# *Carbon Footprinting the Gold Coast City consumption of goods and built environment products*

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**Abstract**: A number of studies have been published demonstrating the importance of measuring greenhouse gas (GHG) emissions from a consumer perspective in addition to the traditional producer perspective - triggering debates among politicians with respect to countries' responsibility for carbon emissions. Multi-Region Input-Output (MRIO) Analysis has been used as an appropriate tool for GHG emissions studies appraising the trade between the regions: country, state and city-level, for example. MRIO and Multi-Region Supply-Use Tables (MR-SUT) tables were not available for small regions in the past, but a change in this scenario can be seen in new initiatives like The Australian Industrial Ecology Virtual Lab (IELab) - which is a collaborative virtual platform database that hosts MR-SUT data and satellite accounts at various levels. Thus, we are able to obtain a SUT of one specific city and its relationship with the rest of the state, the rest of the country and the rest of the world. We aim to assess the carbon footprint (CF) of Gold Coast City's final demand of specific products: construction materials, goods and construction and estate services. Assessing their supply chains by using this MR-SUT model of Australia with four distinct regions from the IELab, we have concluded that the largest $CO_2$ embodied products by the consumption of these products are the ones that are produced by industry, goods manufacturing, electricity, transport, construction materials manufacturing and construction and estate services industry.

## 1. Introduction and data

Carbon dioxide ($CO_2$) emissions by anthropogenic activities are one of the most significant climate change drivers and many studies have been attesting its importance in altering the Earth's energy flux - contributing to global warming (Raupach et al., 2007, Friedlingstein et al., 2010).

The $CO_2$ anthropogenic radiative forcing (RF) was 1.68 $Wm^{-2}$ for the 2011 year relative to the year of 1750 (IPCC, 2013)[1]. It represents around 60% of the greenhouse gas (GHG) RF and more than 70% of total anthropogenic RF for the same time period of analysis.

Studying $CO_2$ emissions mechanisms is determinant for understanding and designing policies to reduce the production of this climate change driver. To this end, we understand that incorporating spatial disaggregation – emphasized by Su and Ang (2010) – and, implementing a holistic point of view in terms of industry assessment, can support the design of mitigation policies.

In this study we measure the specific city consumption of goods and the built environment products and services produced by a set of industries for estimating its Carbon Footprint (CF). To this end, we have traced $CO_2$ emissions from the production economic activities taking into consideration the following definition:

*"The carbon footprint is a measure of the exclusive total amount of carbon dioxide emissions that is directly and indirectly caused by an activity or is accumulated over the life stages of a product."* (Wiedmann and Minx, 2008)

We must use appropriate tools for measuring $CO_2$ emissions during the production stages from different perspectives – producer and consumer. Input-Output Analysis (IOA) can contribute to this CF measurement (Wiedmann, 2009a, Nansai et al., 2009). Moreover, its combination with Life-Cycle Assessment (LCA) - hybrid analysis - is a powerful tool for connecting environmental data with the flows of products and services between industries

[1] With a confidence interval from 1.33 to 2.03.

in an economic system (Matthews et al., 2008, Wiedmann and Minx, 2008, Nansai et al., 2009).

Many studies have been applying this technique to analyze one specific region (Turner et al., 2007, Wiedmann et al., 2007), more than one location separately or an economic system containing a set of them - appraising the trade of goods and services between these regions. The application of the latter approach has been intensified nowadays by the use of Multi-Region Input-Output (MRIO) models (Turner et al., 2007, Wiedmann et al., 2007), which has demonstrated to be an appropriate tool for that purpose (Druckman and Jackson, 2009, Nansai et al., 2009, Wiedmann, 2009b, Davis et al., 2011, Lenzen et al., 2012, Lenzen, 2013, Wiedmann et al., 2013, P. Dadhich et al., 2014).

This study shares with most of the vision verified in Dietzenbacher et al. (2013)[2], in which was emphasized that one of the IOA tendencies for the future is the increase of studies and MRIO databases - including environmental satellite accounts at city-level in a multi disciplinary collaborative data construction.

It is what has been done by the Industrial Ecology Virtual Laboratory (IELab) – a MRIO collaborative virtual platform database that hosts data satellite accounts to MRIO models from the micro to macro-level - e.g.: cities to countries (Lenzen et al., 2014).

In order to decipher how these mechanisms occur we assess $CO_2$ emissions relationship with the consumption of “Construction materials”, “Goods” and “Construction and estate services” products by one specific region: Gold Coast city (GCC).

Although it is a non-capital city, the GCC’s share of agricultural activity in its economic system is not so significant when compared to other Australian non-capitals (only a small amount of sugarcane farmers in the north). It is the largest non-capital city of Australia (and the sixth one considering all of them) in terms of population, which has grown

[2] In the section 3, Manfred Lenzen “tells” a history about the future (the year of 2038) that started in 2016 with the successful Global MRIO Virtual Laboratory launched by the Project Réunion consortium and ended in 2037 with the drafting of what he named as “System of Environmental Account” (SEA) project.
In the section 5, Dabo Guan also has prophesized the establishment of new MRIO databases in a micro-level data, naturally, with more detail-level (potentially opening connection for applying a kind of Big Data Input-Output projects). It would be able to link, for example, economic sectors in one specific city to others sectors from an international city.

35.5% from 2001 to 2012 (Regional Development Australia, 2013) - an interesting city for studying CF of the built environment and goods consumption.

We expect that both the city and the industries chosen can be used as a platform for understanding the $CO_2$ emissions mechanisms and designing mitigation policies.

Thus, we have extracted a Multi-Region Supply-Use Table (MR-SUT) for 2009 year from the IELab, including its satellite account of $CO_2$ emissions. Due to the preliminary stage of the IELab project, unfortunately the $CO_2$ satellite account is not available for all industries sectors. Therefore, the largest mother table available for our study contains 12 industries instead of 344 (the number of industries appraised in the last version of monetary Australian MR-SUT in Eora database, at the time of writing).

This MR-SUT version was built to avoid aggregation issues[3] that can occur due to junction of industries and products with different $CO_2$ emissions characteristics. The idea was to aggregate the industries with most similar $CO_2$ emissions patterns as possible, obtaining then, a MR-SUT that, even with less industry and product detail, is able to achieve our study goal.

The only information we have regarding the Rest of the World (RoW) is the mapping of industry inputs and its feedstock - part of these industries production recipes. In other words, we have the imports detailed in a “foreign” Use table framework that we called the RoW. However, our original data of exported products are computed in an aggregated RoW vector, instead of a Use table framework. We split this export vector into 12 equal industry column vectors in order to obtain an export table to RoW. An intra-regional RoW Use matrix was not available at the time the analysis was undertaken.

We also have a lack of data regarding the RoW Supply and Final Demand (FD) matrices. While the absence of these tables in our MR-SUT precludes our study to estimate the CF of products consumption outside of Australia, the way that the sub-set of RoW export table were estimated limits the RoW production recipe estimation for reasons that will be further explained, in the fourth section of this study. Nevertheless, these assumptions

[3] See LENZEN, M. 2011. Aggregation versus disaggregation in Input-Output Analysis of the environment. *Economic Systems Research,* 23, 73-89.

were essential to obtain the CF of the regions appraised in our model. Thus, this study covers the $CO_2$ emissions inside the Australian territory, only – with reliable outcomes in terms of products made in GCC, RoQ and RoA consumption CF. The remaining products, the ones that are made in RoW, have less reliable results.

The MR-SUT structure can be visualized in the Figure 1, as follows, which was constructed assembling Supply-Use Tables (SUTs) from GCC, Rest of Queensland (ROQ), Rest of Australia (ROA) and, as it was described before, part of the SUT from the Rest of the World (ROW)[4]. Below these Use Tables is the satellite account, a vector of total $CO_2$ emitted directly by each one of the 12 industries of these regions.

| **MRSUT** | | **GCC** | | **ROQ** | | **ROA** | | **ROW** | **GCC** | **ROQ** | **ROA** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | i | p | i | p | i | p | i | FD | FD | FD |
| **GCC** | i | | $V_{GCC}$ | | | | | | | | |
| | p | $U_{GCC,GCC}$ | | $U_{GCC,ROQ}$ | | $U_{GCC,ROA}$ | | $U_{GCC,ROW}$ | $FD_{GCC,GCC}$ | $FD_{GCC,ROQ}$ | $FD_{GCC,ROA}$ |
| **ROQ** | i | | | | $V_{ROQ}$ | | | | | | |
| | p | $U_{ROQ,GCC}$ | | $U_{ROQ,ROQ}$ | | $U_{ROQ,ROA}$ | | $U_{ROQ,ROW}$ | $FD_{ROQ,GCC}$ | $FD_{ROQ,ROQ}$ | $FD_{ROQ,ROA}$ |
| **ROA** | i | | | | | | $V_{ROA}$ | | | | |
| | p | $U_{ROA,GCC}$ | | $U_{ROA,ROQ}$ | | $U_{ROA,ROA}$ | | $U_{ROA,ROW}$ | $FD_{ROA,GCC}$ | $FD_{ROA,ROQ}$ | $FD_{ROA,ROA}$ |
| **ROW** | p | $U_{ROW,GCC}$ | | $U_{ROW,ROQ}$ | | $U_{ROW,ROA}$ | | | $FD_{ROW,GCC}$ | $FD_{ROW,ROQ}$ | $FD_{ROW,ROA}$ |
| **GCC** | VA | $VA_{GCC}$ | | | | | | | | | |
| **ROQ** | VA | | | $VA_{ROQ}$ | | | | | | | |
| **ROA** | VA | | | | | $VA_{ROA}$ | | | | | |
| **Sattelite Account** | | $CO_2$ | | $CO_2$ | | $CO_2$ | | | | | |

**Figure 1 - The MR-SUT structure of this study (i = industries, p = products, VA = Value Added, FD = Final Demand, GCC = Gold Coast City, ROQ = Rest of Queensland, ROA = Rest of Australia and ROW = Rest of World)**

The aim of this study is to investigate the CF of "Construction materials", "Goods" and "Construction and estate services" demand at city-level (Gold Coast city, Australia) in the Australian territory - by appointing the GCC's final consumer responsibility in terms of $CO_2$ emitted due to these products demand.

To this end we have built a Carbon Map (CM) of GCC's final demand and its components: Households, Government, Enterprises and Change in Inventories[5]. Basically,

[4] Because a lack of data we couldn't include the $V_{RoW}$, FDs ($FD_{GCC,RoW}$, $FD_{RoQ,RoW}$ and $FD_{RoA,RoW}$) and $U_{RoW,RoW}$.
[5] Households is the consumption expenditures by households; Government is consisted the consumption expenditures by the government and gross government fixed capital formation; Enterprises is composed by the gross private fixed capital formation and gross public enterprise fixed capital formation; Change in Inventories is the increase and decrease in the stocks of products;

a CM can be translated in a computation of $CO_2$ emissions associated with products and services demand in a specific location, which, in our case study corresponds to GCC. In the CM, the columns values represent the $CO_2$ emissions for producing each product – horizontal labels along the top. Such $CO_2$ emissions are called CF because they are addressed to each industry and its respective location in which the emission of the respective product demanded occurred – vertical labels along the left side. These emissions have only occurred during the Australian supply chain of products and services produced in GCC, RoQ, RoA and RoW. From the CM, we have identified the emissions associated with this set of products (produced by this set of Industries) consumed in GCC, the amount, the industries associated and the Australian regions where they come from.

The methodology applied is described in the following section. The results and its analysis are both exposed in the section three and four, while the discussion and conclusion are in section five, respectively.

## 2. Methodology

As described in the previous section, we obtained a MR-SUT from the IELab appraising four different regions (GCC, ROQ, ROA and ROW), including a $CO_2$ satellite account of 12 sectors and products: “Agriculture”, “Industry”, “Food”, “Construction materials”, “Goods”, “Electricity”, “Water Supply & Sewerage”, “Waste”, “Transport”, “Construction & Estate Services”, “Government Services & Business” and “Private Services”. Our MR-SUT system is based on the equations 1, 2 and 3, described as follows:

$$MRSUT_{i,j} = \begin{pmatrix} T_{84,84} & FD_{84,18} \\ VA_{15,84} & - \end{pmatrix} \quad (1)$$

$i = 99; j = 102$

$$TFD_{i,j} = TFD_{84,6}^{k} = HH_{84,1}^{k} + Gov_{84,1}^{k} + Ent_{84,1}^{k} + HChInvH_{84,1}^{k} \quad (2)$$

$i = 84; j = 18;\ k = GCC + ROQ + ROA$

$$z_{1,84} = \sum_{i=0}^{77} T_{i,84} + \sum_{i=0}^{15} VA_{i,84} \quad (3)$$

$i = 1; j = 84;$

where $MR\text{-}SUT_{99,102}$ is the MR-SUT represented in Figure 1; $T_{84,84}$ is the MR-SUT sub-matrix composed by Us and Vs - from all selected regions; $FD_{84,18}$ is the MR-SUT sub-matrix composed by GCC, ROQ and ROA final demands; TFD is the Total FD, composed by the sum of the FD parts from each one of the domestic regions considered: GCC, ROQ and ROA; HH, Gov, Ent and ChInv are FD`s parts – Household, Government, Enterprise and Change in Inventories, respectively; $VA_{15,84}$ is the MR-SUT sub-matrix assembled by set of value added matrices: GCC, ROQ and ROA and; z is the input vector: a sum row vector of T and VA;

We have divided each one of the T element ($t_{i,j}$) per z to estimate the A matrix, which computed the industries technical coefficients. Matrix A is composed by the elements $a_{i,j} = t_{i,j}/z_j$:

$$A_{i,j} = \begin{pmatrix} a_{1,1} & \cdots & a_{1,84} \\ \cdots & \cdots & \cdots \\ a_{84,1} & \cdots & a_{84,84} \end{pmatrix} \quad (4)$$

Equation (4) is essential to estimate the Leontief inverse matrix, described in the equation (5), as follows.

$$L_{i,j} = (I - A)^{-1} \tag{5}$$

$i = 84; j = 84$

where *I* is the Identity matrix with the same dimension of A;

The matrix L, which is equivalent to ($I+A^2+A^3+\ldots$) by the power series approximation, traces the interdependence between the economic sectors and products of these regions - mapping the intra and inter-regional effects between them. As described in the following equations (6 and 7), as the direct emissions vector - $e_j$, L matrix is essential to calculate the Total Impact multipliers (TIMs).

$$DIMs_{i,j} = \widehat{e_j} \times \widehat{z_j}^{-1} \tag{6}$$

$i = 1; j = 84$

$$TIMs_{i,j} = \widehat{DIMs} \times L \tag{7}$$

$i = 84; j = 84$

where *DIMs* is a row vector of Direct Impacts Multipiers, $\widehat{DIMs}$ is a matrix where the DIMs have been placed on the diagonal with all other elements being zero and *TIMs* is the Total Impacts Multiplier matrix (both DIMs and TIMs are in kilotons of $CO_2$ per US$);

The TIMs measures the emissions incorporation by the interdependence matrix, L. Replacing L per $(I+A^2+A^3+\ldots)$, it is possible to assert that ($TIMs = DIMs+DIMsA+DIMsA^2+DIMsA^3+\ldots$), where, the first two elements in the right side of such equation are related to the initial and direct effects, respectively, while the remaining ($DIMsA^2+DIMsA^3+\ldots$) are related to the indirect (embodied) effects (Miller and Blair, 2009).

Therefore, direct impact (DIM) is part of the issue, which is full covered when indirect (embodied) emissions are also considered – measuring then, the total impacts (TIM), which in general are 1-3 times larger than DIMs for primary, secondary and transport industries, but can be 8 times larger for construction and industrial services (Minx et al., 2009). According to Davis et al. (2011), 23% of global emissions are embodied in the consumer goods.

Multiplying TIMs matrix per $\widehat{TFD}_{84,1}^{GCC}$ and its respective components ($\widehat{HH}_{84,1}^{GCC}$, $\widehat{Gov}_{84,1}^{GCC}$, $\widehat{Ent}_{84,1}^{GCC}$ and $HCh\widehat{InvH}_{84,1}^{GCC}$) results in five different CMs - representing the CF of products bought in GCC. Values from products (rows) to industries (columns) are nulls. Thus, the CF is only represented from industries (rows) to products (columns). Therefore, we decided to represent a CM in a compact way, cropping sections where the CF is not measured - from industries (rows) to products (columns).

As a way of simplification we named the "cropped CM" as CM – with dimension reduced from 84x84 to 48x48. Figure 2 shows a model of five different CMs that we have obtained applying this methodology: TCM (Total CM), HHCM (Household CM), GovCM (Government CM), EntCM (Enterprise CM) and ChInvCM (Change in Inventories CM). All of the five estimated CMs are presented in detail in the supplementary material of this study. In order to investigate the CF of GCC's final demand consumption of "construction materials", "goods" and "construction and estate services", we have extracted its respective columns of these four regions in the CMs.

| HHCM | | GCC | ROQ | ROA | ROW |
|---|---|---|---|---|---|
| | | p | p | p | p |
| GCC | i | $CF_{GCC,GCC}$ | $CF_{GCC,ROQ}$ | $CF_{GCC,ROA}$ | $CF_{GCC,ROW}$ |
| ROQ | i | $CF_{ROQ,GCC}$ | $CF_{ROQ,ROQ}$ | $CF_{ROQ,ROA}$ | $CF_{ROQ,ROW}$ |
| ROA | i | $CF_{ROA,GCC}$ | $CF_{ROA,ROQ}$ | $CF_{ROA,ROA}$ | $CF_{ROA,ROW}$ |
| ROW | i | - | - | - | - |

**Carbon Map of Households demand:** traces the CF of products bought by households in GCC through the computation of how much of $CO_2$ are emitted and where they come from, during the production process of the product.

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| GovCM | | GCC | ROQ | ROA | ROW |
|---|---|---|---|---|---|
| | | p | p | p | p |
| GCC | i | $CF_{GCC,GCC}$ | $CF_{GCC,ROQ}$ | $CF_{GCC,ROA}$ | $CF_{GCC,ROW}$ |
| ROQ | i | $CF_{ROQ,GCC}$ | $CF_{ROQ,ROQ}$ | $CF_{ROQ,ROA}$ | $CF_{ROQ,ROW}$ |
| ROA | i | $CF_{ROA,GCC}$ | $CF_{ROA,ROQ}$ | $CF_{ROA,ROA}$ | $CF_{ROA,ROW}$ |
| ROW | i | - | - | - | - |

**Carbon Map of Government demand:** traces the CF of products bought by government in GCC through the computation of how much of $CO_2$ are emitted and where they come from, during the production process of the product.

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| EntCM | | GCC | ROQ | ROA | ROW |
|---|---|---|---|---|---|
| | | p | p | p | p |
| GCC | i | $CF_{GCC,GCC}$ | $CF_{GCC,ROQ}$ | $CF_{GCC,ROA}$ | $CF_{GCC,ROW}$ |
| ROQ | i | $CF_{ROQ,GCC}$ | $CF_{ROQ,ROQ}$ | $CF_{ROQ,ROA}$ | $CF_{ROQ,ROW}$ |
| ROA | i | $CF_{ROA,GCC}$ | $CF_{ROA,ROQ}$ | $CF_{ROA,ROA}$ | $CF_{ROA,ROW}$ |
| ROW | i | - | - | - | - |

**Carbon Map of Enterprises demand:** traces the CF of products bought by enterprizes in GCC through the computation of how much of $CO_2$ are emitted and where they come from, during the production process of the product.

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| ChInvCM | | GCC | ROQ | ROA | ROW |
|---|---|---|---|---|---|
| | | p | p | p | p |
| GCC | i | $CF_{GCC,GCC}$ | $CF_{GCC,ROQ}$ | $CF_{GCC,ROA}$ | $CF_{GCC,ROW}$ |
| ROQ | i | $CF_{ROQ,GCC}$ | $CF_{ROQ,ROQ}$ | $CF_{ROQ,ROA}$ | $CF_{ROQ,ROW}$ |
| ROA | i | $CF_{ROA,GCC}$ | $CF_{ROA,ROQ}$ | $CF_{ROA,ROA}$ | $CF_{ROA,ROW}$ |
| ROW | i | - | - | - | - |

**Carbon Map of Change in Inventories:** it traces the CF of the products stock in GCC, through the computation of how much of $CO_2$ are emitted and where they come from, during the production process of the product.

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| TCM | | GCC | ROQ | ROA | ROW |
|---|---|---|---|---|---|
| | | p | p | p | p |
| GCC | i | $CF_{GCC,GCC}$ | $CF_{GCC,ROQ}$ | $CF_{GCC,ROA}$ | $CF_{GCC,ROW}$ |
| ROQ | i | $CF_{ROQ,GCC}$ | $CF_{ROQ,ROQ}$ | $CF_{ROQ,ROA}$ | $CF_{ROQ,ROW}$ |
| ROA | i | $CF_{ROA,GCC}$ | $CF_{ROA,ROQ}$ | $CF_{ROA,ROA}$ | $CF_{ROA,ROW}$ |
| ROW | i | - | - | - | - |

**Carbon Map of Total final demand:** traces the CF of products bought by the total final demand in GCC through the computation of how much of $CO_2$ are emitted and where they come from, during the production process of the product.

**Figure 2 - The set of estimated CMs: "HH", "GG", "Ent", "ChInv" and "T"**

The column of GCC represents the goods bought by the TFD (or its components), but produced in GCC. While the first quarter of rows is related to the emissions occurred in GCC region, during the production process, the second is related to ROQ and so on. The same logic involves the remaining column blocks (or regions). When we observe the ROA goods products, for example, the values in the ROQ rows stands for the emissions addressed to the production process of materials and services used for producing products in that region: ROA.

How much of $CO_2$ were emitted to produce the products that GCC's final demand consumed? Where was the amount of $CO_2$ originally emitted: which regions and industries does it belong to? These questions can be clarified by the following figures presented in the next section, which shows the CF resulted by the GCC`s final demand consumption of these three products: “Construction materials”, “Goods” and “Construction and estate services”.

## 3. GCC`s final demand of: construction materials, goods and construction & estate services

Although “construction materials” and “construction and estate services” represent the built environment, we have decided to show the results with the same ordainment of these products in the MR-SUT and the CMs. Thus, the results from the “construction materials” products are the first to be shown, “goods” the second and “construction and estate services” the last one.

Figure 3 shows the amount of $CO_2$ (kt) emitted in the Australian territory during the production of construction materials consumed by the final demand of GCC in the year of 2009. The places where these products are produced are also indicated in the figure, as well as the CF sliced in the GCC’s final demand parts (beyond the total final demand): households, government, enterprises and change in inventories. All of these elements (amount of $CO_2$ emitted in the Australian territory, the regions and final demand components that it belongs to) can be visualized in the Figure 3.

Change in inventories presented around -32 kt of $CO_2$ for 2009 year related to the consumption of construction materials made in GCC, which is in fact the total amount of CF of this product made in that region – considering that the remaining final demand components had presented no demand for this product during the assessed year. This is what we expected, since usually this other final demand components not present any construction materials consumption, at least directly from the secondary industries. In general, households, government and enterprises demand construction materials from the tertiary industries, which in the case of this study are represented by construction and estate services (Figure 5).

This $CO_2$ amount was emitted during the production process of construction materials in the previous years. As a portion of this set of products has not been consumed, for some reason, some stocks have accumulated after this previous period of analysis, which results in a possible positive change in inventories for the latter year. Then, the demand for construction materials was attended by these stocks accumulated in the past, avoiding the construction materials industry to produce more products and present this amount of $CO_2$ in 2009.

Regarding RoQ and RoA, no consumption was computed for products made in these couple of regions, resulting in no $CO_2$ emissions of construction materials products production. In the case of RoW, Figure 3 shows that 0.62 kt of $CO_2$ were emitted during the construction materials production process in RoW. From this amount, 0.55, 0.33 and -0.28 are respectively related to households, enterprises and change in inventories.

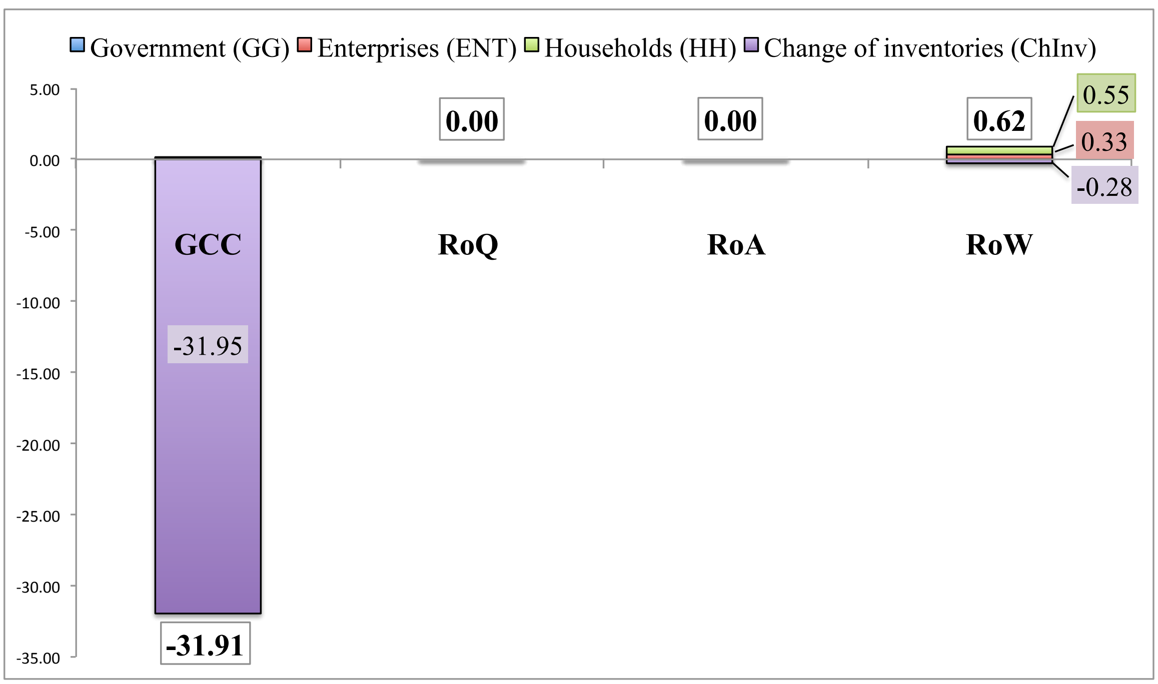


**Figure 3 – The Carbon Footprint (CF) of the GCC final demand – during the construction materials supply chain, categorized by each one of the four assessed regions**

For the goods consumption by the GCC's total final demand and its components, Figure 4 shows that the $CO_2$ emission from goods produced in GCC corresponds to around 183 kt, in which around 110 kt, 88 kt, 12 kt and -26 kt are respectively related to households, enterprises, government and change in inventories - this latter one represents an emission that has occurred in previous years, during the production of goods that were not demanded by the consumers, which results in positive stocks. Negative values in change in inventories also occurred in the remaining regions, where the total of $CO_2$ emitted were around 10 kt, 138 kt and 420 kt, for RoQ, RoA and RoW, respectively – therefore, the largest CF is from imported (RoW) products. Households shows the largest slice of the total, followed by enterprises and government, in terms of positive values. More details about how much of $CO_2$ belongs to each one of the final demand parts can be verified in the Figure 4.

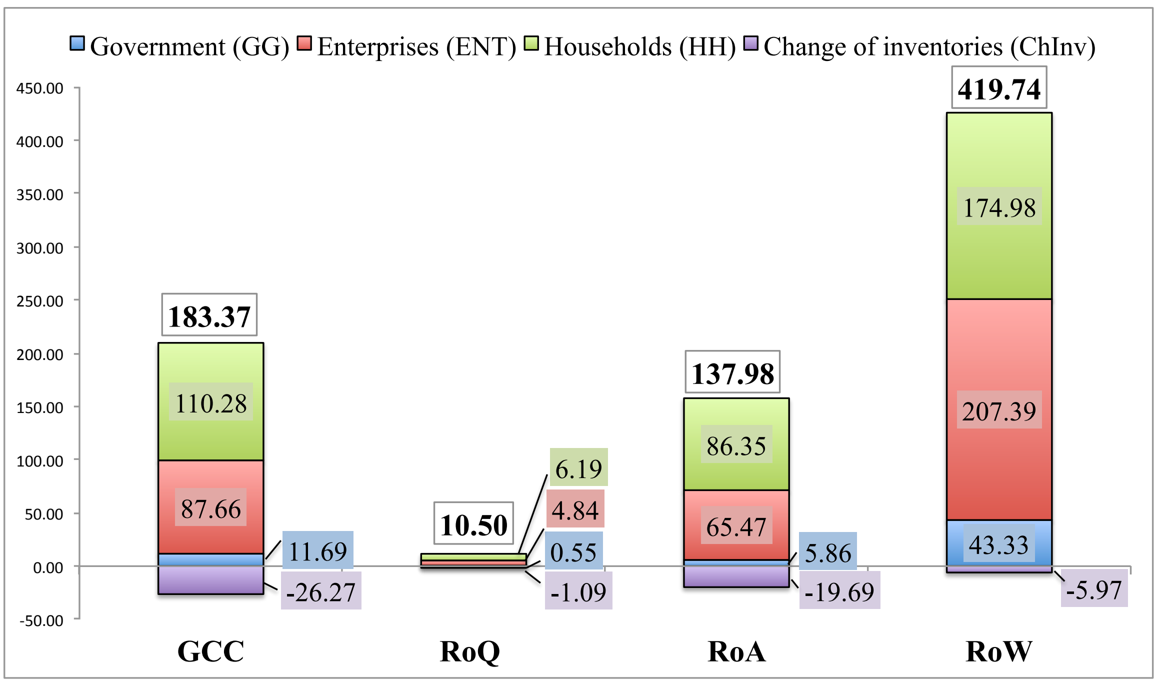


**Figure 4 – The Carbon Footprint (CF) of the GCC final demand consumption - during the goods supply chain, categorized by each one of the four assessed regions**

Figure 5 shows the CF of construction and estate services consumption by the GCC's final demand and its components. As the construction materials, this set of services did not present any $CO_2$ emission for RoQ and RoA because no GCC's consumption was computed for services provided in these regions – which means that all construction services were provided locally. The most part of $CO_2$ emission is linked to services provided in GCC, corresponding to around 387 kt for the total emitted and around 151 kt, 201 kt and 35 kt for, households, enterprises and government, respectively. A small portion of $CO_2$ emission was estimated for RoW, in which the total final demand represents around 3.2 kt – where almost one hundred percent was linked to households" consumption.

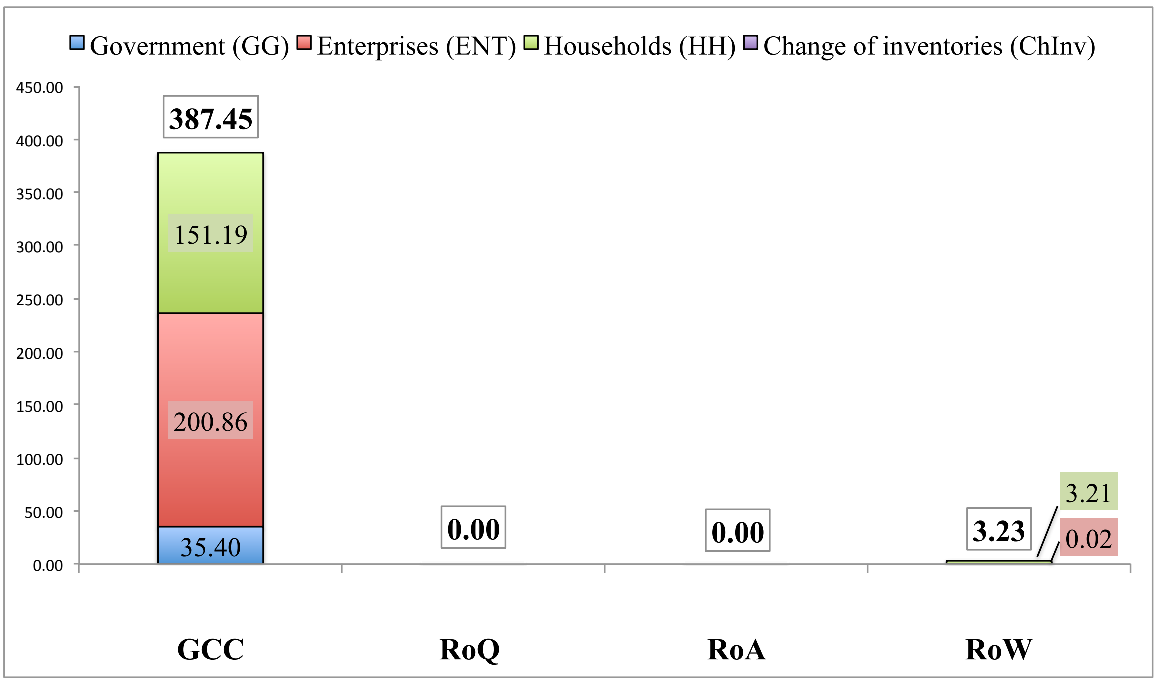


**Figure 5 – The Carbon Footprint (CF) of the GCC final demand consumption - during the construction and estate services supply chain, categorized by each one of the four assessed regions**

## 4. Carbon Footprinting the GCC's final demand of goods and built environment products

We have broken down the total amount of $CO_2$ emitted by the construction materials GCC's consumption - that was showed in the previous last three figures (Figure 3, Figure 4 and Figure 5). The values into the major emitters industries and its specific locations are shown in the Figure 6, Figure 7 and Figure 8. They show the CF of construction materials, goods and construction and estate services consumption, respectively. The sharing of $CO_2$ emissions of industries for each one of the regions has the same values for total final demand and for its own four different components: households, enterprises, government and change in inventories. Therefore, the next figures seek to show the CF of the total final demand consumption of products, since its industry emissions participation follows the same values of sharing.

It is possible to verify in the Figure 6 that 49% of the avoided $CO_2$ emissions to produce construction materials in GCC happened inside this city's border, while 39% and 12% were addressed to RoA and RoQ, respectively. From this 49%, construction materials industry would be responsible for the largest part of $CO_2$ emitted (48%), followed by goods (20%), electricity and transport (11%) and industry (6%). However, for the avoided emissions addressed to the RoA, this ranking is different due to electricity and industry being the major emitter industries in the construction materials supply chain of RoA region – 43% and 34%, respectively. Goods industry would represent 9% while transport would be responsible to 8%. Regarding the emissions avoided in the RoQ territory, electricity would respond to 47%, industry 32%, transport 9% and goods 8%.

In respect of the $CO_2$ emissions (0.62 kt) inside the Australian territory related to construction materials produced in the RoW (imported by GCC's final demand components), 77% is addressed to RoA, where industry, electricity, goods and transport are the largest emitters - with 47%, 19%, 13% and 13%, respectively. RoQ was responsible to 22% of the $CO_2$ emissions, which was divided by: 44% addressed to industry, 24% to electricity, 15% to transport and 10% to goods. Only around 1% was linked to emissions inside the GCC's region, which corresponds to a small amount of emissions related to its industries, as it can be verified in the Figure 6. These RoW proportions are the same for all of the "produced in RoW" set of products that are available in our analysis.

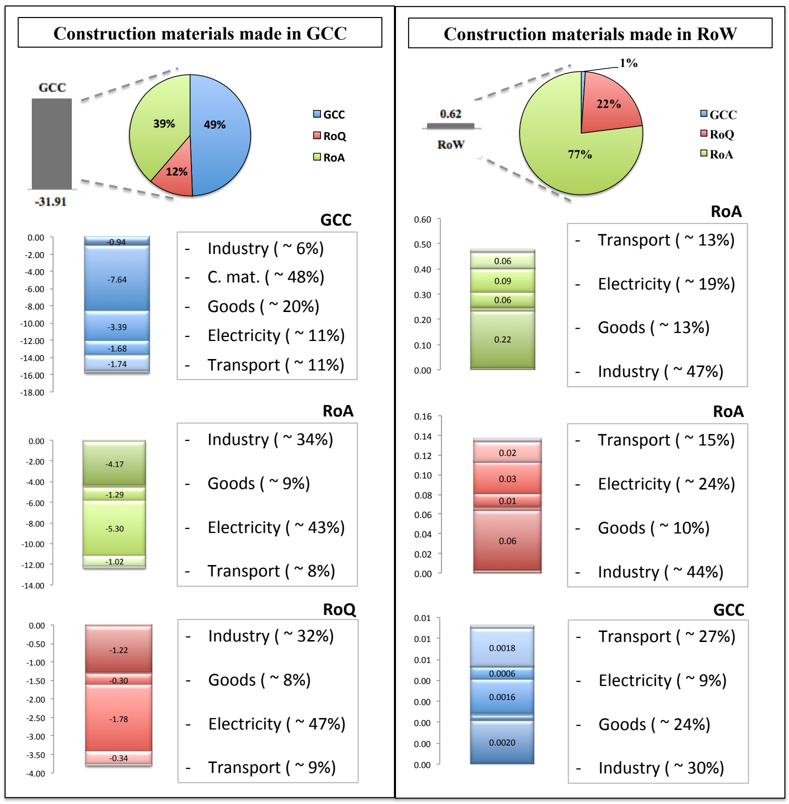


**Figure 6 - The Carbon Footprint (CF) of construction materials consumed by the GCC's final demand (C.mat = construction materials)**

According to Figure 4, the GCC's final demand consumption of this set of product s appraise goods from RoQ and RoA - besides GCC and RoW. Then, Figure 7 presents the CF of goods consumption by GCC's final demand showing the $CO_2$ emitted (inside the Australian territory) during the supply chain of goods produced in (following the anti-clockwise direction): GCC, RoQ, RoA and RoW.

The largest $CO_2$ emissions of goods produced in GCC belongs to emissions occurred in GCC (49%), where goods industry corresponds to around 72%, electricity 9%, industry 8% and transport 7%. The second largest emissions occurred in RoA (40%), with industry, electricity, goods and transport being the largest emitters: 40%, 37%, 10% and 8%, respectively. RoQ, the smallest parcel of emissions per region (12%), has industry and electricity as the largest emitters, followed by goods and transport - 39%, 38%, 11% and 8%, respectively.

The goods produced in RoQ have presented emissions inside the Australian territory only in the RoQ, with 81% and RoA, with 19%. From the RoQ, industry, electricity, goods and transport were the largest emitters industries: 41%, 21%, 18% and 12%, respectively. A similar thing occurred regarding the goods produced in RoA, as the supply chain of goods produced in RoA didn't present any $CO_2$ emission within the GCC's border - 92% and 8% were related to emissions inside the RoA and RoQ territory, respectively. The largest RoA industries emitters were goods, electricity, industry and transport – 41%, 24%, 24% and 6%, respectively. In the case of RoQ industries, the largest emitters were industry, electricity, transport and goods – 44%, 33%, 11% and 7%, respectively. The consumption of goods produced in the RoW presented more emissions than the ones of the construction materials products. However, as mentioned before, the proportion of regions and industries are exactly the same.

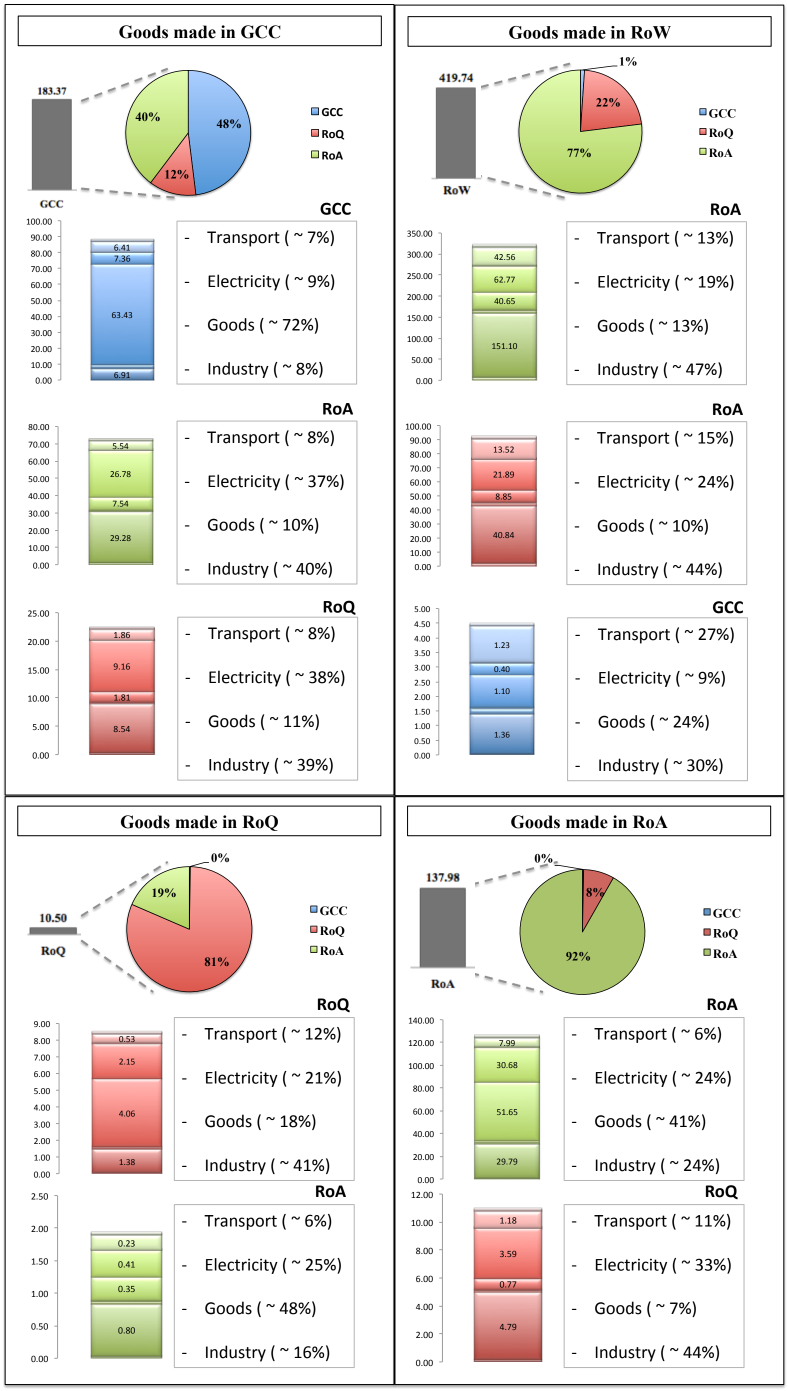


**Figure 7 - The Carbon Footprint (CF) of goods consumed by the GCC's final demand**

Figure 8 shows the emissions related to construction and estate services consumed by GCC's final demand. In the case of these services offered in GCC, which presents 44%

of the total, goods, electricity, transport, construction & estate services and construction materials were the largest emitters – 27%, 24%, 16%, 16% and 8%, respectively. RoA was responsible for 43% of the total of CF related to services offered in GCC and consumed by this region. Electricity, industry, goods and transport were the largest emitters – 45%, 30%, 11% and 9%, respectively. Part of this service supply chain linked to RoQ emitted 12% of the total. Electricity and industry were responsible to the largest part, 49% and 28%, respectively, followed by goods and transport, with, respectively 11% and 9%. The amount of $CO_2$ emitted by the GCC's final demand consumption of these services offered in RoW was relatively small, when compared to the ones offered in GCC: 3.23 kt.

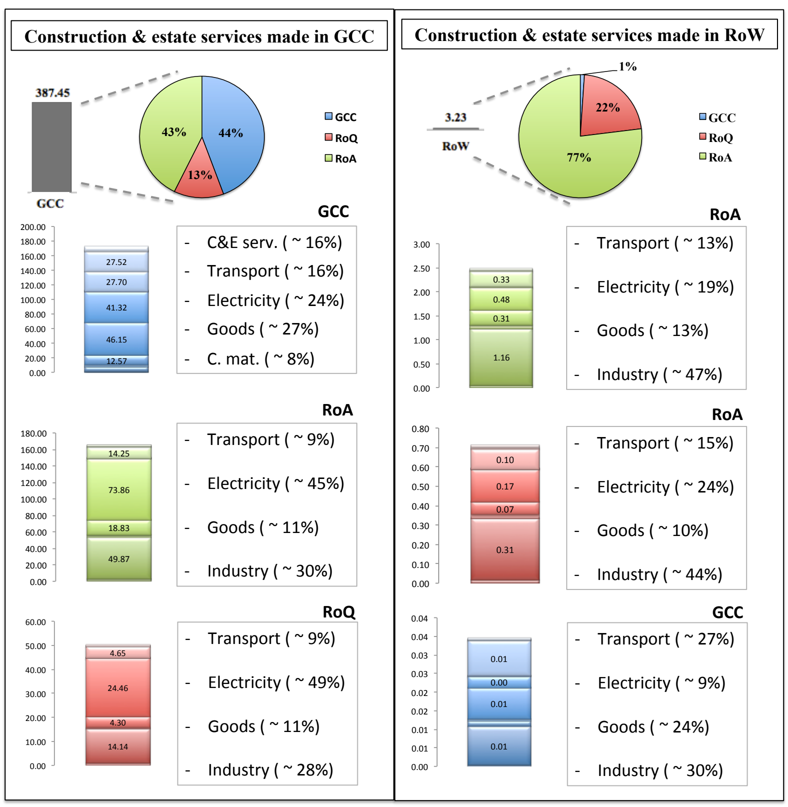


**Figure 8 - The Carbon Footprint (CF) of construction and estate services consumed by the GCC's final demand (C&E serv. = construction and estate services; C.mat = construction materials)**

## 5. Discussion and conclusion

The CF of the GCC's final demand consumption of the three assessed products is mostly concentrated in the four of the 12 set of industries appraised in our MR-SUT model: industry, goods, electricity and transport. A few exceptions were observed in the cases of construction materials, construction and estate services CF, since "construction materials" and "construction and estate services" have appeared as one of the largest emitters industries (only construction materials for the first one and both for the latter one).

This information sheds light on $CO_2$ emissions embodied in the indirect consumption of electricity and transport services when final consumers demand "construction materials", "goods" and "construction and estate services". This valuable insight is useful for supporting policy-makers decisions to improve its existent policies or even design new ones for mitigating $CO_2$ emissions.

Regarding the electricity and transport service suppliers, some incentives can be designed for achieving the purpose of the $CO_2$ emissions reduction inside the Australian territory. As a way to clarify the actions alternatives, we have selected some examples focusing on both industries[6], which are: (i) shifting part of coal thermal power plants in Australia by renewable sources – e.g.: the use of sugarcane bagasse for generating electricity, which is similar to alternatives studied in Malik et al. (2014), "wind farms" and etc.; (ii) applying more efficient technologies in terms of coal processing for the electricity generation (e.g.: as the case of Coal Integrated Gasification Combined-Cycle – CIGCC); (iii) implementing Carbon Capture and Storage (CCS) of $CO_2$ emitted by the thermal power plants in the country; (iv) investing in a freight transport infra-structure that could reduce the travel of the product from the producer's gate to final consumers; (iv) incentivizing the supply of bio-fuels and vehicles able to consume this set of fuel; (vi) as soon as conditions (i), (ii) and/or (iii) are properly working (the electricity from the Australian grid becomes less carbon intensive), incentivizing the implementation of electric and hybrid cars types in the Australian market;

[6] We understand that is impossible to exhaust all the possibilities of measures. The idea was just emphasize the ones that we currently recognize as interesting and suitable for the region – the lack of alternatives is broad and up to the public policy designer, researcher and etc. Even for these selected actions, it is still necessary to implement studies for better evaluate whether it is really worth applying or not.

In the case of industries that produce goods, industry products, construction materials and offer construction and estate services – the remaining of the set largest emitters in the construction materials, goods and construction and estate services' CF assessment – more policies to reduce the $CO_2$ emissions also can be designed. Incentives for making these products and services suppliers raise the production efficiency and adopting practices that decrease the $CO_2$ emissions during its production process, is an interesting path to explore.

Combining these types of measures with public policies focused on the consumer's behavior can also outcome in positive impacts in terms of $CO_2$ reduction of these set of products consumption – e.g.: public policy implementation that incentive measures for making the final consumers identifying from the micro-level perspective, the way of each firm produce its construction materials, goods and/or offer its construction and estate services. Highlighting the CF of these products consumption can facilitate the consumer's choice for products that are less carbon intensive. The preference for this type of products can make the firms search for implementing measures - as the ones that we have already cited - reducing the CF of its products. It influences other firms to adopt similar practices, which gradually becomes "business as usual" inside each industry – resulting in a positive impact from the $CO_2$ reduction macro-level point of view.

As we have mentioned in the methodology section, the MR-SUT that we have obtained from the IELab faces a lack of data regarding the RoW SUT database – we were able to use only a sub-set of this dataset, which were the GCC, RoQ and RoA inter-regional Use tables ($U_{RoW,GCC}$, $U_{RoW,RoQ}$, $U_{RoW,RoA}$), an estimated inter-regional RoW Use tables ($U_{GCC,RoW}$, $U_{RoQ,RoW}$, $U_{RoA,RoW}$) and its $CO_2$ satellite accounts. For the satellite accounts we have applied a simple exports vector disaggregation into a table with 12 columns (industries). Thus, the table $V_{RoW}$, the intra-regional Use table ($U_{RoW,RoW}$) and FD tables ($FD_{GCC,RoW}$, $FD_{RoQ,RoW}$ and $FD_{RoA,RoW}$) were missing, which means that, basically, our model assumes that RoW imports have the same CO2 intensity as the domestically produced products. Therefore, if they have been included (and also a more accurate inter-regional Use tables), the outcomes of "made in RoW" CF products would be as reliable as the ones presented for the other regions. As an example, the proportion of $CO_2$

emissions would be different for each one of the product columns – they would vary between them - in the CMs and it would be able to map the $CO_2$ emissions not only inside, but also outside of the Australian border. Both improvements would make, respectively, a more precise and comprehensive CF measurement than the one that we have obtained in this study.

As an analogy, it is like to have an incomplete Earth map, where the domestic country part of the mapped area (Australia in our case study) have a good resolution, while others, outside of the country, do not. For this "not so good mapped areas", some parts have no information about it while others have some, but with less resolution than the country area. Applying these improvements that we have mentioned, the whole world map would be with the same resolution level – the one that we have classified as "good" (the country resolution) – but, the regions outside of the country would still not have its particularities well mapped and then, the whole area would still be mixed in a generalized area called as "RoW".

If we could link our MR-SUT with a world MRIO model, it would be possible to break down this RoW region into countries – at the time of writing, Eora covers 187 nations and more than 99.99% of the whole global trade (Moran, 2013) – increasing the detail level of our map (continuing with the analogy). As an hypothetical example, it would be possible to know that the CF of construction materials made in GCC pursue embodied $CO_2$ emissions from some industries in Russia. And further, if we could also increase the disaggregation level of the model for more than 12 industries, our map's resolution would become even higher and then, we would be reaching an even more precise CFs results – our map would cover the whole world, with different regions specified by different country classifications in a high-detail level. As another hypothetical example, assume that we could trace many kinds of construction materials, as bricks, cement, tile and so on. Thus, we could be able to measure how much of $CO_2$ were emitted by the heavy machine industry in China due to produce some bricks made in GCC that were consumed by GCC's final demand.

The methodology applied can also be replicated to other studies that seeks to investigate the CF of other products, another region or, perhaps, applying to a different assessment approach, as using “field of influence” or “3D heat map diagrams” for identifying the largest embodied products inside the CM. In the case of this study, as we have estimated CMs that covers only 12 industries per region, we have decided to present them in its original shape - similar as the tables showed in the Figure 2. As we have mentioned before, all of them are exposed in the supplementary material of this study.

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## Supplementary material

The next following figures show the five estimated CMs: Total Final Demand' Carbon Map (TCM), Households' Carbon Map (HHCM), Government' Carbon Map (GovCM), Enterprises' Carbon Map (EntCM) and Change in Inventories' Carbon Map (ChInvCM).

The different highlighted values appointed to distinct classifications, which are:

- Red: the 10% top values;
- Yellow: null values;
- Green: negative values;

**Total**

| Region | Child | sector | GCC Products Agricul-ture | GCC Products Industry | GCC Products Food | GCC Products Cons-truction materials | GCC Products Goods | GCC Products Electricity | GCC Products Water supply & sewerage | GCC Products Waste | GCC Products Transport | GCC Products Cons-truction and estate services | GCC Products Governme nt services | GCC Products Business and private services | RoQ Products Agricul-ture | RoQ Products Industry | RoQ Products Food | RoQ Products Cons-truction materials | RoQ Products Goods | RoQ Products Electricity | RoQ Products Water supply & sewerage | RoQ Products Waste | RoQ Products Transport | RoQ Products Cons-truction and estate services | RoQ Products Governme nt services | RoQ Products Business and private services | RoA Products Agricul-ture | RoA Products Industry | RoA Products Food | RoA Products Cons-truction materials | RoA Products Goods | RoA Products Electricity | RoA Products Water supply & sewerage | RoA Products Waste | RoA Products Transport | RoA Products Cons-truction and estate services | RoA Products Governme nt services | RoA Products Business and private services | RoW Products Agricul-ture | RoW Products Industry | RoW Products Food | RoW Products Cons-truction materials | RoW Products Goods | RoW Products Electricity | RoW Products Water supply & sewerage | RoW Products Waste | RoW Products Transport | RoW Products Cons-truction and estate services | RoW Products Governme nt services | RoW Products Business and private services |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GCC | Industries | Agriculture | 1.39 | 0.00 | 2.11 | -0.01 | 0.12 | 0.03 | 0.01 | 0.00 | 0.07 | 0.42 | 0.11 | 0.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Industry | 0.04 | 7.44 | 1.73 | -0.94 | 6.91 | 8.51 | 0.26 | 0.10 | 1.42 | 7.37 | 1.35 | 5.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.00 | 0.15 | 0.78 | 0.00 | 0.00 | 0.07 | 0.00 | 0.07 | 0.00 | 0.01 | 0.00 | 0.13 | 0.00 | 1.36 | 0.00 | 0.00 | 0.00 | 0.14 | 0.01 | 0.03 | 0.12 |
| GCC | Industries | Food | 0.03 | 0.02 | 36.24 | -0.08 | 0.53 | 0.31 | 0.05 | 0.01 | 0.52 | 2.62 | 1.06 | 4.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.04 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.02 |
| GCC | Industries | Construction materials | 0.02 | 0.09 | 0.65 | -7.64 | 2.00 | 0.68 | 0.13 | 0.10 | 0.74 | 12.57 | 0.78 | 3.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.04 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| GCC | Industries | Goods | 0.28 | 0.34 | 10.70 | -3.39 | 63.43 | 6.36 | 1.02 | 0.55 | 10.05 | 46.15 | 9.48 | 29.92 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.05 | 0.03 | 0.00 | 0.00 | 0.08 | 0.31 | 0.00 | 0.00 | 0.05 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 1.10 | 0.00 | 0.00 | 0.00 | 0.11 | 0.01 | 0.02 | 0.09 |
| GCC | Industries | Electricity | 0.15 | 0.35 | 9.98 | -1.68 | 7.36 | 1532.16 | 1.12 | 0.13 | 6.03 | 41.32 | 6.21 | 20.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.00 | 0.07 | 6.84 | 0.00 | 0.00 | 0.05 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.40 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.01 | 0.03 |
| GCC | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.01 | 0.20 | 0.00 | 0.01 | 0.08 | 0.01 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Waste | 0.00 | 0.00 | 0.04 | -0.06 | 0.16 | 0.04 | 0.01 | 0.16 | 0.03 | 0.39 | 0.04 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Transport | 0.19 | 0.25 | 11.35 | -1.74 | 6.41 | 3.56 | 0.49 | 0.10 | 133.40 | 27.70 | 7.12 | 28.92 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.06 | 0.04 | 0.00 | 0.00 | 0.10 | 0.39 | 0.00 | 0.00 | 0.08 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 1.23 | 0.00 | 0.00 | 0.00 | 0.12 | 0.01 | 0.02 | 0.10 |
| GCC | Industries | Construction and estate services | 0.01 | 0.03 | 0.55 | -0.07 | 0.31 | 0.31 | 0.08 | 0.01 | 0.52 | 27.52 | 0.70 | 2.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Government services | 0.00 | 0.00 | 0.03 | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.04 | 0.15 | 4.01 | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Business and private services | 0.02 | 0.03 | 1.45 | -0.13 | 0.84 | 0.45 | 0.09 | 0.01 | 1.20 | 5.67 | 1.20 | 13.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| RoQ | Industries | Agriculture | 0.06 | 0.01 | 3.31 | -0.06 | 0.42 | 0.17 | 0.02 | 0.01 | 0.22 | 1.02 | 0.31 | 1.08 | 2.32 | 0.02 | 0.00 | 0.00 | 0.06 | 0.13 | 0.00 | 0.00 | 0.04 | 0.00 | 0.05 | 0.00 | 0.29 | 0.07 | 0.00 | 0.00 | 0.18 | 0.63 | 0.00 | 0.00 | 0.11 | 0.00 | 0.13 | 0.00 | 0.01 | 0.00 | 0.22 | 0.00 | 2.34 | 0.00 | 0.00 | 0.00 | 0.24 | 0.02 | 0.05 | 0.20 |
| RoQ | Industries | Industry | 0.11 | 0.27 | 5.19 | -1.22 | 8.54 | 8.28 | 0.37 | 0.13 | 3.27 | 14.14 | 3.40 | 10.00 | 0.35 | 6.41 | 0.00 | 0.00 | 1.38 | 10.86 | 0.00 | 0.01 | 0.38 | 0.00 | 0.33 | 0.00 | 1.98 | 2.09 | 0.00 | 0.00 | 4.79 | 30.21 | 0.00 | 0.07 | 2.22 | 0.00 | 2.26 | 0.00 | 0.16 | -0.04 | 3.90 | 0.06 | 40.84 | 0.00 | 0.00 | 0.01 | 4.14 | 0.31 | 0.83 | 3.48 |
| RoQ | Industries | Food | 0.01 | 0.00 | 0.25 | -0.03 | 0.19 | 0.11 | 0.01 | 0.00 | 0.11 | 0.44 | 0.12 | 0.33 | 0.07 | 0.02 | 0.00 | 0.00 | 0.05 | 0.17 | 0.00 | 0.00 | 0.04 | 0.00 | 0.07 | 0.00 | 0.08 | 0.05 | 0.00 | 0.00 | 0.13 | 0.49 | 0.00 | 0.00 | 0.08 | 0.00 | 0.09 | 0.00 | 0.01 | 0.00 | 0.17 | 0.00 | 1.78 | 0.00 | 0.00 | 0.00 | 0.18 | 0.01 | 0.04 | 0.15 |
| RoQ | Industries | Construction materials | 0.00 | 0.00 | 0.15 | -0.02 | 0.15 | 0.14 | 0.01 | 0.00 | 0.07 | 0.30 | 0.07 | 0.21 | 0.04 | 0.06 | 0.00 | 0.00 | 0.13 | 0.30 | 0.00 | 0.00 | 0.05 | 0.00 | 0.04 | 0.00 | 0.05 | 0.06 | 0.00 | 0.00 | 0.11 | 0.59 | 0.00 | 0.00 | 0.06 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.08 | 0.00 | 0.79 | 0.00 | 0.00 | 0.00 | 0.08 | 0.01 | 0.02 | 0.07 |
| RoQ | Industries | Goods | 0.05 | 0.05 | 2.14 | -0.30 | 1.81 | 1.32 | 0.11 | 0.03 | 1.02 | 4.30 | 1.04 | 2.91 | 0.67 | 0.44 | 0.00 | 0.00 | 4.06 | 2.87 | 0.00 | 0.02 | 0.70 | 0.00 | 0.58 | 0.00 | 0.45 | 0.32 | 0.00 | 0.00 | 0.77 | 4.16 | 0.00 | 0.01 | 0.46 | 0.00 | 0.48 | 0.00 | 0.04 | -0.01 | 0.85 | 0.01 | 8.85 | 0.00 | 0.00 | 0.00 | 0.90 | 0.07 | 0.18 | 0.75 |
| RoQ | Industries | Electricity | 0.20 | 0.35 | 11.43 | -1.78 | 9.16 | 152.43 | 0.97 | 0.15 | 5.96 | 24.46 | 6.09 | 18.85 | 1.28 | 1.58 | 0.00 | 0.00 | 2.15 | 956.20 | 0.00 | 0.03 | 1.56 | 0.00 | 1.43 | 0.00 | 1.98 | 1.85 | 0.00 | 0.00 | 3.59 | 295.63 | 0.00 | 0.05 | 2.36 | 0.00 | 2.38 | 0.00 | 0.09 | -0.02 | 2.09 | 0.03 | 21.89 | 0.00 | 0.00 | 0.00 | 2.22 | 0.17 | 0.44 | 1.86 |
| RoQ | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Waste | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.03 | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| RoQ | Industries | Transport | 0.05 | 0.05 | 2.41 | -0.34 | 1.86 | 1.32 | 0.12 | 0.03 | 1.33 | 4.65 | 1.24 | 3.62 | 0.46 | 0.33 | 0.00 | 0.00 | 0.53 | 2.23 | 0.00 | 0.01 | 6.89 | 0.00 | 0.45 | 0.00 | 0.73 | 0.48 | 0.00 | 0.00 | 1.18 | 5.33 | 0.00 | 0.02 | 0.89 | 0.00 | 0.82 | 0.00 | 0.05 | -0.01 | 1.29 | 0.02 | 13.52 | 0.00 | 0.00 | 0.00 | 1.37 | 0.10 | 0.27 | 1.15 |
| RoQ | Industries | Construction and estate services | 0.00 | 0.00 | 0.12 | -0.02 | 0.10 | 0.11 | 0.01 | 0.00 | 0.05 | 0.21 | 0.05 | 0.15 | 0.03 | 0.05 | 0.00 | 0.00 | 0.04 | 0.28 | 0.00 | 0.00 | 0.05 | 0.00 | 0.06 | 0.00 | 0.04 | 0.04 | 0.00 | 0.00 | 0.07 | 0.45 | 0.00 | 0.00 | 0.05 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.60 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.01 | 0.05 |
| RoQ | Industries | Government services | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.03 | 0.04 | 0.02 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 | 0.41 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.04 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| RoQ | Industries | Business and private services | 0.01 | 0.01 | 0.28 | -0.03 | 0.21 | 0.20 | 0.01 | 0.00 | 0.11 | 0.46 | 0.12 | 0.34 | 0.10 | 0.07 | 0.00 | 0.00 | 0.11 | 0.49 | 0.00 | 0.00 | 0.13 | 0.00 | 0.13 | 0.00 | 0.07 | 0.05 | 0.00 | 0.00 | 0.12 | 0.69 | 0.00 | 0.00 | 0.08 | 0.00 | 0.08 | 0.00 | 0.01 | 0.00 | 0.14 | 0.00 | 1.42 | 0.00 | 0.00 | 0.00 | 0.14 | 0.01 | 0.03 | 0.12 |
| RoA | Industries | Agriculture | 0.19 | 0.03 | 9.79 | -0.17 | 1.29 | 0.50 | 0.08 | 0.02 | 0.69 | 3.13 | 0.94 | 3.26 | 0.02 | 0.02 | 0.00 | 0.00 | 0.04 | 0.10 | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.00 | 27.30 | 0.34 | 0.00 | 0.00 | 1.12 | 3.03 | 0.00 | 0.01 | 0.68 | 0.00 | 0.88 | 0.00 | 0.03 | -0.01 | 0.71 | 0.01 | 7.43 | 0.00 | 0.00 | 0.00 | 0.75 | 0.06 | 0.15 | 0.63 |
| RoA | Industries | Industry | 0.41 | 0.86 | 18.19 | -4.17 | 29.28 | 25.03 | 1.32 | 0.42 | 11.61 | 49.87 | 12.31 | 35.24 | 0.48 | 0.32 | 0.00 | 0.00 | 0.80 | 2.03 | 0.00 | 0.01 | 0.47 | 0.00 | 0.45 | 0.00 | 9.62 | 108.64 | 0.00 | 0.00 | 29.79 | 217.75 | 0.00 | 0.42 | 11.18 | 0.00 | 11.11 | 0.00 | 0.61 | -0.13 | 14.44 | 0.22 | 151.10 | 0.01 | 0.02 | 0.02 | 15.31 | 1.16 | 3.07 | 12.86 |
| RoA | Industries | Food | 0.02 | 0.02 | 0.95 | -0.13 | 0.77 | 0.41 | 0.05 | 0.01 | 0.45 | 1.83 | 0.49 | 1.35 | 0.02 | 0.02 | 0.00 | 0.00 | 0.04 | 0.11 | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.00 | 1.10 | 0.42 | 0.00 | 0.00 | 1.00 | 4.06 | 0.00 | 0.01 | 0.83 | 0.00 | 1.35 | 0.00 | 0.03 | -0.01 | 0.72 | 0.01 | 7.55 | 0.00 | 0.00 | 0.00 | 0.76 | 0.06 | 0.15 | 0.64 |
| RoA | Industries | Construction materials | 0.01 | 0.01 | 0.57 | -0.09 | 0.55 | 0.44 | 0.03 | 0.01 | 0.29 | 1.22 | 0.30 | 0.85 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.06 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.64 | 1.00 | 0.00 | 0.00 | 1.97 | 6.08 | 0.00 | 0.08 | 0.88 | 0.00 | 0.89 | 0.00 | 0.01 | 0.00 | 0.32 | 0.00 | 3.31 | 0.00 | 0.00 | 0.00 | 0.34 | 0.03 | 0.07 | 0.28 |
| RoA | Industries | Goods | 0.19 | 0.19 | 8.50 | -1.29 | 7.54 | 4.56 | 0.48 | 0.11 | 4.46 | 18.83 | 4.55 | 12.56 | 0.22 | 0.14 | 0.00 | 0.00 | 0.35 | 0.89 | 0.00 | 0.00 | 0.22 | 0.00 | 0.20 | 0.00 | 9.95 | 5.92 | 0.00 | 0.00 | 51.65 | 55.37 | 0.00 | 0.48 | 11.69 | 0.00 | 10.91 | 0.00 | 0.16 | -0.04 | 3.88 | 0.06 | 40.65 | 0.00 | 0.00 | 0.01 | 4.12 | 0.31 | 0.82 | 3.46 |
| RoA | Industries | Electricity | 0.58 | 1.02 | 33.82 | -5.30 | 26.78 | 471.31 | 2.94 | 0.43 | 18.01 | 73.86 | 18.37 | 56.75 | 0.26 | 0.17 | 0.00 | 0.00 | 0.41 | 1.10 | 0.00 | 0.00 | 0.26 | 0.00 | 0.25 | 0.00 | 17.74 | 18.72 | 0.00 | 0.00 | 30.68 | 15761.75 | 0.00 | 0.49 | 23.64 | 0.00 | 23.78 | 0.00 | 0.25 | -0.06 | 6.00 | 0.09 | 62.77 | 0.00 | 0.01 | 0.01 | 6.36 | 0.48 | 1.27 | 5.34 |
| RoA | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.02 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.02 | 0.00 | 0.00 | 0.02 | 0.10 | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Waste | 0.00 | 0.00 | 0.05 | -0.01 | 0.05 | 0.03 | 0.00 | 0.00 | 0.03 | 0.14 | 0.03 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.03 | 0.00 | 0.00 | 0.16 | 0.42 | 0.00 | 0.13 | 0.05 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.35 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.01 | 0.03 |
| RoA | Industries | Transport | 0.14 | 0.15 | 7.04 | -1.02 | 5.54 | 3.43 | 0.37 | 0.08 | 4.08 | 14.25 | 3.79 | 11.01 | 0.14 | 0.09 | 0.00 | 0.00 | 0.23 | 0.61 | 0.00 | 0.00 | 0.14 | 0.00 | 0.14 | 0.00 | 6.13 | 3.94 | 0.00 | 0.00 | 7.99 | 36.11 | 0.00 | 0.11 | 87.15 | 0.00 | 7.38 | 0.00 | 0.17 | -0.04 | 4.07 | 0.06 | 42.56 | 0.00 | 0.00 | 0.01 | 4.31 | 0.33 | 0.86 | 3.62 |
| RoA | Industries | Construction and estate services | 0.01 | 0.01 | 0.33 | -0.04 | 0.27 | 0.26 | 0.02 | 0.00 | 0.14 | 0.59 | 0.15 | 0.43 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.03 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.46 | 0.54 | 0.00 | 0.00 | 0.56 | 4.30 | 0.00 | 0.01 | 0.75 | 0.00 | 0.96 | 0.00 | 0.01 | 0.00 | 0.17 | 0.00 | 1.78 | 0.00 | 0.00 | 0.00 | 0.18 | 0.01 | 0.04 | 0.15 |
| RoA | Industries | Government services | 0.00 | 0.00 | 0.06 | -0.01 | 0.05 | 0.03 | 0.00 | 0.00 | 0.04 | 0.14 | 0.05 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.00 | 0.07 | 0.31 | 0.00 | 0.00 | 0.10 | 0.00 | 5.74 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.43 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.01 | 0.04 |
| RoA | Industries | Business and private services | 0.02 | 0.02 | 0.90 | -0.13 | 0.68 | 0.53 | 0.04 | 0.01 | 0.38 | 1.55 | 0.40 | 1.14 | 0.02 | 0.02 | 0.00 | 0.00 | 0.03 | 0.11 | 0.00 | 0.00 | 0.03 | 0.00 | 0.03 | 0.00 | 1.25 | 0.85 | 0.00 | 0.00 | 1.58 | 7.80 | 0.00 | 0.02 | 1.96 | 0.00 | 1.98 | 0.00 | 0.02 | 0.00 | 0.48 | 0.01 | 4.99 | 0.00 | 0.00 | 0.00 | 0.51 | 0.04 | 0.10 | 0.42 |
| RoW | Industries | Agriculture | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Industry | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Food | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Construction materials | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Goods | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Transport | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Business and private services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**Figure 9 – Total Final Demand' Carbon Map (TCM)**

**HH**

| Region | Child | sector | GCC Products Agricul-ture | GCC Products Industry | GCC Products Food | GCC Products Cons-truction materials | GCC Products Goods | GCC Products Electricity | GCC Products Water supply & sewerage | GCC Products Waste | GCC Products Transport | GCC Products Cons-truction and estate services | GCC Products Governme nt services | GCC Products Business and private services | RoQ Products Agricul-ture | RoQ Products Industry | RoQ Products Food | RoQ Products Cons-truction materials | RoQ Products Goods | RoQ Products Electricity | RoQ Products Water supply & sewerage | RoQ Products Waste | RoQ Products Transport | RoQ Products Cons-truction and estate services | RoQ Products Governme nt services | RoQ Products Business and private services | RoA Products Agricul-ture | RoA Products Industry | RoA Products Food | RoA Products Cons-truction materials | RoA Products Goods | RoA Products Electricity | RoA Products Water supply & sewerage | RoA Products Waste | RoA Products Transport | RoA Products Cons-truction and estate services | RoA Products Governme nt services | RoA Products Business and private services | RoW Products Agricul-ture | RoW Products Industry | RoW Products Food | RoW Products Cons-truction materials | RoW Products Goods | RoW Products Electricity | RoW Products Water supply & sewerage | RoW Products Waste | RoW Products Transport | RoW Products Cons-truction and estate services | RoW Products Governme nt services | RoW Products Business and private services |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GCC | Industries | Agriculture | 1.01 | 0.00 | 2.11 | 0.00 | 0.07 | 0.03 | 0.01 | 0.00 | 0.05 | 0.17 | 0.03 | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Industry | 0.03 | 1.60 | 1.73 | 0.00 | 4.16 | 8.51 | 0.25 | 0.07 | 0.91 | 2.87 | 0.32 | 4.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.01 | 0.00 | 0.00 | 0.09 | 0.78 | 0.00 | 0.00 | 0.04 | 0.00 | 0.02 | 0.00 | 0.01 | 0.00 | 0.13 | 0.00 | 0.57 | 0.00 | 0.00 | 0.00 | 0.14 | 0.01 | 0.03 | 0.11 |
| GCC | Industries | Food | 0.02 | 0.00 | 36.23 | 0.00 | 0.32 | 0.31 | 0.05 | 0.00 | 0.33 | 1.02 | 0.25 | 3.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.04 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.01 |
| GCC | Industries | Construction materials | 0.01 | 0.02 | 0.65 | 0.00 | 1.20 | 0.68 | 0.13 | 0.07 | 0.47 | 4.90 | 0.19 | 2.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| GCC | Industries | Goods | 0.20 | 0.07 | 10.70 | 0.00 | 38.15 | 6.36 | 0.99 | 0.37 | 6.42 | 18.01 | 2.25 | 21.78 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.05 | 0.31 | 0.00 | 0.00 | 0.03 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.11 | 0.00 | 0.46 | 0.00 | 0.00 | 0.00 | 0.11 | 0.01 | 0.02 | 0.08 |
| GCC | Industries | Electricity | 0.11 | 0.08 | 9.98 | 0.00 | 4.43 | 1532.16 | 1.08 | 0.09 | 3.85 | 16.12 | 1.47 | 14.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.04 | 6.84 | 0.00 | 0.00 | 0.03 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.01 | 0.03 |
| GCC | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.19 | 0.00 | 0.01 | 0.03 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Waste | 0.00 | 0.00 | 0.04 | 0.00 | 0.10 | 0.04 | 0.01 | 0.11 | 0.02 | 0.15 | 0.01 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Transport | 0.14 | 0.05 | 11.35 | 0.00 | 3.86 | 3.56 | 0.48 | 0.07 | 85.20 | 10.81 | 1.69 | 21.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.01 | 0.00 | 0.00 | 0.06 | 0.39 | 0.00 | 0.00 | 0.05 | 0.00 | 0.02 | 0.00 | 0.01 | 0.00 | 0.12 | 0.00 | 0.51 | 0.00 | 0.00 | 0.00 | 0.12 | 0.01 | 0.02 | 0.10 |
| GCC | Industries | Construction and estate services | 0.01 | 0.01 | 0.55 | 0.00 | 0.18 | 0.31 | 0.08 | 0.01 | 0.33 | 10.74 | 0.17 | 1.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Government services | 0.00 | 0.00 | 0.03 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.03 | 0.06 | 0.95 | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Business and private services | 0.02 | 0.01 | 1.45 | 0.00 | 0.50 | 0.45 | 0.09 | 0.01 | 0.76 | 2.21 | 0.28 | 9.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| RoQ | Industries | Agriculture | 0.05 | 0.00 | 3.31 | 0.00 | 0.25 | 0.17 | 0.02 | 0.00 | 0.14 | 0.40 | 0.07 | 0.79 | 1.67 | 0.00 | 0.00 | 0.00 | 0.04 | 0.13 | 0.00 | 0.00 | 0.02 | 0.00 | 0.01 | 0.00 | 0.21 | 0.01 | 0.00 | 0.00 | 0.12 | 0.63 | 0.00 | 0.00 | 0.07 | 0.00 | 0.03 | 0.00 | 0.01 | 0.01 | 0.23 | 0.00 | 0.98 | 0.00 | 0.00 | 0.00 | 0.24 | 0.02 | 0.05 | 0.18 |
| RoQ | Industries | Industry | 0.08 | 0.06 | 5.18 | 0.00 | 5.13 | 8.28 | 0.36 | 0.08 | 2.09 | 5.52 | 0.81 | 7.28 | 0.25 | 1.39 | 0.00 | 0.00 | 0.82 | 10.86 | 0.00 | 0.01 | 0.24 | 0.00 | 0.08 | 0.00 | 1.45 | 0.45 | 0.00 | 0.00 | 3.00 | 30.21 | 0.00 | 0.05 | 1.41 | 0.00 | 0.54 | 0.00 | 0.18 | 0.15 | 3.93 | 0.05 | 17.02 | 0.00 | 0.00 | 0.01 | 4.14 | 0.31 | 0.83 | 3.16 |
| RoQ | Industries | Food | 0.00 | 0.00 | 0.25 | 0.00 | 0.11 | 0.11 | 0.01 | 0.00 | 0.07 | 0.17 | 0.03 | 0.24 | 0.05 | 0.00 | 0.00 | 0.00 | 0.03 | 0.17 | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.00 | 0.06 | 0.01 | 0.00 | 0.00 | 0.08 | 0.49 | 0.00 | 0.00 | 0.05 | 0.00 | 0.02 | 0.00 | 0.01 | 0.01 | 0.17 | 0.00 | 0.74 | 0.00 | 0.00 | 0.00 | 0.18 | 0.01 | 0.04 | 0.14 |
| RoQ | Industries | Construction materials | 0.00 | 0.00 | 0.15 | 0.00 | 0.09 | 0.14 | 0.01 | 0.00 | 0.05 | 0.12 | 0.02 | 0.16 | 0.03 | 0.01 | 0.00 | 0.00 | 0.07 | 0.30 | 0.00 | 0.00 | 0.03 | 0.00 | 0.01 | 0.00 | 0.04 | 0.01 | 0.00 | 0.00 | 0.07 | 0.59 | 0.00 | 0.00 | 0.04 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.08 | 0.00 | 0.33 | 0.00 | 0.00 | 0.00 | 0.08 | 0.01 | 0.02 | 0.06 |
| RoQ | Industries | Goods | 0.03 | 0.01 | 2.14 | 0.00 | 1.09 | 1.32 | 0.11 | 0.02 | 0.65 | 1.68 | 0.25 | 2.12 | 0.48 | 0.09 | 0.00 | 0.00 | 2.40 | 2.87 | 0.00 | 0.02 | 0.45 | 0.00 | 0.14 | 0.00 | 0.33 | 0.07 | 0.00 | 0.00 | 0.48 | 4.16 | 0.00 | 0.01 | 0.29 | 0.00 | 0.11 | 0.00 | 0.04 | 0.03 | 0.85 | 0.01 | 3.69 | 0.00 | 0.00 | 0.00 | 0.90 | 0.07 | 0.18 | 0.68 |
| RoQ | Industries | Electricity | 0.14 | 0.08 | 11.43 | 0.00 | 5.51 | 152.43 | 0.93 | 0.10 | 3.81 | 9.54 | 1.44 | 13.72 | 0.92 | 0.34 | 0.00 | 0.00 | 1.27 | 956.20 | 0.00 | 0.02 | 0.99 | 0.00 | 0.34 | 0.00 | 1.46 | 0.40 | 0.00 | 0.00 | 2.25 | 295.63 | 0.00 | 0.04 | 1.51 | 0.00 | 0.57 | 0.00 | 0.10 | 0.08 | 2.11 | 0.03 | 9.13 | 0.00 | 0.00 | 0.00 | 2.22 | 0.17 | 0.44 | 1.69 |
| RoQ | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Waste | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| RoQ | Industries | Transport | 0.04 | 0.01 | 2.41 | 0.00 | 1.12 | 1.32 | 0.11 | 0.02 | 0.85 | 1.82 | 0.29 | 2.63 | 0.33 | 0.07 | 0.00 | 0.00 | 0.31 | 2.23 | 0.00 | 0.00 | 4.40 | 0.00 | 0.11 | 0.00 | 0.54 | 0.10 | 0.00 | 0.00 | 0.74 | 5.33 | 0.00 | 0.01 | 0.57 | 0.00 | 0.19 | 0.00 | 0.06 | 0.05 | 1.30 | 0.02 | 5.64 | 0.00 | 0.00 | 0.00 | 1.37 | 0.10 | 0.27 | 1.05 |
| RoQ | Industries | Construction and estate services | 0.00 | 0.00 | 0.12 | 0.00 | 0.06 | 0.11 | 0.01 | 0.00 | 0.03 | 0.08 | 0.01 | 0.11 | 0.02 | 0.01 | 0.00 | 0.00 | 0.02 | 0.28 | 0.00 | 0.00 | 0.03 | 0.00 | 0.01 | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.04 | 0.45 | 0.00 | 0.00 | 0.03 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.01 | 0.05 |
| RoQ | Industries | Government services | 0.00 | 0.00 | 0.02 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.02 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| RoQ | Industries | Business and private services | 0.00 | 0.00 | 0.28 | 0.00 | 0.13 | 0.20 | 0.01 | 0.00 | 0.07 | 0.18 | 0.03 | 0.25 | 0.07 | 0.02 | 0.00 | 0.00 | 0.07 | 0.49 | 0.00 | 0.00 | 0.09 | 0.00 | 0.03 | 0.00 | 0.05 | 0.01 | 0.00 | 0.00 | 0.08 | 0.69 | 0.00 | 0.00 | 0.05 | 0.00 | 0.02 | 0.00 | 0.01 | 0.01 | 0.14 | 0.00 | 0.59 | 0.00 | 0.00 | 0.00 | 0.14 | 0.01 | 0.03 | 0.11 |
| RoA | Industries | Agriculture | 0.14 | 0.01 | 9.79 | 0.00 | 0.77 | 0.50 | 0.07 | 0.01 | 0.44 | 1.22 | 0.22 | 2.37 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.10 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 20.06 | 0.07 | 0.00 | 0.00 | 0.70 | 3.03 | 0.00 | 0.01 | 0.43 | 0.00 | 0.21 | 0.00 | 0.03 | 0.03 | 0.72 | 0.01 | 3.10 | 0.00 | 0.00 | 0.00 | 0.75 | 0.06 | 0.15 | 0.57 |
| RoA | Industries | Industry | 0.29 | 0.19 | 18.19 | 0.00 | 17.61 | 25.03 | 1.27 | 0.28 | 7.41 | 19.46 | 2.87 | 25.65 | 0.34 | 0.07 | 0.00 | 0.00 | 0.47 | 2.03 | 0.00 | 0.01 | 0.30 | 0.00 | 0.11 | 0.00 | 7.07 | 23.20 | 0.00 | 0.00 | 18.64 | 217.75 | 0.00 | 0.28 | 7.14 | 0.00 | 2.64 | 0.00 | 0.67 | 0.54 | 14.55 | 0.20 | 62.99 | 0.01 | 0.02 | 0.02 | 15.31 | 1.15 | 3.07 | 11.68 |
| RoA | Industries | Food | 0.01 | 0.00 | 0.95 | 0.00 | 0.46 | 0.41 | 0.05 | 0.01 | 0.29 | 0.72 | 0.12 | 0.98 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.11 | 0.00 | 0.00 | 0.02 | 0.00 | 0.01 | 0.00 | 0.81 | 0.09 | 0.00 | 0.00 | 0.63 | 4.06 | 0.00 | 0.01 | 0.53 | 0.00 | 0.32 | 0.00 | 0.03 | 0.03 | 0.73 | 0.01 | 3.15 | 0.00 | 0.00 | 0.00 | 0.76 | 0.06 | 0.15 | 0.58 |
| RoA | Industries | Construction materials | 0.01 | 0.00 | 0.57 | 0.00 | 0.33 | 0.44 | 0.03 | 0.01 | 0.18 | 0.48 | 0.07 | 0.62 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.06 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.47 | 0.21 | 0.00 | 0.00 | 1.23 | 6.08 | 0.00 | 0.05 | 0.56 | 0.00 | 0.21 | 0.00 | 0.01 | 0.01 | 0.32 | 0.00 | 1.38 | 0.00 | 0.00 | 0.00 | 0.34 | 0.03 | 0.07 | 0.26 |
| RoA | Industries | Goods | 0.14 | 0.04 | 8.50 | 0.00 | 4.54 | 4.56 | 0.46 | 0.07 | 2.85 | 7.35 | 1.08 | 9.14 | 0.16 | 0.03 | 0.00 | 0.00 | 0.21 | 0.89 | 0.00 | 0.00 | 0.14 | 0.00 | 0.05 | 0.00 | 7.31 | 1.27 | 0.00 | 0.00 | 32.32 | 55.37 | 0.00 | 0.32 | 7.46 | 0.00 | 2.59 | 0.00 | 0.18 | 0.14 | 3.91 | 0.05 | 16.94 | 0.00 | 0.00 | 0.01 | 4.12 | 0.31 | 0.82 | 3.14 |
| RoA | Industries | Electricity | 0.42 | 0.22 | 33.82 | 0.00 | 16.10 | 471.31 | 2.83 | 0.29 | 11.50 | 28.82 | 4.36 | 41.31 | 0.19 | 0.04 | 0.00 | 0.00 | 0.24 | 1.10 | 0.00 | 0.00 | 0.17 | 0.00 | 0.06 | 0.00 | 13.04 | 4.00 | 0.00 | 0.00 | 19.20 | 15761.75 | 0.00 | 0.32 | 15.09 | 0.00 | 5.64 | 0.00 | 0.28 | 0.22 | 6.04 | 0.08 | 26.17 | 0.00 | 0.01 | 0.01 | 6.36 | 0.48 | 1.27 | 4.85 |
| RoA | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.02 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.01 | 0.10 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Waste | 0.00 | 0.00 | 0.05 | 0.00 | 0.03 | 0.03 | 0.00 | 0.00 | 0.02 | 0.05 | 0.01 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.10 | 0.42 | 0.00 | 0.08 | 0.03 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.01 | 0.03 |
| RoA | Industries | Transport | 0.10 | 0.03 | 7.04 | 0.00 | 3.33 | 3.43 | 0.35 | 0.05 | 2.61 | 5.56 | 0.90 | 8.02 | 0.10 | 0.02 | 0.00 | 0.00 | 0.14 | 0.61 | 0.00 | 0.00 | 0.09 | 0.00 | 0.03 | 0.00 | 4.50 | 0.84 | 0.00 | 0.00 | 5.00 | 36.11 | 0.00 | 0.08 | 55.66 | 0.00 | 1.75 | 0.00 | 0.19 | 0.15 | 4.10 | 0.06 | 17.74 | 0.00 | 0.00 | 0.01 | 4.31 | 0.33 | 0.86 | 3.29 |
| RoA | Industries | Construction and estate services | 0.01 | 0.00 | 0.33 | 0.00 | 0.17 | 0.26 | 0.02 | 0.00 | 0.09 | 0.23 | 0.04 | 0.32 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.34 | 0.12 | 0.00 | 0.00 | 0.35 | 4.30 | 0.00 | 0.01 | 0.48 | 0.00 | 0.23 | 0.00 | 0.01 | 0.01 | 0.17 | 0.00 | 0.74 | 0.00 | 0.00 | 0.00 | 0.18 | 0.01 | 0.04 | 0.14 |
| RoA | Industries | Government services | 0.00 | 0.00 | 0.06 | 0.00 | 0.03 | 0.03 | 0.00 | 0.00 | 0.02 | 0.06 | 0.01 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.01 | 0.00 | 0.00 | 0.04 | 0.31 | 0.00 | 0.00 | 0.06 | 0.00 | 1.36 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.01 | 0.03 |
| RoA | Industries | Business and private services | 0.01 | 0.00 | 0.90 | 0.00 | 0.41 | 0.53 | 0.04 | 0.01 | 0.24 | 0.61 | 0.10 | 0.83 | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 0.11 | 0.00 | 0.00 | 0.02 | 0.00 | 0.01 | 0.00 | 0.92 | 0.18 | 0.00 | 0.00 | 0.99 | 7.80 | 0.00 | 0.01 | 1.25 | 0.00 | 0.47 | 0.00 | 0.02 | 0.02 | 0.48 | 0.01 | 2.08 | 0.00 | 0.00 | 0.00 | 0.51 | 0.04 | 0.10 | 0.39 |
| RoW | Industries | Agriculture | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Industry | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Food | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Construction materials | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Goods | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Transport | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Business and private services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**Figure 10 – Households' Carbon Map (HHCM)**

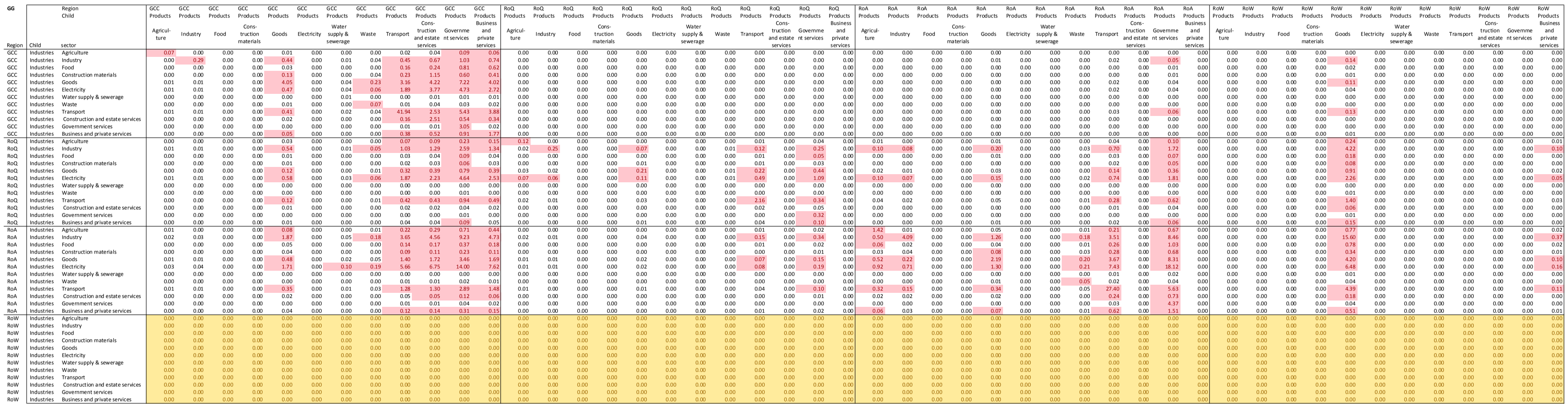

**Figure 11 – Government' Carbon Map (GovCM)**

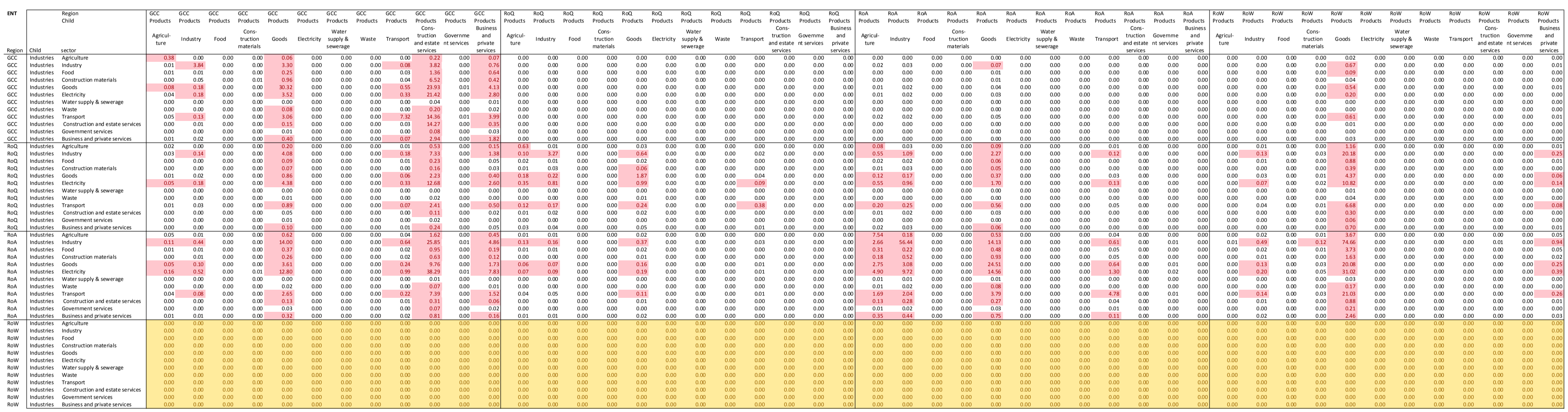

**Figure 12 – Enterprises' Carbon Map (EntCM)**

| ChIn Region | Child | Region Child sector | GCC Products Agricul-ture | GCC Products Industry | GCC Products Food | GCC Products Cons-truction materials | GCC Products Goods | GCC Products Electricity | GCC Products Water supply & sewerage | GCC Products Waste | GCC Products Transport | GCC Products Cons-truction and estate services | GCC Products Governme nt services | GCC Products Business and private services |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GCC | Industries | Agriculture | -0.07 | 0.00 | 0.00 | -0.01 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Industry | 0.00 | 1.72 | 0.00 | -0.94 | -0.99 | 0.00 | 0.00 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Food | 0.00 | 0.00 | 0.01 | -0.08 | -0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Construction materials | 0.00 | 0.02 | 0.00 | -7.65 | -0.29 | 0.00 | 0.00 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Goods | -0.01 | 0.08 | 0.00 | -3.39 | -9.09 | 0.00 | 0.00 | -0.05 | -0.08 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Electricity | -0.01 | 0.08 | 0.00 | -1.69 | -1.05 | 0.00 | 0.00 | -0.01 | -0.05 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Waste | 0.00 | 0.00 | 0.00 | -0.06 | -0.02 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Transport | -0.01 | 0.06 | 0.00 | -1.74 | -0.92 | 0.00 | 0.00 | -0.01 | -1.05 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Construction and estate services | 0.00 | 0.01 | 0.00 | -0.07 | -0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Business and private services | 0.00 | 0.01 | 0.00 | -0.13 | -0.12 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Agriculture | 0.00 | 0.00 | 0.00 | -0.06 | -0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Industry | -0.01 | 0.06 | 0.00 | -1.22 | -1.22 | 0.00 | 0.00 | -0.01 | -0.03 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Food | 0.00 | 0.00 | 0.00 | -0.03 | -0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Construction materials | 0.00 | 0.00 | 0.00 | -0.02 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Goods | 0.00 | 0.01 | 0.00 | -0.30 | -0.26 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Electricity | -0.01 | 0.08 | 0.00 | -1.78 | -1.31 | 0.00 | 0.00 | -0.01 | -0.05 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Transport | 0.00 | 0.01 | 0.00 | -0.34 | -0.27 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | -0.02 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Business and private services | 0.00 | 0.00 | 0.00 | -0.03 | -0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Agriculture | -0.01 | 0.01 | 0.00 | -0.17 | -0.18 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Industry | -0.02 | 0.20 | 0.00 | -4.18 | -4.19 | 0.00 | 0.00 | -0.04 | -0.09 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Food | 0.00 | 0.00 | 0.00 | -0.13 | -0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Construction materials | 0.00 | 0.00 | 0.00 | -0.09 | -0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Goods | -0.01 | 0.04 | 0.00 | -1.29 | -1.08 | 0.00 | 0.00 | -0.01 | -0.04 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Electricity | -0.03 | 0.24 | 0.00 | -5.31 | -3.84 | 0.00 | 0.00 | -0.04 | -0.14 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Waste | 0.00 | 0.00 | 0.00 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Transport | -0.01 | 0.04 | 0.00 | -1.02 | -0.79 | 0.00 | 0.00 | -0.01 | -0.03 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | -0.04 | -0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Government services | 0.00 | 0.00 | 0.00 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Business and private services | 0.00 | 0.00 | 0.00 | -0.11 | -0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Agriculture | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Industry | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Food | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Construction materials | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Goods | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Transport | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Business and private services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| Region | Child | sector | RoQ Products Agricul-ture | RoQ Products Industry | RoQ Products Food | RoQ Products Cons-truction materials | RoQ Products Goods | RoQ Products Electricity | RoQ Products Water supply & sewerage | RoQ Products Waste | RoQ Products Transport | RoQ Products Cons-truction and estate services | RoQ Products Governme nt services | RoQ Products Business and private services |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GCC | Industries | Agriculture | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Industry | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Food | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Construction materials | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Goods | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Transport | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Business and private services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Agriculture | -0.10 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Industry | -0.01 | 1.49 | 0.00 | 0.00 | -0.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Food | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Construction materials | 0.00 | 0.01 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Goods | -0.03 | 0.10 | 0.00 | 0.00 | -0.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Electricity | -0.05 | 0.37 | 0.00 | 0.00 | -0.22 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Transport | -0.02 | 0.08 | 0.00 | 0.00 | -0.05 | 0.00 | 0.00 | 0.00 | -0.05 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Construction and estate services | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Business and private services | 0.00 | 0.02 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Agriculture | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Industry | -0.02 | 0.07 | 0.00 | 0.00 | -0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Food | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Construction materials | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Goods | -0.01 | 0.03 | 0.00 | 0.00 | -0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Electricity | -0.01 | 0.04 | 0.00 | 0.00 | -0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Transport | -0.01 | 0.02 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Business and private services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Agriculture | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Industry | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Food | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Construction materials | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Goods | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Transport | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Business and private services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| Region | Child | sector | RoA Products Agricul-ture | RoA Products Industry | RoA Products Food | RoA Products Cons-truction materials | RoA Products Goods | RoA Products Electricity | RoA Products Water supply & sewerage | RoA Products Waste | RoA Products Transport | RoA Products Cons-truction and estate services | RoA Products Governme nt services | RoA Products Business and private services |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GCC | Industries | Agriculture | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Industry | 0.00 | 0.01 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Food | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Construction materials | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Goods | 0.00 | 0.01 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Electricity | 0.00 | 0.01 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Transport | 0.00 | 0.01 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Business and private services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Agriculture | -0.02 | 0.01 | 0.00 | 0.00 | -0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Industry | -0.12 | 0.48 | 0.00 | 0.00 | -0.68 | 0.00 | 0.00 | -0.01 | -0.02 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Food | -0.01 | 0.01 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Construction materials | 0.00 | 0.01 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Goods | -0.03 | 0.07 | 0.00 | 0.00 | -0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Electricity | -0.13 | 0.42 | 0.00 | 0.00 | -0.51 | 0.00 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Transport | -0.05 | 0.11 | 0.00 | 0.00 | -0.17 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Construction and estate services | 0.00 | 0.01 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Business and private services | 0.00 | 0.01 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Agriculture | -1.72 | 0.08 | 0.00 | 0.00 | -0.16 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Industry | -0.61 | 24.90 | 0.00 | 0.00 | -4.25 | 0.00 | 0.00 | -0.04 | -0.09 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Food | -0.07 | 0.10 | 0.00 | 0.00 | -0.14 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Construction materials | -0.04 | 0.23 | 0.00 | 0.00 | -0.28 | 0.00 | 0.00 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Goods | -0.63 | 1.36 | 0.00 | 0.00 | -7.37 | 0.00 | 0.00 | -0.04 | -0.09 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Electricity | -1.12 | 4.29 | 0.00 | 0.00 | -4.38 | 0.00 | 0.00 | -0.04 | -0.18 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Waste | 0.00 | 0.01 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Transport | -0.39 | 0.90 | 0.00 | 0.00 | -1.14 | 0.00 | 0.00 | -0.01 | -0.68 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Construction and estate services | -0.03 | 0.12 | 0.00 | 0.00 | -0.08 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Government services | 0.00 | 0.01 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Business and private services | -0.08 | 0.19 | 0.00 | 0.00 | -0.23 | 0.00 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Agriculture | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Industry | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Food | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Construction materials | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Goods | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Transport | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Business and private services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| Region | Child | sector | RoW Products Agricul-ture | RoW Products Industry | RoW Products Food | RoW Products Cons-truction materials | RoW Products Goods | RoW Products Electricity | RoW Products Water supply & sewerage | RoW Products Waste | RoW Products Transport | RoW Products Cons-truction and estate services | RoW Products Governme nt services | RoW Products Business and private services |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GCC | Industries | Agriculture | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Industry | 0.00 | -0.01 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Food | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Construction materials | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Goods | 0.00 | -0.01 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Electricity | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Transport | 0.00 | -0.01 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GCC | Industries | Business and private services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Agriculture | 0.00 | -0.02 | 0.00 | 0.00 | -0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Industry | -0.02 | -0.31 | -0.03 | -0.03 | -0.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.04 |
| RoQ | Industries | Food | 0.00 | -0.01 | 0.00 | 0.00 | -0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Construction materials | 0.00 | -0.01 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Goods | 0.00 | -0.07 | -0.01 | -0.01 | -0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 |
| RoQ | Industries | Electricity | -0.01 | -0.17 | -0.02 | -0.01 | -0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.02 |
| RoQ | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Transport | -0.01 | -0.10 | -0.01 | -0.01 | -0.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 |
| RoQ | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoQ | Industries | Business and private services | 0.00 | -0.01 | 0.00 | 0.00 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Agriculture | 0.00 | -0.06 | -0.01 | 0.00 | -0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 |
| RoA | Industries | Industry | -0.07 | -1.16 | -0.11 | -0.10 | -2.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.13 |
| RoA | Industries | Food | 0.00 | -0.06 | -0.01 | 0.00 | -0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 |
| RoA | Industries | Construction materials | 0.00 | -0.03 | 0.00 | 0.00 | -0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Goods | -0.02 | -0.31 | -0.03 | -0.03 | -0.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.04 |
| RoA | Industries | Electricity | -0.03 | -0.48 | -0.05 | -0.04 | -0.89 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.06 |
| RoA | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Transport | -0.02 | -0.33 | -0.03 | -0.03 | -0.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.04 |
| RoA | Industries | Construction and estate services | 0.00 | -0.01 | 0.00 | 0.00 | -0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoA | Industries | Business and private services | 0.00 | -0.04 | 0.00 | 0.00 | -0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Agriculture | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Industry | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Food | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Construction materials | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Goods | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Water supply & sewerage | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Waste | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Transport | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Construction and estate services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Government services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RoW | Industries | Business and private services | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**Figure 13 – Change in Inventories' Carbon Map (ChInvCM)**