	1.00
Job training and related services	2.61E-04	2.61E-04	1.00	2.60E-04	1.00
Video tape rental	4.51E-04	4.51E-04	1.00	4.49E-04	1.00
Theatrical producers (except motion picture), bands, orchestras and entertainers	4.59E-04	4.59E-04	1.00	4.57E-04	1.00
Photofinishing labs and commercial photography	2.48E-04	2.48E-04	1.00	2.47E-04	0.99
Chewing and smoking tobacco and snuff	2.75E-04	2.76E-04	1.00	2.75E-04	1.00
Musical instruments	1.21E-04	1.20E-04	1.00	1.20E-04	1.00
(use of) Electronic computers	1.84E-03	1.84E-03	1.00	1.83E-03	0.99
Greenhouse and nursery products	1.64E-03	1.94E-03	1.18	1.94E-03	1.18
Instruments to measure electricity	5.29E-04	5.29E-04	1.00	5.27E-04	1.00
Automobile parking and car washes	7.13E-04	7.13E-04	1.00	7.11E-04	1.00
Miscellaneous publishing	1.64E-04	1.64E-04	1.00	1.63E-04	1.00
Racing, including track operation	2.21E-04	2.21E-04	1.00	2.20E-04	0.99
Radio and TV broadcasting	1.78E-04	1.78E-04	1.00	1.77E-04	0.99
Cable and other pay television services	1.51E-03	1.51E-03	1.00	1.51E-03	1.00
Motion picture services and theaters	4.78E-04	4.77E-04	1.00	4.75E-04	0.99
Elementary and secondary schools	8.20E-04	8.20E-04	1.00	8.17E-04	1.00
(use of) Computer peripheral equipment	1.17E-03	1.17E-03	1.00	1.17E-03	1.00
Prerecorded records and tapes	8.46E-05	8.45E-05	1.00	8.42E-05	1.00
Search and navigation equipment	1.11E-03	1.11E-03	1.00	1.10E-03	1.00
Colleges, universities, and professional schools	2.17E-03	2.18E-03	1.00	2.17E-03	1.00
Arrangement of passenger transportation	2.12E-05	2.12E-05	1.00	2.11E-05	1.00
Professional sports clubs and promoters	1.32E-04	1.32E-04	1.00	1.31E-04	0.99
Legal services	4.16E-04	4.16E-04	1.00	4.14E-04	1.00
Home health care services	1.23E-03	1.23E-03	1.00	1.22E-03	1.00
Telephone, telegraph communications, and communications services n.e.c.	8.98E-03	8.98E-03	1.00	8.95E-03	1.00
Private libraries, vocational schools, and educational services,	6.05E-04	6.06E-04	1.00	6.03E-04	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 1 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 1 - All + first order	As fraction of Scenario 0
n.e.c.					
Office machines, n.e.c.	3.68E-05	3.67E-05	1.00	3.66E-05	1.00
Calculating and accounting machines	3.36E-05	3.35E-05	1.00	3.34E-05	1.00
Religious organizations	2.00E-04	2.00E-04	1.00	1.99E-04	1.00
Doctors and dentists	3.62E-03	3.62E-03	1.00	3.61E-03	1.00
Detective and protective services	1.63E-05	1.63E-05	1.00	1.63E-05	1.00
Banking	3.16E-04	3.16E-04	1.00	3.15E-04	1.00
Insurance carriers	7.53E-03	7.53E-03	1.00	7.50E-03	1.00
Credit agencies other than banks	7.22E-05	7.25E-05	1.00	7.22E-05	1.00
Security and commodity brokers	2.21E-04	2.22E-04	1.00	2.21E-04	1.00
Personnel supply services	1.42E-05	1.42E-05	1.00	1.42E-05	0.99
Sum All	1.00	1.00		1.00	
Sum food	0.27	0.27		0.27	
Sum non food	0.73	0.73		0.73	

## 11 CHAPTER 5, ANNEX 8: CONTRIBUTION OF ALL PRODUCTS TO OVERALL ENVIRONMENTAL IMPACTS FOR SCENARIO 2

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 2 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 2 - All + first order	As fraction of Scenario 0
Nonwoven fabrics	5.06E-03	5.06E-03	1.00	5.10E-03	1.01
Miscellaneous crops	9.59E-06	1.00E-05	1.05	1.00E-05	1.05
(Household use of) pesticides and agricultural chemicals, n.e.c.	3.09E-02	3.10E-02	1.00	3.12E-02	1.01
Nonmetallic mineral products, n.e.c.	9.21E-05	9.22E-05	1.00	9.28E-05	1.01
Boot and shoe cut stock and findings	2.70E-06	2.71E-06	1.00	2.72E-06	1.01
Coal	8.36E-05	8.36E-05	1.00	8.41E-05	1.01
Gum and wood chemicals	2.10E-03	2.10E-03	1.00	2.11E-03	1.01
(use of) Electric lamp bulbs and tubes	1.51E-02	1.52E-02	1.00	1.53E-02	1.01
Tree nuts	1.02E-03	2.56E-03	2.52	2.56E-03	2.52
Sugar	1.75E-03	1.51E-03	0.86	1.51E-03	0.86
Sausages and other prepared pork products	1.07E-02	0.00E+00	0.00	0.00E+00	0.00
Pork packing plants	2.56E-02	1.55E-02	0.61	1.55E-02	0.61
(use of) Household refrigerators and freezers	2.10E-02	2.10E-02	1.00	2.12E-02	1.01
Postal Service	5.70E-03	5.70E-03	1.00	5.74E-03	1.01
Miscellaneous livestock	3.35E-03	1.41E-03	0.42	1.41E-03	0.42
(Washing with) household laundry equipment	2.78E-02	2.78E-02	1.00	2.80E-02	1.01
Sausages and other prepared beef products	8.83E-03	0.00E+00	0.00	0.00E+00	0.00
Fabricated textile products, n.e.c.	3.81E-03	3.80E-03	1.00	3.83E-03	1.01
(Driving with) motor vehicles and passenger car bodies	1.88E-01	1.88E-01	1.00	1.89E-01	1.01
Steel wiredrawing and steel nails and spikes	9.77E-07	9.75E-07	1.00	9.82E-07	1.00
Flour and other grain mill products	1.03E-03	1.13E-03	1.10	1.13E-03	1.10
Beef packing plants	2.01E-02	1.20E-02	0.60	1.20E-02	0.60
(Household heating with) heating equipment, except electric and warm a furnaces	4.77E-02	4.77E-02	1.00	4.80E-02	1.01
(use of) Household cooking equipment	1.11E-02	1.11E-02	1.00	1.11E-02	1.00
Poultry slaughtering and processing	3.28E-02	4.06E-02	1.24	4.06E-02	1.24
Natural, processed, and imitation cheese	1.71E-02	1.71E-02	1.00	1.71E-02	1.00
(use of) Household audio and video equipment	1.35E-02	1.35E-02	1.00	1.36E-02	1.01
Fluid milk	2.07E-02	2.07E-02	1.00	2.07E-02	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 2 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 2 - All + first order	As fraction of Scenario 0
Nitrogenous and phosphatic fertilizers	1.50E-03	1.50E-03	1.00	1.51E-03	1.01
Poultry and eggs	5.09E-03	5.09E-03	1.00	5.09E-03	1.00
Primary metal products, n.e.c.	1.78E-05	1.77E-05	1.00	1.79E-05	1.01
Prepared flour mixes and doughs	4.42E-03	4.89E-03	1.11	4.89E-03	1.11
Prepared feeds, n.e.c.	8.26E-04	8.27E-04	1.00	8.32E-04	1.01
(use of) Electric housewares and fans	2.33E-03	2.33E-03	1.00	2.34E-03	1.01
Dairy farm products	2.04E-04	2.04E-04	1.00	2.04E-04	1.00
Small arms ammunition	1.24E-04	1.24E-04	1.00	1.24E-04	1.01
Chemicals and chemical preparations, n.e.c.	5.26E-04	5.26E-04	1.00	5.29E-04	1.01
(use of) Household vacuum cleaners	2.57E-03	2.56E-03	1.00	2.58E-03	1.01
Dog and cat food	3.60E-03	3.60E-03	1.00	3.62E-03	1.01
Salted and roasted nuts and seeds	4.92E-04	1.08E-03	2.19	1.08E-03	2.19
Edible fats and oils, n.e.c.	1.02E-02	1.23E-02	1.20	1.23E-02	1.20
Products of petroleum and coal, n.e.c.	8.48E-06	8.51E-06	1.00	8.57E-06	1.01
Ice cream and frozen desserts	1.31E-03	1.13E-03	0.86	1.13E-03	0.86
Small arms	1.49E-04	1.49E-04	1.00	1.50E-04	1.01
Fruits	6.02E-03	7.58E-03	1.26	7.58E-03	1.26
Household furniture, n.e.c.	2.49E-04	2.49E-04	1.00	2.50E-04	1.01
Food preparations, n.e.c.	3.10E-03	3.10E-03	1.00	3.10E-03	1.00
Sanitary paper products	4.53E-03	4.53E-03	1.00	4.56E-03	1.01
Textile bags	1.92E-04	1.92E-04	1.00	1.94E-04	1.01
Frozen fruits, fruit juices, and vegetables	6.94E-03	8.47E-03	1.22	8.47E-03	1.22
Roasted coffee	6.44E-03	6.45E-03	1.00	6.45E-03	1.00
Creamery butter	1.18E-03	6.88E-04	0.58	6.88E-04	0.58
Cereal breakfast foods	5.28E-03	5.84E-03	1.11	5.84E-03	1.11
Dry, condensed, and evaporated dairy products	4.67E-03	4.66E-03	1.00	4.66E-03	1.00
Chocolate and cocoa products	3.06E-04	2.64E-04	0.86	2.64E-04	0.86
Feed grains	2.43E-04	2.43E-04	1.00	2.43E-04	1.00
Glass containers	7.85E-05	7.84E-05	1.00	7.89E-05	1.01
Automotive and apparel trimmings	2.14E-03	2.14E-03	1.00	2.16E-03	1.01
Cordage and twine	8.72E-05	8.73E-05	1.00	8.79E-05	1.01
Frozen specialties, n.e.c.	2.03E-03	2.03E-03	1.00	2.03E-03	1.00
Textile goods, n.e.c.	2.31E-05	2.31E-05	1.00	2.33E-05	1.01

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 2 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 2 - All + first order	As fraction of Scenario 0
Frozen bakery products, except bread	1.95E-03	2.16E-03	1.11	2.16E-03	1.11
Paper coating and glazing	2.68E-04	2.68E-04	1.00	2.70E-04	1.01
Adhesives and sealants	1.85E-04	1.85E-04	1.00	1.86E-04	1.01
Chemical and fertilizer minerals	1.10E-05	1.10E-05	1.00	1.11E-05	1.01
Shoes, except rubber	1.85E-03	1.85E-03	1.00	1.86E-03	1.01
Macaroni, spaghetti, vermicelli, and noodles	6.68E-04	7.39E-04	1.11	7.39E-04	1.11
Housefurnishings, n.e.c.	3.84E-03	3.85E-03	1.00	3.87E-03	1.01
Water transportation	8.29E-04	8.27E-04	1.00	8.32E-04	1.00
Concrete products, except block and brick	2.09E-06	2.09E-06	1.00	2.10E-06	1.01
Prefabricated metal buildings and components	4.05E-06	4.05E-06	1.00	4.07E-06	1.01
Paperboard containers and boxes	1.43E-04	1.43E-04	1.00	1.44E-04	1.01
Fabricated metal products, n.e.c.	1.54E-04	1.53E-04	1.00	1.54E-04	1.01
Converted paper products, n.e.c.	3.94E-04	3.95E-04	1.00	3.97E-04	1.01
Crude petroleum and natural gas	8.42E-04	8.40E-04	1.00	8.46E-04	1.00
Dehydrated fruits, vegetables, and soups	1.18E-03	1.49E-03	1.26	1.49E-03	1.26
Crowns and closures	4.35E-06	4.34E-06	1.00	4.37E-06	1.01
Miscellaneous plastics products, n.e.c.	3.10E-03	3.11E-03	1.00	3.13E-03	1.01
Rubber and plastics hose and belting	1.40E-04	1.40E-04	1.00	1.41E-04	1.01
Bags, except textile	5.80E-04	5.78E-04	1.00	5.82E-04	1.00
Vegetables	8.53E-03	1.00E-02	1.18	1.00E-02	1.18
(use of) Communication equipment	1.26E-03	1.26E-03	1.00	1.27E-03	1.00
Carpets and rugs	3.80E-03	3.80E-03	1.00	3.83E-03	1.01
Paints and allied products	6.82E-05	6.84E-05	1.00	6.89E-05	1.01
Leather gloves and mittens	4.57E-05	4.55E-05	1.00	4.58E-05	1.00
Lubricating oils and greases	4.56E-04	4.57E-04	1.00	4.60E-04	1.01
Canned fruits, vegetables, preserves, jams, and jellies	3.40E-03	2.94E-03	0.86	2.94E-03	0.86
Candy and other confectionery products	4.68E-03	4.04E-03	0.86	4.04E-03	0.86
Drugs	1.07E-02	1.07E-02	1.00	1.08E-02	1.00
Bottled and canned soft drinks	7.99E-03	6.91E-03	0.86	6.91E-03	0.86
Curtains and draperies	1.32E-03	1.32E-03	1.00	1.33E-03	1.01
(use of) Household appliances, n.e.c.	9.41E-03	9.39E-03	1.00	9.46E-03	1.01
Glass and glass products, except containers	7.59E-04	7.60E-04	1.00	7.65E-04	1.01
Potato chips and similar snacks	5.39E-03	5.38E-03	1.00	5.38E-03	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 2 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 2 - All + first order	As fraction of Scenario 0
Oil bearing crops	6.96E-05	6.96E-05	1.00	6.96E-05	1.00
Jewelry, precious metal	6.65E-04	6.66E-04	1.00	6.71E-04	1.01
Soap and other detergents	2.44E-03	2.44E-03	1.00	2.46E-03	1.01
Storage batteries	2.89E-04	2.89E-04	1.00	2.91E-04	1.01
Abrasive products	3.13E-05	3.13E-05	1.00	3.15E-05	1.01
Prepared fresh or frozen fish and seafoods	3.75E-03	4.46E-03	1.19	4.46E-03	1.19
Envelopes	8.19E-05	8.20E-05	1.00	8.26E-05	1.01
Fabricated rubber products, n.e.c.	6.32E-04	6.34E-04	1.00	6.38E-04	1.01
Canned specialties	7.56E-04	7.54E-04	1.00	7.54E-04	1.00
Metal household furniture	8.97E-04	8.97E-04	1.00	9.03E-04	1.01
Pickles, sauces, and salad dressings	7.26E-04	7.25E-04	1.00	7.25E-04	1.00
Metal stampings, n.e.c.	1.54E-04	1.54E-04	1.00	1.55E-04	1.01
Magnetic and optical recording media (use of) Telephone and telegraph apparatus	1.22E-04	1.22E-04	1.00	1.23E-04	1.01
Metal foil and leaf	1.06E-03	1.06E-03	1.00	1.07E-03	1.01
Metal foil and leaf	6.44E-05	6.44E-05	1.00	6.48E-05	1.01
Steel springs, except wire	5.74E-06	5.74E-06	1.00	5.77E-06	1.01
Nonferrous wiredrawing and insulating	1.21E-05	1.21E-05	1.00	1.22E-05	1.01
Minerals, ground or treated	2.82E-05	2.82E-05	1.00	2.84E-05	1.01
Miscellaneous fabricated wire products	4.34E-05	4.33E-05	1.00	4.36E-05	1.00
Polishes and sanitation goods	3.33E-04	3.33E-04	1.00	3.35E-04	1.01
Lead pencils and art goods	6.26E-05	6.24E-05	1.00	6.28E-05	1.00
Trucking and courier services, except air	4.56E-04	4.55E-04	1.00	4.58E-04	1.00
Truck trailers	3.28E-04	3.28E-04	1.00	3.30E-04	1.01
Partitions and fixtures, except wood	2.46E-03	2.46E-03	1.00	2.48E-03	1.01
Rubber and plastics footwear	6.71E-04	6.72E-04	1.00	6.76E-04	1.01
Pleating and stitching	5.16E-04	5.15E-04	1.00	5.19E-04	1.00
Stationery, tablets, and related products	6.52E-05	6.51E-05	1.00	6.56E-05	1.01
Fine earthenware table and kitchenware	3.60E-05	3.60E-05	1.00	3.63E-05	1.01
Railroads and related services	3.58E-03	3.58E-03	1.00	3.60E-03	1.01
Cookies and crackers	3.90E-03	3.91E-03	1.00	3.91E-03	1.00
Truck and bus bodies	1.32E-03	1.32E-03	1.00	1.33E-03	1.01
Agricultural, forestry, and fishery services	1.23E-04	1.23E-04	1.00	1.24E-04	1.01
Canned and cured fish and seafoods	2.36E-03	2.80E-03	1.19	2.80E-03	1.19

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 2 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 2 - All + first order	As fraction of Scenario 0
Blowers and fans	2.83E-04	2.83E-04	1.00	2.85E-04	1.01
Pottery products, n.e.c.	1.67E-04	1.68E-04	1.00	1.69E-04	1.01
Gaskets, packing, and sealing devices	4.87E-05	4.86E-05	1.00	4.89E-05	1.00
Carbon paper and inked ribbons	6.41E-06	6.40E-06	1.00	6.44E-06	1.00
Wines, brandy, and brandy spirits	4.99E-03	4.98E-03	1.00	4.98E-03	1.00
Boat building and repairing	2.61E-04	2.61E-04	1.00	2.63E-04	1.01
Silverware and plated ware	2.42E-05	2.41E-05	1.00	2.43E-05	1.01
Primary batteries, dry and wet	2.36E-04	2.36E-04	1.00	2.37E-04	1.01
Bread, cake, and related products	8.62E-03	9.52E-03	1.10	9.52E-03	1.10
Hosiery, n.e.c.	5.08E-04	5.07E-04	1.00	5.10E-04	1.01
Luggage	4.03E-04	4.04E-04	1.00	4.06E-04	1.01
Eating and drinking places	6.42E-02	6.42E-02	1.00	6.46E-02	1.01
Women's hosiery, except socks	7.68E-04	7.69E-04	1.00	7.74E-04	1.01
Beauty and barber shops	1.07E-02	1.07E-02	1.00	1.08E-02	1.01
Internal combustion engines, n.e.c.	1.15E-04	1.15E-04	1.00	1.16E-04	1.01
Laundry, cleaning, garment services, and shoe repair	2.78E-03	2.78E-03	1.00	2.80E-03	1.01
Fasteners, buttons, needles, and pins	1.57E-05	1.57E-05	1.00	1.58E-05	1.01
Pipe, valves, and pipe fittings	1.42E-04	1.42E-04	1.00	1.43E-04	1.01
Hardware, n.e.c.	3.56E-05	3.56E-05	1.00	3.59E-05	1.01
Mattresses and bedsprings	1.25E-03	1.25E-03	1.00	1.26E-03	1.01
Brooms and brushes	5.32E-03	5.31E-03	1.00	5.35E-03	1.01
Commercial printing	1.05E-04	1.05E-04	1.00	1.06E-04	1.01
Women's handbags and purses	5.69E-05	5.69E-05	1.00	5.73E-05	1.01
Lighting fixtures and equipment	1.59E-04	1.59E-04	1.00	1.60E-04	1.01
Malt beverages	2.87E-03	2.87E-03	1.00	2.87E-03	1.00
Screw machine products, bolts, etc.	1.03E-05	1.04E-05	1.00	1.04E-05	1.01
Saw blades and handsaws	4.15E-05	4.15E-05	1.00	4.17E-05	1.01
Lawn and garden equipment	2.32E-04	2.32E-04	1.00	2.33E-04	1.01
Ship building and repairing	7.84E-05	7.84E-05	1.00	7.89E-05	1.01
Upholstered household furniture	2.17E-03	2.17E-03	1.00	2.19E-03	1.01
Other lodging places	3.12E-03	3.11E-03	1.00	3.13E-03	1.00
Wood products, n.e.c.	1.35E-04	1.35E-04	1.00	1.36E-04	1.01
Flavoring extracts and flavoring syrups, n.e.c.	8.32E-04	7.19E-04	0.86	7.19E-04	0.86



e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 2 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 2 - All + first order	As fraction of Scenario 0
Air transportation	2.53E-03	2.53E-03	1.00	2.55E-03	1.01
Cut stone and stone products	1.92E-05	1.92E-05	1.00	1.94E-05	1.01
Marking devices	2.39E-06	2.39E-06	1.00	2.41E-06	1.01
Wiring devices	2.79E-06	2.79E-06	1.00	2.81E-06	1.01
Drapery hardware and window blinds and shades	6.05E-04	6.04E-04	1.00	6.08E-04	1.01
Games, toys, and children's vehicles	6.70E-04	6.70E-04	1.00	6.75E-04	1.01
Hospitals	1.60E-03	1.60E-03	1.00	1.61E-03	1.01
Mobile homes	3.25E-04	3.25E-04	1.00	3.27E-04	1.00
Wood television and radio cabinets	4.21E-06	4.21E-06	1.00	4.24E-06	1.01
Apparel made from purchased materials	1.50E-02	1.50E-02	1.00	1.51E-02	1.01
Personal leather goods, n.e.c.	8.45E-05	8.46E-05	1.00	8.52E-05	1.01
Water supply and sewerage systems	5.35E-03	5.36E-03	1.00	5.39E-03	1.01
Leather goods, n.e.c.	7.39E-05	7.38E-05	1.00	7.43E-05	1.01
Miscellaneous repair shops	5.53E-04	5.53E-04	1.00	5.56E-04	1.01
Toilet preparations	3.13E-03	3.14E-03	1.00	3.16E-03	1.01
Costume jewelry	9.54E-05	9.54E-05	1.00	9.60E-05	1.01
Warehousing and storage	3.13E-05	3.14E-05	1.00	3.16E-05	1.01
Hand and edge tools, except machine tools and handsaws	1.00E-04	1.00E-04	1.00	1.01E-04	1.01
Veterinary services	3.22E-04	3.22E-04	1.00	3.24E-04	1.01
Vitreous china table and kitchenware	2.17E-05	2.17E-05	1.00	2.18E-05	1.01
Advertising	1.72E-05	1.72E-05	1.00	1.73E-05	1.01
Dolls and stuffed toys	9.59E-05	9.60E-05	1.00	9.66E-05	1.01
Distilled and blended liquors	9.16E-04	9.16E-04	1.00	9.16E-04	1.00
Wood office furniture	8.38E-04	8.39E-04	1.00	8.44E-04	1.01
Other electronic components	1.90E-05	1.90E-05	1.00	1.92E-05	1.01
Sporting and athletic goods, n.e.c.	5.50E-04	5.50E-04	1.00	5.53E-04	1.01
Social services, n.e.c.	9.73E-04	9.73E-04	1.00	9.80E-04	1.01
Local and suburban transit and interurban highway passenger transportation	3.85E-03	3.85E-03	1.00	3.87E-03	1.01
Photographic equipment and supplies	8.11E-04	8.12E-04	1.00	8.17E-04	1.01
Wood household furniture, except upholstered	2.54E-03	2.53E-03	1.00	2.55E-03	1.00
Watch, clock, jewelry, and furniture repair	1.17E-03	1.17E-03	1.00	1.18E-03	1.01
Other membership organizations	4.41E-04	4.41E-04	1.00	4.44E-04	1.01
Travel trailers and campers	8.00E-05	7.99E-05	1.00	8.04E-05	1.01

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 2 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 2 - All + first order	As fraction of Scenario 0
New residential 2-4 unit structures, nonfarm	7.74E-04	7.74E-04	1.00	7.79E-04	1.01
Power-driven handtools	1.19E-04	1.19E-04	1.00	1.20E-04	1.01
Motorcycles, bicycles, and parts	1.16E-03	1.16E-03	1.00	1.16E-03	1.01
Blankbooks, looseleaf binders and devices	5.99E-05	5.98E-05	1.00	6.02E-05	1.01
Jewelers' materials and lapidary work	2.34E-04	2.33E-04	1.00	2.35E-04	1.00
House slippers	5.59E-05	5.59E-05	1.00	5.63E-05	1.01
New highways, bridges, and other horizontal construction	9.53E-05	9.52E-05	1.00	9.59E-05	1.01
Miscellaneous equipment rental and leasing	1.92E-03	1.92E-03	1.00	1.93E-03	1.01
Wood partitions and fixtures	1.02E-03	1.02E-03	1.00	1.03E-03	1.01
Canvas and related products	1.71E-04	1.71E-04	1.00	1.72E-04	1.01
Scales and balances, except laboratory	1.19E-04	1.19E-04	1.00	1.20E-04	1.01
Cutlery	1.22E-04	1.22E-04	1.00	1.22E-04	1.01
Portrait photographic studios, and other miscellaneous personal services	2.43E-03	2.44E-03	1.00	2.45E-03	1.01
Watches, clocks, watchcases, and parts	4.39E-05	4.40E-05	1.00	4.43E-05	1.01
Motor homes	9.02E-05	9.01E-05	1.00	9.07E-05	1.01
New additions & alterations, nonfarm, construction	1.50E-02	1.50E-02	1.00	1.51E-02	1.01
Automotive rental and leasing, without drivers	3.77E-03	3.78E-03	1.00	3.80E-03	1.01
Funeral service and crematories	1.38E-04	1.38E-04	1.00	1.38E-04	1.01
Pens, mechanical pencils, and parts	7.32E-05	7.32E-05	1.00	7.37E-05	1.01
Forestry products	1.33E-03	1.33E-03	1.00	1.34E-03	1.01
Greeting cards	3.03E-04	3.04E-04	1.00	3.06E-04	1.01
Manufactured ice	3.66E-05	3.16E-05	0.86	3.16E-05	0.86
Furniture and fixtures, n.e.c.	7.86E-04	7.86E-04	1.00	7.92E-04	1.01
Cigars	2.35E-04	2.35E-04	1.00	2.37E-04	1.01
Residential care	3.24E-04	3.23E-04	1.00	3.26E-04	1.01
Labor organizations, civic, social, and fraternal associations	2.73E-04	2.73E-04	1.00	2.75E-04	1.01
Schiffli machine embroideries	1.91E-05	1.91E-05	1.00	1.92E-05	1.01
Business associations and professional membership organizations	5.94E-05	5.93E-05	1.00	5.97E-05	1.01
Hotels	4.46E-03	4.46E-03	1.00	4.49E-03	1.01
New farm residential construction	6.89E-04	6.88E-04	1.00	6.93E-04	1.01
Automotive repair shops and services	9.58E-03	9.58E-03	1.00	9.65E-03	1.01
New residential garden and high-rise apartments construction	5.24E-03	5.24E-03	1.00	5.27E-03	1.01

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 2 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 2 - All + first order	As fraction of Scenario 0
Commercial fishing	1.09E-03	1.29E-03	1.19	1.29E-03	1.19
Real estate agents, managers, operators, and lessors	3.00E-03	2.99E-03	1.00	3.01E-03	1.00
Bowling centers	1.08E-04	1.08E-04	1.00	1.09E-04	1.01
New residential 1 unit structures, nonfarm	2.64E-02	2.64E-02	1.00	2.65E-02	1.01
Periodicals	1.71E-03	1.71E-03	1.00	1.72E-03	1.01
Electrical repair shops	1.22E-03	1.22E-03	1.00	1.22E-03	1.01
Child day care services	3.37E-04	3.36E-04	1.00	3.39E-04	1.00
Cigarettes	5.83E-03	5.83E-03	1.00	5.87E-03	1.01
Transportation equipment, n.e.c.	8.95E-05	8.95E-05	1.00	9.01E-05	1.01
Ophthalmic goods	8.81E-04	8.81E-04	1.00	8.87E-04	1.01
Maintenance and repair of farm and nonfarm residential structures	5.84E-03	5.84E-03	1.00	5.88E-03	1.01
Signs and advertising specialties	3.08E-04	3.08E-04	1.00	3.10E-04	1.01
Physical fitness facilities and membership sports and recreation clubs	9.45E-04	9.45E-04	1.00	9.52E-04	1.01
Newspapers	1.66E-03	1.66E-03	1.00	1.67E-03	1.00
Book publishing	2.07E-03	2.06E-03	1.00	2.08E-03	1.00
Engineering, architectural, and surveying services	2.29E-04	2.29E-04	1.00	2.30E-04	1.01
Other business services	2.12E-03	2.12E-03	1.00	2.14E-03	1.01
Aircraft and missile engines and engine parts	9.73E-05	9.73E-05	1.00	9.79E-05	1.01
Nursing and personal care facilities	9.17E-04	9.17E-04	1.00	9.23E-04	1.01
Other amusement and recreation services	7.88E-03	7.87E-03	1.00	7.93E-03	1.01
Aircraft	4.38E-04	4.38E-04	1.00	4.41E-04	1.01
Services to dwellings and other buildings	1.76E-04	1.76E-04	1.00	1.77E-04	1.01
Accounting, auditing and bookkeeping, and miscellaneous services, n.e.c.	4.80E-06	4.80E-06	1.00	4.83E-06	1.01
Job training and related services	2.61E-04	2.61E-04	1.00	2.63E-04	1.01
Video tape rental	4.51E-04	4.51E-04	1.00	4.54E-04	1.01
Theatrical producers (except motion picture), bands, orchestras and entertainers	4.59E-04	4.59E-04	1.00	4.62E-04	1.01
Photofinishing labs and commercial photography	2.48E-04	2.48E-04	1.00	2.49E-04	1.00
Chewing and smoking tobacco and snuff	2.75E-04	2.76E-04	1.00	2.78E-04	1.01
Musical instruments	1.21E-04	1.20E-04	1.00	1.21E-04	1.01
(use of) Electronic computers	1.84E-03	1.84E-03	1.00	1.85E-03	1.00
Greenhouse and nursery products	1.64E-03	1.94E-03	1.18	1.94E-03	1.18

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 2 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 2 - All + first order	As fraction of Scenario 0
Instruments to measure electricity	5.29E-04	5.29E-04	1.00	5.33E-04	1.01
Automobile parking and car washes	7.13E-04	7.13E-04	1.00	7.18E-04	1.01
Miscellaneous publishing	1.64E-04	1.64E-04	1.00	1.65E-04	1.01
Racing, including track operation	2.21E-04	2.21E-04	1.00	2.22E-04	1.01
Radio and TV broadcasting	1.78E-04	1.78E-04	1.00	1.79E-04	1.00
Cable and other pay television services	1.51E-03	1.51E-03	1.00	1.52E-03	1.01
Motion picture services and theaters	4.78E-04	4.77E-04	1.00	4.80E-04	1.01
Elementary and secondary schools	8.20E-04	8.20E-04	1.00	8.26E-04	1.01
(use of) Computer peripheral equipment	1.17E-03	1.17E-03	1.00	1.18E-03	1.01
Prerecorded records and tapes	8.46E-05	8.45E-05	1.00	8.51E-05	1.01
Search and navigation equipment	1.11E-03	1.11E-03	1.00	1.12E-03	1.01
Colleges, universities, and professional schools	2.17E-03	2.18E-03	1.00	2.19E-03	1.01
Arrangement of passenger transportation	2.12E-05	2.12E-05	1.00	2.14E-05	1.01
Professional sports clubs and promoters	1.32E-04	1.32E-04	1.00	1.33E-04	1.01
Legal services	4.16E-04	4.16E-04	1.00	4.18E-04	1.01
Home health care services	1.23E-03	1.23E-03	1.00	1.24E-03	1.01
Telephone, telegraph communications, and communications services n.e.c.	8.98E-03	8.98E-03	1.00	9.04E-03	1.01
Private libraries, vocational schools, and educational services, n.e.c.	6.05E-04	6.06E-04	1.00	6.10E-04	1.01
Office machines, n.e.c.	3.68E-05	3.67E-05	1.00	3.70E-05	1.01
Calculating and accounting machines	3.36E-05	3.35E-05	1.00	3.38E-05	1.01
Religious organizations	2.00E-04	2.00E-04	1.00	2.01E-04	1.01
Doctors and dentists	3.62E-03	3.62E-03	1.00	3.65E-03	1.01
Detective and protective services	1.63E-05	1.63E-05	1.00	1.64E-05	1.01
Banking	3.16E-04	3.16E-04	1.00	3.18E-04	1.01
Insurance carriers	7.53E-03	7.53E-03	1.00	7.58E-03	1.01
Credit agencies other than banks	7.22E-05	7.25E-05	1.00	7.29E-05	1.01
Security and commodity brokers	2.21E-04	2.22E-04	1.00	2.23E-04	1.01
Personnel supply services	1.42E-05	1.42E-05	1.00	1.43E-05	1.01
Sum All	1.00	0.98		0.98	
Sum food	0.27	0.25		0.25	
Sum non food	0.73	0.73		0.74	

## 12 CHAPTER 5, ANNEX 9: CONTRIBUTION OF ALL PRODUCTS TO OVERALL ENVIRONMENTAL IMPACTS FOR SCENARIO 3

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 3 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 3 - All + first order	As fraction of Scenario 0
Nonwoven fabrics	5.06E-03	5.06E-03	1.00	5.07E-03	1.00
Miscellaneous crops	9.59E-06	9.43E-06	0.98	9.43E-06	0.98
(Household use of) pesticides and agricultural chemicals, n.e.c.	3.09E-02	3.10E-02	1.00	3.10E-02	1.00
Non-metallic mineral products, n.e.c.	9.21E-05	9.22E-05	1.00	9.23E-05	1.00
Boot and shoe cut stock and findings	2.70E-06	2.71E-06	1.00	2.71E-06	1.00
Coal	8.36E-05	8.36E-05	1.00	8.37E-05	1.00
Gum and wood chemicals	2.10E-03	2.10E-03	1.00	2.10E-03	1.00
(use of) Electric lamp bulbs and tubes	1.51E-02	1.52E-02	1.00	1.52E-02	1.00
Tree nuts	1.02E-03	1.65E-03	1.62	1.65E-03	1.62
Sugar	1.75E-03	1.34E-03	0.77	1.34E-03	0.77
Sausages and other prepared pork products	1.07E-02	4.41E-03	0.41	4.41E-03	0.41
Pork packing plants	2.56E-02	1.05E-02	0.41	1.05E-02	0.41
(use of) Household refrigerators and freezers	2.10E-02	2.10E-02	1.00	2.11E-02	1.00
Postal Service	5.70E-03	5.70E-03	1.00	5.71E-03	1.00
Miscellaneous livestock	3.35E-03	1.38E-03	0.41	1.38E-03	0.41
(Washing with) household laundry equipment	2.78E-02	2.78E-02	1.00	2.78E-02	1.00
Sausages and other prepared beef products	8.83E-03	3.64E-03	0.41	3.64E-03	0.41
Fabricated textile products, n.e.c.	3.81E-03	3.80E-03	1.00	3.81E-03	1.00
(Driving with) motor vehicles and passenger car bodies	1.88E-01	1.88E-01	1.00	1.88E-01	1.00
Steel wiredrawing and steel nails and spikes	9.77E-07	9.75E-07	1.00	9.77E-07	1.00
Flour and other grain mill products	1.03E-03	1.18E-03	1.14	1.18E-03	1.14
Beef packing plants	2.01E-02	8.30E-03	0.41	8.30E-03	0.41
(Household heating with) heating equipment, except electric and warm a furnaces	4.77E-02	4.77E-02	1.00	4.78E-02	1.00
(use of) Household cooking equipment	1.11E-02	1.11E-02	1.00	1.11E-02	1.00
Poultry slaughtering and processing	3.28E-02	4.22E-02	1.29	4.22E-02	1.29
Natural, processed, and imitation cheese	1.71E-02	1.55E-02	0.91	1.55E-02	0.91
(use of) Household audio and video equipment	1.35E-02	1.35E-02	1.00	1.35E-02	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 3 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 3 - All + first order	As fraction of Scenario 0
Fluid milk	2.07E-02	1.88E-02	0.91	1.88E-02	0.91
Nitrogenous and phosphatic fertilizers	1.50E-03	1.50E-03	1.00	1.50E-03	1.00
Poultry and eggs	5.09E-03	4.79E-03	0.94	4.79E-03	0.94
Primary metal products, n.e.c.	1.78E-05	1.77E-05	1.00	1.78E-05	1.00
Prepared flour mixes and doughs	4.42E-03	5.06E-03	1.15	5.06E-03	1.15
Prepared feeds, n.e.c.	8.26E-04	8.27E-04	1.00	8.28E-04	1.00
(use of) Electric house wares and fans	2.33E-03	2.33E-03	1.00	2.33E-03	1.00
Dairy farm products	2.04E-04	1.85E-04	0.91	1.85E-04	0.91
Small arms ammunition	1.24E-04	1.24E-04	1.00	1.24E-04	1.00
Chemicals and chemical preparations, n.e.c.	5.26E-04	5.26E-04	1.00	5.27E-04	1.00
(use of) Household vacuum cleaners	2.57E-03	2.56E-03	1.00	2.57E-03	1.00
Dog and cat food	3.60E-03	3.60E-03	1.00	3.60E-03	1.00
Salted and roasted nuts and seeds	4.92E-04	7.63E-04	1.55	7.63E-04	1.55
Edible fats and oils, n.e.c.	1.02E-02	1.44E-02	1.41	1.44E-02	1.41
Products of petroleum and coal, n.e.c.	8.48E-06	8.51E-06	1.00	8.53E-06	1.01
Ice cream and frozen desserts	1.31E-03	1.01E-03	0.77	1.01E-03	0.77
Small arms	1.49E-04	1.49E-04	1.00	1.49E-04	1.00
Fruits	6.02E-03	7.15E-03	1.19	7.15E-03	1.19
Household furniture, n.e.c.	2.49E-04	2.49E-04	1.00	2.49E-04	1.00
Food preparations, n.e.c.	3.10E-03	3.10E-03	1.00	3.10E-03	1.00
Sanitary paper products	4.53E-03	4.53E-03	1.00	4.54E-03	1.00
Textile bags	1.92E-04	1.92E-04	1.00	1.93E-04	1.00
Frozen fruits, fruit juices, and vegetables	6.94E-03	8.23E-03	1.19	8.23E-03	1.19
Roasted coffee	6.44E-03	6.45E-03	1.00	6.45E-03	1.00
Creamery butter	1.18E-03	6.20E-04	0.52	6.20E-04	0.52
Cereal breakfast foods	5.28E-03	6.05E-03	1.15	6.05E-03	1.15
Dry, condensed, and evaporated dairy products	4.67E-03	4.23E-03	0.91	4.23E-03	0.91
Chocolate and cocoa products	3.06E-04	2.35E-04	0.77	2.35E-04	0.77
Feed grains	2.43E-04	2.43E-04	1.00	2.43E-04	1.00
Glass containers	7.85E-05	7.84E-05	1.00	7.85E-05	1.00
Automotive and apparel trimmings	2.14E-03	2.14E-03	1.00	2.15E-03	1.00
Cordage and twine	8.72E-05	8.73E-05	1.00	8.74E-05	1.00
Frozen specialties, n.e.c.	2.03E-03	2.03E-03	1.00	2.03E-03	1.00
Textile goods, n.e.c.	2.31E-05	2.31E-05	1.00	2.32E-05	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 3 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 3 - All + first order	As fraction of Scenario 0
Frozen bakery products, except bread	1.95E-03	2.24E-03	1.15	2.24E-03	1.15
Paper coating and glazing	2.68E-04	2.68E-04	1.00	2.68E-04	1.00
Adhesives and sealants	1.85E-04	1.85E-04	1.00	1.85E-04	1.00
Chemical and fertilizer minerals	1.10E-05	1.10E-05	1.00	1.10E-05	1.00
Shoes, except rubber	1.85E-03	1.85E-03	1.00	1.85E-03	1.00
Macaroni, spaghetti, vermicelli, and noodles	6.68E-04	7.65E-04	1.15	7.65E-04	1.15
House furnishings, n.e.c.	3.84E-03	3.85E-03	1.00	3.85E-03	1.00
Water transportation	8.29E-04	8.27E-04	1.00	8.28E-04	1.00
Concrete products, except block and brick	2.09E-06	2.09E-06	1.00	2.09E-06	1.00
Prefabricated metal buildings and components	4.05E-06	4.05E-06	1.00	4.05E-06	1.00
Paperboard containers and boxes	1.43E-04	1.43E-04	1.00	1.43E-04	1.00
Fabricated metal products, n.e.c.	1.54E-04	1.53E-04	1.00	1.54E-04	1.00
Converted paper products, n.e.c.	3.94E-04	3.95E-04	1.00	3.95E-04	1.00
Crude petroleum and natural gas	8.42E-04	8.40E-04	1.00	8.42E-04	1.00
Dehydrated fruits, vegetables, and soups	1.18E-03	1.40E-03	1.19	1.40E-03	1.19
Crowns and closures	4.35E-06	4.34E-06	1.00	4.35E-06	1.00
Miscellaneous plastics products, n.e.c.	3.10E-03	3.11E-03	1.00	3.11E-03	1.00
Rubber and plastics hose and belting	1.40E-04	1.40E-04	1.00	1.40E-04	1.00
Bags, except textile	5.80E-04	5.78E-04	1.00	5.79E-04	1.00
Vegetables	8.53E-03	1.04E-02	1.22	1.04E-02	1.22
(use of) Communication equipment	1.26E-03	1.26E-03	1.00	1.26E-03	1.00
Carpets and rugs	3.80E-03	3.80E-03	1.00	3.81E-03	1.00
Paints and allied products	6.82E-05	6.84E-05	1.00	6.85E-05	1.00
Leather gloves and mittens	4.57E-05	4.55E-05	1.00	4.56E-05	1.00
Lubricating oils and greases	4.56E-04	4.57E-04	1.00	4.57E-04	1.00
Canned fruits, vegetables, preserves, jams, and jellies	3.40E-03	2.61E-03	0.77	2.61E-03	0.77
Candy and other confectionery products	4.68E-03	3.59E-03	0.77	3.59E-03	0.77
Drugs	1.07E-02	1.07E-02	1.00	1.07E-02	1.00
Bottled and canned soft drinks	7.99E-03	6.14E-03	0.77	6.14E-03	0.77
Curtains and draperies	1.32E-03	1.32E-03	1.00	1.32E-03	1.00
(use of) Household appliances, n.e.c.	9.41E-03	9.39E-03	1.00	9.41E-03	1.00
Glass and glass products, except containers	7.59E-04	7.60E-04	1.00	7.61E-04	1.00
Potato chips and similar snacks	5.39E-03	5.15E-03	0.96	5.15E-03	0.96
Oil bearing crops	6.96E-05	9.27E-05	1.33	9.27E-05	1.33

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 3 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 3 - All + first order	As fraction of Scenario 0
Jewellery, precious metal	6.65E-04	6.66E-04	1.00	6.67E-04	1.00
Soap and other detergents	2.44E-03	2.44E-03	1.00	2.45E-03	1.00
Storage batteries	2.89E-04	2.89E-04	1.00	2.90E-04	1.00
Abrasive products	3.13E-05	3.13E-05	1.00	3.14E-05	1.00
Prepared fresh or frozen fish and seafood	3.75E-03	7.33E-03	1.95	7.33E-03	1.95
Envelopes	8.19E-05	8.20E-05	1.00	8.21E-05	1.00
Fabricated rubber products, n.e.c.	6.32E-04	6.34E-04	1.00	6.35E-04	1.00
Canned specialties	7.56E-04	7.54E-04	1.00	7.54E-04	1.00
Metal household furniture	8.97E-04	8.97E-04	1.00	8.99E-04	1.00
Pickles, sauces, and salad dressings	7.26E-04	7.25E-04	1.00	7.25E-04	1.00
Metal stampings, n.e.c.	1.54E-04	1.54E-04	1.00	1.55E-04	1.00
Magnetic and optical recording media (use of) Telephone and telegraph apparatus	1.22E-04	1.22E-04	1.00	1.22E-04	1.00
Metal foil and leaf	1.06E-03	1.06E-03	1.00	1.06E-03	1.00
Steel springs, except wire	6.44E-05	6.44E-05	1.00	6.45E-05	1.00
Nonferrous wiredrawing and insulating	5.74E-06	5.74E-06	1.00	5.75E-06	1.00
Minerals, ground or treated	1.21E-05	1.21E-05	1.00	1.21E-05	1.00
Minerals, ground or treated	2.82E-05	2.82E-05	1.00	2.82E-05	1.00
Miscellaneous fabricated wire products	4.34E-05	4.33E-05	1.00	4.33E-05	1.00
Polishes and sanitation goods	3.33E-04	3.33E-04	1.00	3.33E-04	1.00
Lead pencils and art goods	6.26E-05	6.24E-05	1.00	6.25E-05	1.00
Trucking and courier services, except air	4.56E-04	4.55E-04	1.00	4.56E-04	1.00
Truck trailers	3.28E-04	3.28E-04	1.00	3.28E-04	1.00
Partitions and fixtures, except wood	2.46E-03	2.46E-03	1.00	2.46E-03	1.00
Rubber and plastics footwear	6.71E-04	6.72E-04	1.00	6.73E-04	1.00
Pleating and stitching	5.16E-04	5.15E-04	1.00	5.16E-04	1.00
Stationery, tablets, and related products	6.52E-05	6.51E-05	1.00	6.52E-05	1.00
Fine earthenware table and kitchenware	3.60E-05	3.60E-05	1.00	3.61E-05	1.00
Railroads and related services	3.58E-03	3.58E-03	1.00	3.59E-03	1.00
Cookies and crackers	3.90E-03	4.47E-03	1.15	4.47E-03	1.15
Truck and bus bodies	1.32E-03	1.32E-03	1.00	1.32E-03	1.00
Agricultural, forestry, and fishery services	1.23E-04	1.23E-04	1.00	1.23E-04	1.00
Canned and cured fish and seafood	2.36E-03	4.60E-03	1.95	4.60E-03	1.95
Blowers and fans	2.83E-04	2.83E-04	1.00	2.84E-04	1.00
Pottery products, n.e.c.	1.67E-04	1.68E-04	1.00	1.68E-04	1.00



e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 3 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 3 - All + first order	As fraction of Scenario 0
Gaskets, packing, and sealing devices	4.87E-05	4.86E-05	1.00	4.87E-05	1.00
Carbon paper and inked ribbons	6.41E-06	6.40E-06	1.00	6.41E-06	1.00
Wines, brandy, and brandy spirits	4.99E-03	4.58E-03	0.92	4.58E-03	0.92
Boat building and repairing	2.61E-04	2.61E-04	1.00	2.61E-04	1.00
Silverware and plated ware	2.42E-05	2.41E-05	1.00	2.42E-05	1.00
Primary batteries, dry and wet	2.36E-04	2.36E-04	1.00	2.36E-04	1.00
Bread, cake, and related products	8.62E-03	9.86E-03	1.14	9.86E-03	1.14
Hosiery, n.e.c.	5.08E-04	5.07E-04	1.00	5.08E-04	1.00
Luggage	4.03E-04	4.04E-04	1.00	4.04E-04	1.00
Eating and drinking places	6.42E-02	6.42E-02	1.00	6.43E-02	1.00
Women's hosiery, except socks	7.68E-04	7.69E-04	1.00	7.70E-04	1.00
Beauty and barber shops	1.07E-02	1.07E-02	1.00	1.07E-02	1.00
Internal combustion engines, n.e.c.	1.15E-04	1.15E-04	1.00	1.15E-04	1.00
Laundry, cleaning, garment services, and shoe repair	2.78E-03	2.78E-03	1.00	2.79E-03	1.00
Fasteners, buttons, needles, and pins	1.57E-05	1.57E-05	1.00	1.57E-05	1.00
Pipe, valves, and pipe fittings	1.42E-04	1.42E-04	1.00	1.42E-04	1.00
Hardware, n.e.c.	3.56E-05	3.56E-05	1.00	3.57E-05	1.00
Mattresses and bedsprings	1.25E-03	1.25E-03	1.00	1.25E-03	1.00
Brooms and brushes	5.32E-03	5.31E-03	1.00	5.32E-03	1.00
Commercial printing	1.05E-04	1.05E-04	1.00	1.05E-04	1.00
Women's handbags and purses	5.69E-05	5.69E-05	1.00	5.70E-05	1.00
Lighting fixtures and equipment	1.59E-04	1.59E-04	1.00	1.60E-04	1.00
Malt beverages	2.87E-03	2.64E-03	0.92	2.64E-03	0.92
Screw machine products, bolts, etc.	1.03E-05	1.04E-05	1.00	1.04E-05	1.00
Saw blades and handsaws	4.15E-05	4.15E-05	1.00	4.15E-05	1.00
Lawn and garden equipment	2.32E-04	2.32E-04	1.00	2.32E-04	1.00
Ship building and repairing	7.84E-05	7.84E-05	1.00	7.85E-05	1.00
Upholstered household furniture	2.17E-03	2.17E-03	1.00	2.18E-03	1.00
Other lodging places	3.12E-03	3.11E-03	1.00	3.11E-03	1.00
Wood products, n.e.c.	1.35E-04	1.35E-04	1.00	1.35E-04	1.00
Flavouring extracts and flavouring syrups, n.e.c.	8.32E-04	6.39E-04	0.77	6.39E-04	0.77
Air transportation	2.53E-03	2.53E-03	1.00	2.53E-03	1.00
Cut stone and stone products	1.92E-05	1.92E-05	1.00	1.93E-05	1.00
Marking devices	2.39E-06	2.39E-06	1.00	2.39E-06	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 3 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 3 - All + first order	As fraction of Scenario 0
Wiring devices	2.79E-06	2.79E-06	1.00	2.80E-06	1.00
Drapery hardware and window blinds and shades	6.05E-04	6.04E-04	1.00	6.05E-04	1.00
Games, toys, and children's vehicles	6.70E-04	6.70E-04	1.00	6.72E-04	1.00
Hospitals	1.60E-03	1.60E-03	1.00	1.60E-03	1.00
Mobile homes	3.25E-04	3.25E-04	1.00	3.25E-04	1.00
Wood television and radio cabinets	4.21E-06	4.21E-06	1.00	4.21E-06	1.00
Apparel made from purchased materials	1.50E-02	1.50E-02	1.00	1.51E-02	1.00
Personal leather goods, n.e.c.	8.45E-05	8.46E-05	1.00	8.48E-05	1.00
Water supply and sewerage systems	5.35E-03	5.36E-03	1.00	5.36E-03	1.00
Leather goods, n.e.c.	7.39E-05	7.38E-05	1.00	7.39E-05	1.00
Miscellaneous repair shops	5.53E-04	5.53E-04	1.00	5.53E-04	1.00
Toilet preparations	3.13E-03	3.14E-03	1.00	3.14E-03	1.00
Costume jewellery	9.54E-05	9.54E-05	1.00	9.55E-05	1.00
Warehousing and storage	3.13E-05	3.14E-05	1.00	3.14E-05	1.00
Hand and edge tools, except machine tools and handsaws	1.00E-04	1.00E-04	1.00	1.00E-04	1.00
Veterinary services	3.22E-04	3.22E-04	1.00	3.22E-04	1.00
Vitreous china table and kitchenware	2.17E-05	2.17E-05	1.00	2.17E-05	1.00
Advertising	1.72E-05	1.72E-05	1.00	1.72E-05	1.00
Dolls and stuffed toys	9.59E-05	9.60E-05	1.00	9.61E-05	1.00
Distilled and blended liquors	9.16E-04	8.44E-04	0.92	8.44E-04	0.92
Wood office furniture	8.38E-04	8.39E-04	1.00	8.40E-04	1.00
Other electronic components	1.90E-05	1.90E-05	1.00	1.91E-05	1.00
Sporting and athletic goods, n.e.c.	5.50E-04	5.50E-04	1.00	5.51E-04	1.00
Social services, n.e.c.	9.73E-04	9.73E-04	1.00	9.75E-04	1.00
Local and suburban transit and interurban highway passenger transportation	3.85E-03	3.85E-03	1.00	3.85E-03	1.00
Photographic equipment and supplies	8.11E-04	8.12E-04	1.00	8.13E-04	1.00
Wood household furniture, except upholstered	2.54E-03	2.53E-03	1.00	2.54E-03	1.00
Watch, clock, jewellery, and furniture repair	1.17E-03	1.17E-03	1.00	1.17E-03	1.00
Other membership organizations	4.41E-04	4.41E-04	1.00	4.42E-04	1.00
Travel trailers and campers	8.00E-05	7.99E-05	1.00	8.00E-05	1.00
New residential 2-4 unit structures, nonfarm	7.74E-04	7.74E-04	1.00	7.75E-04	1.00
Power-driven hand tools	1.19E-04	1.19E-04	1.00	1.20E-04	1.00
Motorcycles, bicycles, and parts	1.16E-03	1.16E-03	1.00	1.16E-03	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 3 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 3 - All + first order	As fraction of Scenario 0
Blank books, loose-leaf binders and devices	5.99E-05	5.98E-05	1.00	5.99E-05	1.00
Jewellers' materials and lapidary work	2.34E-04	2.33E-04	1.00	2.34E-04	1.00
House slippers	5.59E-05	5.59E-05	1.00	5.60E-05	1.00
New highways, bridges, and other horizontal construction	9.53E-05	9.52E-05	1.00	9.54E-05	1.00
Miscellaneous equipment rental and leasing	1.92E-03	1.92E-03	1.00	1.92E-03	1.00
Wood partitions and fixtures	1.02E-03	1.02E-03	1.00	1.02E-03	1.00
Canvas and related products	1.71E-04	1.71E-04	1.00	1.71E-04	1.00
Scales and balances, except laboratory	1.19E-04	1.19E-04	1.00	1.19E-04	1.00
Cutlery	1.22E-04	1.22E-04	1.00	1.22E-04	1.00
Portrait photographic studios, and other miscellaneous personal services	2.43E-03	2.44E-03	1.00	2.44E-03	1.00
Watches, clocks, watchcases, and parts	4.39E-05	4.40E-05	1.00	4.41E-05	1.00
Motor homes	9.02E-05	9.01E-05	1.00	9.02E-05	1.00
New additions & alterations, nonfarm, construction	1.50E-02	1.50E-02	1.00	1.50E-02	1.00
Automotive rental and leasing, without drivers	3.77E-03	3.78E-03	1.00	3.78E-03	1.00
Funeral service and crematories	1.38E-04	1.38E-04	1.00	1.38E-04	1.00
Pens, mechanical pencils, and parts	7.32E-05	7.32E-05	1.00	7.33E-05	1.00
Forestry products	1.33E-03	1.33E-03	1.00	1.33E-03	1.00
Greeting cards	3.03E-04	3.04E-04	1.00	3.04E-04	1.00
Manufactured ice	3.66E-05	2.81E-05	0.77	2.81E-05	0.77
Furniture and fixtures, n.e.c.	7.86E-04	7.86E-04	1.00	7.87E-04	1.00
Cigars	2.35E-04	2.35E-04	1.00	2.35E-04	1.00
Residential care	3.24E-04	3.23E-04	1.00	3.24E-04	1.00
Labour organizations, civic, social, and fraternal associations	2.73E-04	2.73E-04	1.00	2.73E-04	1.00
Schiffli machine embroideries	1.91E-05	1.91E-05	1.00	1.91E-05	1.00
Business associations and professional membership organizations	5.94E-05	5.93E-05	1.00	5.94E-05	1.00
Hotels	4.46E-03	4.46E-03	1.00	4.47E-03	1.00
New farm residential construction	6.89E-04	6.88E-04	1.00	6.89E-04	1.00
Automotive repair shops and services	9.58E-03	9.58E-03	1.00	9.60E-03	1.00
New residential garden and high-rise apartments construction	5.24E-03	5.24E-03	1.00	5.24E-03	1.00
Commercial fishing	1.09E-03	2.12E-03	1.95	2.12E-03	1.95
Real estate agents, managers, operators, and lessors	3.00E-03	2.99E-03	1.00	2.99E-03	1.00
Bowling centres	1.08E-04	1.08E-04	1.00	1.08E-04	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 3 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 3 - All + first order	As fraction of Scenario 0
New residential 1 unit structures, nonfarm	2.64E-02	2.64E-02	1.00	2.64E-02	1.00
Periodicals	1.71E-03	1.71E-03	1.00	1.71E-03	1.00
Electrical repair shops	1.22E-03	1.22E-03	1.00	1.22E-03	1.00
Child day care services	3.37E-04	3.36E-04	1.00	3.37E-04	1.00
Cigarettes	5.83E-03	5.83E-03	1.00	5.84E-03	1.00
Transportation equipment, n.e.c.	8.95E-05	8.95E-05	1.00	8.96E-05	1.00
Ophthalmic goods	8.81E-04	8.81E-04	1.00	8.83E-04	1.00
Maintenance and repair of farm and nonfarm residential structures	5.84E-03	5.84E-03	1.00	5.85E-03	1.00
Signs and advertising specialties	3.08E-04	3.08E-04	1.00	3.09E-04	1.00
Physical fitness facilities and membership sports and recreation clubs	9.45E-04	9.45E-04	1.00	9.47E-04	1.00
Newspapers	1.66E-03	1.66E-03	1.00	1.66E-03	1.00
Book publishing	2.07E-03	2.06E-03	1.00	2.07E-03	1.00
Engineering, architectural, and surveying services	2.29E-04	2.29E-04	1.00	2.29E-04	1.00
Other business services	2.12E-03	2.12E-03	1.00	2.13E-03	1.00
Aircraft and missile engines and engine parts	9.73E-05	9.73E-05	1.00	9.74E-05	1.00
Nursing and personal care facilities	9.17E-04	9.17E-04	1.00	9.19E-04	1.00
Other amusement and recreation services	7.88E-03	7.87E-03	1.00	7.89E-03	1.00
Aircraft	4.38E-04	4.38E-04	1.00	4.38E-04	1.00
Services to dwellings and other buildings	1.76E-04	1.76E-04	1.00	1.76E-04	1.00
Accounting, auditing and bookkeeping, and miscellaneous services, n.e.c.	4.80E-06	4.80E-06	1.00	4.81E-06	1.00
Job training and related services	2.61E-04	2.61E-04	1.00	2.61E-04	1.00
Video tape rental	4.51E-04	4.51E-04	1.00	4.52E-04	1.00
Theatrical producers (except motion picture), bands, orchestras and entertainers	4.59E-04	4.59E-04	1.00	4.60E-04	1.00
Photofinishing labs and commercial photography	2.48E-04	2.48E-04	1.00	2.48E-04	1.00
Chewing and smoking tobacco and snuff	2.75E-04	2.76E-04	1.00	2.76E-04	1.00
Musical instruments	1.21E-04	1.20E-04	1.00	1.21E-04	1.00
(use of) Electronic computers	1.84E-03	1.84E-03	1.00	1.84E-03	1.00
Greenhouse and nursery products	1.64E-03	2.01E-03	1.23	2.01E-03	1.23
Instruments to measure electricity	5.29E-04	5.29E-04	1.00	5.30E-04	1.00
Automobile parking and car washes	7.13E-04	7.13E-04	1.00	7.15E-04	1.00
Miscellaneous publishing	1.64E-04	1.64E-04	1.00	1.64E-04	1.00

e3iot categories	Fraction contribution to overall impact Scenario 0 - All	Fraction contribution to overall impact Scenario 3 - All	As fraction of Scenario 0	Fraction contribution to overall impact Scenario 3 - All + first order	As fraction of Scenario 0
Racing, including track operation	2.21E-04	2.21E-04	1.00	2.21E-04	1.00
Radio and TV broadcasting	1.78E-04	1.78E-04	1.00	1.78E-04	1.00
Cable and other pay television services	1.51E-03	1.51E-03	1.00	1.51E-03	1.00
Motion picture services and theatres	4.78E-04	4.77E-04	1.00	4.78E-04	1.00
Elementary and secondary schools	8.20E-04	8.20E-04	1.00	8.21E-04	1.00
(use of) Computer peripheral equipment	1.17E-03	1.17E-03	1.00	1.17E-03	1.00
Pre-recorded records and tapes	8.46E-05	8.45E-05	1.00	8.47E-05	1.00
Search and navigation equipment	1.11E-03	1.11E-03	1.00	1.11E-03	1.00
Colleges, universities, and professional schools	2.17E-03	2.18E-03	1.00	2.18E-03	1.00
Arrangement of passenger transportation	2.12E-05	2.12E-05	1.00	2.13E-05	1.00
Professional sports clubs and promoters	1.32E-04	1.32E-04	1.00	1.32E-04	1.00
Legal services	4.16E-04	4.16E-04	1.00	4.16E-04	1.00
Home health care services	1.23E-03	1.23E-03	1.00	1.23E-03	1.00
Telephone, telegraph communications, and communications services n.e.c.	8.98E-03	8.98E-03	1.00	9.00E-03	1.00
Private libraries, vocational schools, and educational services, n.e.c.	6.05E-04	6.06E-04	1.00	6.07E-04	1.00
Office machines, n.e.c.	3.68E-05	3.67E-05	1.00	3.68E-05	1.00
Calculating and accounting machines	3.36E-05	3.35E-05	1.00	3.36E-05	1.00
Religious organizations	2.00E-04	2.00E-04	1.00	2.00E-04	1.00
Doctors and dentists	3.62E-03	3.62E-03	1.00	3.63E-03	1.00
Detective and protective services	1.63E-05	1.63E-05	1.00	1.64E-05	1.00
Banking	3.16E-04	3.16E-04	1.00	3.16E-04	1.00
Insurance carriers	7.53E-03	7.53E-03	1.00	7.54E-03	1.00
Credit agencies other than banks	7.22E-05	7.25E-05	1.00	7.26E-05	1.01
Security and commodity brokers	2.21E-04	2.22E-04	1.00	2.22E-04	1.00
Personnel supply services	1.42E-05	1.42E-05	1.00	1.42E-05	1.00
Sum All	1.00	0.98		0.98	
Sum food	0.27	0.25		0.25	
Sum non food	0.73	0.73		0.73	

### 13 CHAPTER 5, ANNEX 10: ENVIRONMENTAL IMPACT SCORES OF FINAL CONSUMPTION OF ALL PRODUCTS INCLUDING FIRST ORDER EFFECTS

Impact category	scenario 0 - All	scenario 1 - All + first order	scenario 2 - All + first order	scenario 3 - All + first order
abiotic depletion	1.00	0.998	0.996	0.995
global warming	1.00	0.999	0.985	0.985
ozone layer depletion	1.00	0.997	0.996	0.993
human toxicity	1.00	0.998	0.993	0.991
ecotoxicity	1.00	1.006	1.018	1.008
photochemical oxidation	1.00	0.996	0.988	0.986
acidification	1.00	0.991	0.963	0.958
eutrophication	1.00	0.991	0.939	0.933

**14 CHAPTER 5, ANNEX 11: ENVIRONMENTAL IMPACT SCORES OF FINAL CONSUMPTION ALL PRODUCTS INCLUDING SECOND ORDER EFFECTS**

	scenario 0 - All	scenario 1 - All + second order	scenario 2 - All + second order	scenario 3 - All + second order
abiotic depletion	1.00	0.998	0.997	0.998
global warming	1.00	1.000	0.994	0.994
ozone layer depletion	1.00	0.997	0.995	0.993
human toxicity	1.00	0.998	0.995	0.992
ecotoxicity	1.00	1.006	1.018	1.008
photochemical oxidation	1.00	0.995	0.989	0.988
acidification	1.00	0.993	0.981	0.976
eutrophication	1.00	0.994	0.989	0.987

## 15 CHAPTER 5, ANNEX 12: TOTAL SUPPLY VECTORS FROM CAPRI

E3IOT Categories	Total Supply scenario 0 - All (billion Euro)	Total Supply scenario 1 - All + second order (billion Euro)	Total Supply scenario 2 - All + second order (billion Euro)	Total Supply scenario 3 - All + second order (billion Euro)
Dairy farm products	61.70	61.16	61.54	58.85
Poultry and eggs	54.10	53.88	60.15	61.42
Cattle	54.60	52.58	50.30	49.95
Pigs	55.30	52.89	41.91	41.09
Miscellaneous livestock	9.07	9.27	7.70	8.44
Food grains	11.40	11.81	14.10	14.64
Feed grains	77.00	75.97	75.94	74.98
Fruits	27.20	29.33	29.52	28.61
Tree nuts	2.06	2.04	4.38	2.72
Vegetables	28.40	30.28	31.38	31.63
Sugar crops	4.67	4.59	4.87	4.84
Miscellaneous crops	1.46	1.47	1.53	1.54
Oil bearing crops	33.50	34.09	34.21	34.96
Wines, brandy, and brandy spirits	19.00	18.87	19.69	19.05
Soybean oil mills	26.20	25.68	24.55	24.32
Vegetable oil mills, n.e.c.	2.58	2.66	2.67	2.77
Edible fats and oils, n.e.c.	24.30	25.76	26.12	27.91
Prepared feeds, n.e.c.	43.10	42.52	43.32	43.27



## 16 CHAPTER 5, ANNEX 13: LCA DATA DESCRIBING A PIG FARM

Group	Commodity/Environmental intervention	quantity		price		revenues		coefficients	
		value	unit	value	unit	value	unit	value	unit
Economic outflows	Bread wheat	104	ton	0.22	euro/kg	23065	euro		
	Oat	1	kg	0.22	euro/kg	0	euro		
	Rape seed	17	ton	0.36	euro/kg	6188	euro		
	Grass seed	2	ton	0.1	euro/kg	214	euro		
	Peas	5	ton	0.26	euro/kg	1283	euro		
	Potatoes	20	ton	0.19	euro/kg	3691	euro		
	Straw	44	ton	0.16	euro/kg	6898	euro		
	Sugar beet	62	ton	0.044	euro/kg	2706	euro		
	Grower pig (30 kg)	19	ton	1.3	euro/kg	24552	euro		
	Pork meat	242	ton	1.3	euro/kg	304440	euro		
	Manure	3102	ton	0	euro/kg	0	euro		
	Total					373038	euro	1	euro/euro
Economic inflows	Spring barley	73	ton	194	euro/ton	14236	euro	0.0382	euro/euro
	Winter barley	73	ton	194	euro/ton	14236	euro	0.0382	euro/euro
	Wheat	147	ton	198	euro/ton	29054	euro	0.0779	euro/euro
	Soy meal	151	ton	240	euro/ton	36352	euro	0.0974	euro/euro
	Lubricant Oil	1003	liter					0.00268	euro/euro
	Manure	102	kg N	0	euro/kg	0	euro	0	euro/euro
	Fertilizer , Calcium ammonium nitrate	5331	kg N	24.9	euro/100 kg	1327	euro	0.00356	euro/euro
	Fertilizer P	646	kg P	26.8	euro/100 kg	173	euro	0.000464	euro/euro
	Fertilizer K	2161	kg K	31.2	euro/100 kg	674	euro	0.00181	euro/euro
	P, Mineral Feed	2176	kg P	26.8	euro/100 kg	583	euro	0.00156	euro/euro
	Grower pig (30 kg)	1	ton	1.26	euro/kg	1827	euro	0.00490	euro/euro
	Electricity Denmark	78206	kWh	0.082	euro/kWh	6413	euro	0.0172	euro/euro
	Heating	226812	MJ	8.99	euro/GJ	2039	euro	0.00547	euro/euro
	Traction	352828	MJ						
environmental interventions	Methane [air]	3364	kg CH4					0.00902	kg/euro
	Ammonia [air]	4607	kg NH3					0.0123	kg/euro
	N2O [air]	553	Kg N2O					0.00148	kg/euro
	Nitrate [water]	23715	kg NO3					0.0636	kg/euro
	Phosphate [water]	193	kg P					0.000518	kg/euro
	Arable land use [resource]	69	ha a					0.000186	ha a/euro

## 17 CHAPTER 5, ANNEX 14: LCA DATA DESCRIBING A MIXED DAIRY – CATTLE FARM

Group	Commodity/Environmental intervention	quantity		price		revenues		coefficients	
		value	unit	value	unit	value	unit	value	unit
Economic outflows	Bread wheat	20	ton	0.22	euro/kg	4465	euro		
	Wheat	2.4	ton	0.21	euro/kg	502	euro		
	Oat	0.46	ton	0.22	euro/kg	102	euro		
	Rye	2.5	ton	0.18	euro/kg	461	euro		
	Rape seed	2.1	ton	0.36	euro/kg	756	euro		
	Grass seed	0.16	ton	0.1	euro/kg	16	euro		
	Peas	0.81	ton	0.26	euro/kg	214	euro		
	Potatoes	2.8	ton	0.19	euro/kg	527	euro		
	Sugar beet	15	ton	0.044	euro/kg	647	euro		
	Milk-ECM	474	ton	0.49	euro/kg	232229	euro		
	Beef meat	20.	ton	3	euro/kg	60192	euro		
	Manure	0.36	ton	0	euro/kg	0	euro		
	total					300110	euro		1 euro/euro
Economic inflows	Spring barley	85	ton	194	euro/ton	16460	euro	0.0548	euro/euro
	Soy meal	73	ton	240	euro/ton	17571	euro	0.0585	euro/euro
	Rape seed meal	4	ton	164	euro/ton	646	euro	0.0022	euro/euro
	Lubricant Oil	1086	liter						
	Manure	366	kg N	0	euro/kg				
	Fertilizer , Calcium ammonium nitrate	5939	kg N	25	euro/100 kg	1479	euro	0.0049	euro/euro
	Fertilizer P	749	kg P	27	euro/100 kg	201	euro	0.0007	euro/euro
	Fertilizer K	2912	kg K	31	euro/100 kg	908	euro	0.0030	euro/euro
	P, Mineral Feed	134	kg P	27	euro/100 kg	36	euro	0.0001	euro/euro
	Electricity Denmark	41654	kWh	0.082	euro/kWh	3416	euro	0.0114	euro/euro
	Heating	638	MJ	9.0	euro/GJ	5.7	euro	0.0000	euro/euro
	Traction	384777	MJ						
environmental interventions	Methane [air]	11658	kg CH4					0.03884	kg CH4/euro
	Ammonia [air]	3277	kg NH3					0.01092	kg NH3/euro
	N2O [air]	868	kg N2O					0.00289	kg N2O/euro
	Nitrate [water]	27412	kg NO3					0.09134	kg NO3/euro
	Phosphate [water]	122	kg P					0.00041	kg P/euro
	Arable land use [resource]	71	ha a					0.00024	ha a/euro