

Greenhouse Gas Emissions Report 2017



1. FCC CONSTRUCCIÓN'S COMMITMENT

FCC Construcción, with more than 115 years' accumulated experience, is the construction company of FCC Group. Its business activities cover every field of construction areas, being a benchmark company in the construction of civil engineering works and buildings, both on the national market as well as internationally. FCC Construcción has a proven experience in the development of concession projects and it has a group of subsidiary companies involved in the industrial and energy sector and in construction-related activities (engineering, prefabrication, installations etc.).

Due the emerging threat of climate change on the future of the planet, the different administrations are increasing the regulatory requirement and the incentives to reduce emissions. After the agreements reached at the Conference of the Parties of the United Nations Framework Convention on the Climate Change 2015 (COP21) and 2016 (COP22), we firmly believe that a responsible and committed company such as FCC Construcción should position itself as a key agent in the definition of solutions.

Because of that, in 2017, FCC Construcción has started to implement the recommendations of the Financial Stability Board⁽¹⁾ (TFCD) working group on the climate change, which were presented at the summit of the G-20 in 2017. The TFCD report develops a framework to help companies understand and quantify the risks related to climate change, structuring the progress on climate change in four major blocks: *"Governance"*, *"Strategy"*, *"Risk Management"* and *"Metrics and Targets"*.

Despite recent progress, we have been aware of the importance of integrating in our activity the climate change management for a long time ago and, therefore, FCC Construcción materialized its commitment in 2010, with the design and implementation of a protocol for the quantification of Greenhouse Gas emissions in the construction sector. Since then, the company prepares and verifies annually its Greenhouse Gas (henceforth, GHG) emissions report, being **the first Spanish construction company to have it verified by AENOR and having since 2012 AENOR's Environmental certificate "CO2 verified"**, which guarantees both the accuracy of the organisation's Carbon Footprint calculation and the inclusion of the GHG management in the organisation's System and strategy. This initiative was awarded by the organization "Fundación Entorno" in 2012 with a prize in the category *"Management for sustainable development"* of the European Business Awards for the Environment.

In addition, in the interest of promoting transparency, **FCC Construcción has registered its carbon footprints from fiscal years 2012 to 2016 in the "Carbon footprint, offsetting and carbon sequestration project Register", created in 2014 by the Spanish Ministry for the Ecological Transition.** With this action, FCC Construcción was the first construction company to appear in said public list. With the carbon footprint of financial year 2015 and 2016, we have obtained the "Calculate and Reduce" label of the government, which, in addition to granting recognition and acknowledging the fact of being able to quantify and verify our Greenhouse Gases Emissions, it also identifies the company as an organisation which reduces its carbon footprint effectively. Specifically, FCC Construcción was awarded with this label for proving a 26.35% reduction of the average emission intensity for the triennium 2014-2016 in relation to the triennium 2013-2015, for its total carbon footprint (scopes 1, 2 and 3). The company's commitment for reducing emissions is also reflected in the *"#PorElClima Community"* platform, to which we adhered in 2016, after the Paris Agreement.

⁽¹⁾ Task Force on Climate Related Financial Disclosures (TFCD).

For the first time, in 2017, we have been developing a strategy for combating climate change, which structures in 4 main areas (mitigation, adaptation, communication and innovation) the work done and the results obtained since 2010. **In these seven years, we have calculated our carbon footprint, tracked down the most carbon intensive activities, established actions to reduce emissions, raised awareness among our stakeholders and communicated sector-based of Good Practices' examples.**

However, the company evolves, from a mainly national market to an international context in which we build representative projects, of greater volume; mainly civil engineering works and located in countries that are more vulnerable to climate change than Spain. Therefore, the climate change strategy must go hand in hand with this circumstance and in future years we must be able to continue monitoring and communicating our carbon footprint to the stakeholders of the countries in which we operate. Hence, our short-mid challenges are expanding the verification of the GHG emissions inventory internationally and working on the field related to adaptation to climate change, by assessing the impacts and analysing the vulnerability and opportunities of our company in our different locations.

This report includes the GHG inventory for 2017 reporting period, recording all emissions from the activities carried out at construction sites and premises of FCC Construcción located in Spain. This report is the responsibility of the Quality and CSR Director.

The report has been prepared according to the requirements of ISO Standard 14064-1:2012: *"Greenhouse Gases. Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals"* and of the sector guidelines of the European Network of Construction Companies for Research and Development (henceforth, ENCORD), May 2012 edition: *"Construction CO₂ Measurement Protocol"*. Said document has obtained the logo "Built on GHG Protocol", making it the sector guidance of GHG Protocol for construction companies.

The verification of the Greenhouse Gas inventory has been carried out with a limited level of assurance by AENOR. (see annex).

2. ORGANISATIONAL BOUNDARIES, OPERATIONAL BOUNDARIES AND EXCLUSIONS

2.1. Organisational boundaries

FCC Construcción uses the operational control approach for GHG emissions recording and for consolidation of GHG emissions data. This approach is recommended best practice, since it is the most appropriate for the activities of the construction sector. For the quantification of scope 1 and scope 2 emissions (emissions associated with the consumption of fuel and electricity), the GHG inventory does only consider those emissions over which the company has financial control, that is, the emissions deriving from consumption whose costs are assumed by FCC Construcción.

The information included in the GHG inventory for 2017 reporting period contains data of all centres located in Spain, taking centres to mean construction sites and premises (offices, warehouses and plant storage/maintenance facilities).

2.2. Operational boundaries

The emissions of the centres within the organisational boundaries of FCC Construcción are quantified, assuming the following scopes:

Scope 1: Direct GHG emissions

These are emissions from sources that are owned or controlled by the company. They include emissions deriving from the burning of fuel used by FCC Construcción. They can be broken down into:

- Emissions associated with fuel used at projects (construction sites).
- Emissions associated with fuel used at premises (offices, warehouses, plant storage /maintenance facilities).

Scope 2: Indirect GHG emissions

Scope 2 emissions are a consequence of the organisation's activities, but they occur at the facility where electricity is generated. They include emissions from the generation of purchased electricity consumed by FCC Construcción. They can be broken down into:

- Emissions associated with electricity used at projects.
- Emissions associated with electricity used at premises.

Scope 3: Other indirect GHG emissions

These emissions are a consequence of the company's activities, but they occur from sources not owned or controlled by FCC Construcción. It has been decided to include the following emissions under scope 3:

- Emissions associated with the production and transport of purchased materials.
They include emissions from the manufacture and transport to site of concrete, bituminous products (asphalt), steel, non-ferrous metals, brick and glass and emissions from transport to site of earth and graded aggregates.
- Emissions associated with the subcontracted work units.
They include earth-moving works.
- Emissions associated with the transport and management of surplus waste and materials.
They include emissions from the transport of surplus earth and surplus clean rubble and emissions from the transport and disposal in landfill of municipal waste and wood waste.
- Emissions associated with employee business travel.
- Emissions deriving from losses due to electricity transport and distribution.

2.3. Exclusions

FCC Construcción has decided to exclude from quantification any fugitive emissions from air-conditioning leaks from equipment controlled by the company, given its low representativeness (approximately 1%) with regard to the total emissions released by the company.

3. UNCERTAINTY AND MAXIMUM RELATIVE IMPORTANCE

The emissions' estimation uncertainty is a combination of the uncertainty in emission factors and in activity data.

The emission factors deployed to draw up FCC Construcción greenhouse gas inventory are obtained from official sources and they are specific to each emission source category. The selection of these emission factors is carried out aiming to reduce uncertainty, as far as proves possible. Unless there is clear evidence otherwise, it is assumed that the probability density functions are normal and hence that the uncertainty in emission factors is low.

The activity data derive from billing data, delivery notes, measurements and data from the construction project. Based on the supplementary guidance document about uncertainty assessment (*"Guidance on uncertainty assessment in GHG inventories and calculating statistical parameter uncertainty"*) drawn up by ECCR under the "GHG Protocol", we can assume that the origin of the FCC Construcción activity data guarantees the maximum achievable certainty for the various GHG emission sources.

A maximum relative importance level of 7% has been established with regard to the total reported Greenhouse Gas emissions.



Direct contribution



Indirect contribution

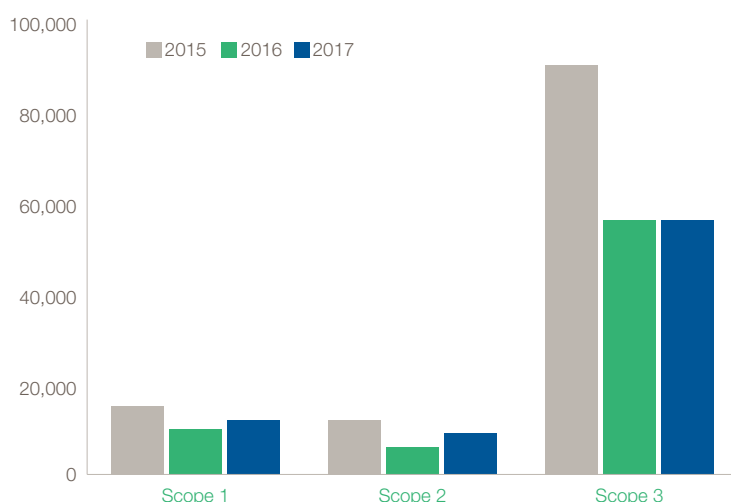


4. QUANTIFICATION OF GHG EMISSIONS

This section contains the GHG emissions' quantification of FCC Construcción in 2017 and compares them with the emissions of previous reporting periods.

Firstly, the emissions are classified by scopes as defined in the Standard UNE-ISO 14064-1.

EMISSIONS CLASSIFIED BY SCOPES (ACCORDING TO UNE-ISO 14064-1:2012)	t CO ₂ e 2011 (BASE YEAR)	t CO ₂ e 2014	t CO ₂ e 2015	t CO ₂ e 2016	t CO ₂ e 2017
Scope 1: Direct GHG emissions	28,357.76	17,778.58	13,588.02	4,960.20	6,535.61
Associated with fuel used at projects	25,677.81	17,371.73	12,889.49	3,785.59	3,709.67
Associated with fuel used at premises	2,679.95	406.85	698.53	1,174.61	2,825.94
Scope 2: Indirect GHG emissions	13,101.64	5,011.80	6,057.94	2,631.82	3,164.54
Associated with electricity used at projects	12,160.22	4,358.09	5,402.88	2,055.96	2,466.06
Associated with electricity used at premises	940.62	651.77	654.06	575.86	698.48
Associated with the use of electric vehicles	0.81	1.94	1.00	0.00	0.00
Scope 3: Other indirect emissions	197,934.39	202,698.57	89,279.94	55,005.96	55,043.16
Associated with the production and transport of purchased materials	141,144.12	166,047.60	62,021.89	39,154.38	37,900.16
Associated with the subcontracted work units	32,137.98	13,379.13	10,473.26	6,349.30	4,759.84
Associated with the transport and management of surplus waste and materials	17,960.24	10,846.66	6,714.70	2,880.55	7,327.18
Associated with employee business travel	6,123.98	11,998.07	9,615.97	6,393.86	4,819.15
Deriving from losses due to electricity transport and distribution	568.07	427.11	454.12	227.87	236.83
TOTAL EMISSIONS	239,393.79	225,488.95	108,925.90	62,597.98	64,743.31



FCC Construcción's GHG emissions remain stable

In 2017, the stability of the construction sector has caused that the Greenhouse Gas emissions maintained similar values in comparison with previous year.

Specifically for Scope 1, the GHG emissions of financial year 2017 are reported by Greenhouse Gas type.

SCOPE 1 EMISSIONS, CLASSIFIED BY GHG TYPE	t CO ₂ e 2017		
	TOTAL	PROJECTS	PREMISES
CO ₂	6,513.81	3,696.93	2,816.88
CH ₄	7.54	4.41	3.13
N ₂ O	14.26	8.33	5.93
ALL	6,535.61	3,709.67	2,825.94

In addition, the emissions are also classified and reported according to the emission blocks of the ENCORD sector guidelines.

EMISSIONS CLASSIFIED BY EMISSION BLOCKS (ACCORDING TO ENCORD GUIDELINES)	t CO ₂ e 2011 (BASE YEAR)	t CO ₂ e 2014	t CO ₂ e 2015	t CO ₂ e 2016	t CO ₂ e 2017
Construction ⁽²⁾					
1. Fuel (projects)	25,677.81	17,371.73	12,889.49	3,785.59	3,709.67
2. Fuel (premises)	2,679.95	406.85	698.53	1,174.61	2,825.94
3. Process and fugitive emissions ⁽³⁾	0.00	0.00	0.00	0.00	0.00
4. Electricity (projects)	12,160.22	4,358.09	5,402.88	2,055.96	2,466.06
5. Electricity (premises)	940.62	651.77	654.06	575.86	698.48
6. Heat	0.00	0.00	0.00	0.00	0.00
7. Vehicle fuel ⁽⁴⁾	1,446.61	366.88	392.46	322.64	293.55
8. Public transport	4,678.18	11,633.13	9,224.51	6,071.23	4,525.60
9. Subcontractor	32,137.98	13,379.13	10,473.26	6,349.30	4,759.84
10. Waste	17,960.24	10,846.66	6,714.70	2,880.55	7,327.18
11. Materials	141,144.12	166,047.60	62,021.89	39,154.38	37,900.16
TOTAL EMISSIONS	238,825.72	225,061.84	108,471.78	62,370.11	64,506.48⁽⁵⁾

⁽²⁾ The ENCORD sector protocol divides the construction sector into three key areas of operation: the materials manufacture stage (off-site production and transport of materials used for construction); the construction stage (project design, execution of the works, including demolition and refurbishment and on-site materials manufacture); and the operation stage (management or use of the final product). All FCC Construcción activities are included in the construction stage.

⁽³⁾ See section "2.3. Exclusions".

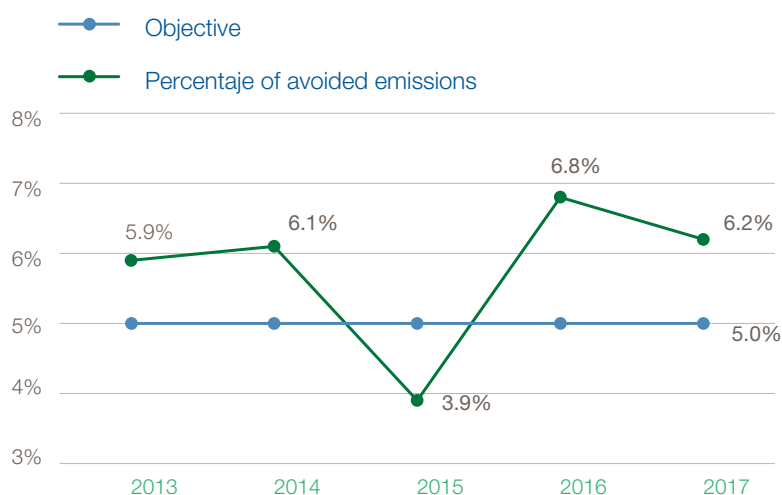
⁽⁴⁾ The emission block 7 only considers emissions associated to the use of vehicles powered by electricity and emissions associated to leased or privately owned vehicles used for business travel. Emissions associated to the business travel in company owned vehicles are included under the quantification of emissions associated with fuel consumption at construction sites and premises, corresponding to emission blocks 1 and 2, respectively.

⁽⁵⁾ The total emissions quantified in accordance with ENCORD guidelines do not coincide with the total emissions quantified according to the Standard UNE-ISO 14064-1. This is due to the fact that ENCORD guidelines do not include a category to classify "emissions deriving from losses due to electricity transport and distribution" which in 2017 stand at 236.83 t CO₂ eq. verified.

5. AVOIDED EMISSIONS

This section sets out a quantification of the avoided Greenhouse Gas emissions in the last 4 years (base year included for reference) due to the implementation of environmental good practices on site. The report details the emissions which are no longer produced by implementing the following directed actions, as defined according to the terminology of Standard UNE-ISO 14064:

AVOIDED EMISSIONS	t CO ₂ e 2011 (BASE-YEAR)	t CO ₂ e 2014	t CO ₂ e 2015	t CO ₂ e 2016	t CO ₂ e 2017
By reusing surplus material on site and not taking it to landfill	11,783.15	14,075.63	3,932.01	4,360.17	3,967.18
By pH neutralization with CO ₂	488.48	0.00	0.00	49.05	49.05
By suitable maintenance of the machinery operating on site	1,361.73	368.46	437.45	163.39	229.63
Due to vehicle speed control on site	80.71	78.94	26.92	21.66	21.48
Due to the use of electric vehicles	1.94	3.35	1.48	0.00	0.00
TOTAL EMISSIONS	13,716.01	14,526.38	4,397.86	4,594.27	4,267.34



Our environmental Good Practices continue to contribute to GHG emissions reduction.

By applying environmental good practices, **4,267 t CO₂e were not released** to the atmosphere. These avoided emissions would have meant **6.2% of the total** organisation's emissions.

6. BASE YEAR

Despite the fact that FCC Construcción already verified its GHG inventory for 2010 in accordance with the Standard UNE-ISO 14064-1:2006 and the ENCORD sector guidelines, 2011 has been selected as historic base year for GHG emissions to be compared over time, while the GHG inventory for 2010 reporting period has been considered as an initial inventory, useful for understanding the company's situation.

In 2012, some of the base year emissions concepts for 2011 were recalculated. The causes which led to the recalculation of said emissions can be found in the *GHG emissions report 2012*, available at the web site of FCC Construcción. Also in fiscal year 2014, some of the base year emissions concepts (from 2011 to 2013) were recalculated. Both the updated emission data and the causes which led to the recalculation of said emissions can be found in the *GHG emissions report 2014*, available at the company's web site.

Although there are no significant changes in 2017 that justify the need of recalculating the emissions of previous periods, the recalculation of the base year emissions will be carried out when any of the following aspects occurs:

- Changes in the operational boundaries that result in a significant change in the GHG emissions.
- Structural changes at FCC Construcción that have a significant impact on the company's base year GHG emissions.
- Changes in the GHG quantification methodologies and/or improvement in the accuracy of the emission factors that result in a significant change in the quantified GHG emissions data.
- Discovery of significant errors or of an accumulation of an important number of non-significant errors which, in an aggregate figure, have relevant consequences on the total quantified GHG emissions.

7. QUANTIFICATION METHODOLOGIES

FCC Construcción determines its Greenhouse Gas emissions using a calculation approach, multiplying the activity data compiled at each construction site or premise by the documented GHG emission factors which are selected and updated periodically at corporate level.

FCC Construcción uses a centralised approach, consolidating the activity data gathered at each construction site or premise and quantifying the GHG emissions at corporate level, though being able to create GHG emission reports at different levels (by project, business area, client type, geographical distribution, etc.)

Reference is made below to the quantification methodologies and GHG emission factors used to draw up this report.

Scope 1: Direct GHG emissions

- Emissions associated with fuel consumption.

To calculate these emissions, fuel consumption (at construction sites or at premises), according to FCC Construcción billing, is multiplied by the emission factors which have been calculated using the data from the spreadsheet *"Organisation's carbon footprint - Scope 1+2"* of the Spanish Ministry for the Ecological Transition (MITECO) in its 12th version (September 2018) and the data from Table 2.3 of *"2006 IPCC Guidelines for National Greenhouse Gas Inventories"*.

Scope 2: Indirect GHG emissions

- Emissions associated with electricity consumption.

To calculate these emissions, electricity consumption (at construction sites or at premises), according to FCC Construcción billing, is multiplied by the emission factor from the spreadsheet *“Organisation’s carbon footprint - Scope 1+2”* of the Spanish Ministry for the Ecological Transition (MITECO) in its 12th version (September 2018).

Scope 3: Other indirect GHG emissions

- Emissions associated with the production and transport of purchased materials.

The quantification methodology is based on activity data (materials’ production and consumption data and the distance travelled from their production site to the construction site) and on the emission factors associated with the production and transport of said materials.

The emission factor for asphalt (bituminous products) has been obtained from the verified emissions of FCC Construcción’s own premises, the emission factors for steel, non-ferrous metals, brick and glass have been obtained from a study of Cantabria University and the emission factor for concrete has been obtained from historical data of FCC Construcción plants’ electricity consumption.

The emission factors associated with transport have been obtained from the Annexes to the report by the UK Department for Environment, Food and Rural Affairs (DEFRA) *“2017 Government GHG Conversion Factors for Company Reporting”*.

- Emissions associated with the subcontracted work units.

To calculate emissions associated with earth-moving works, the methodology uses an emission factor which is calculated based on a study of the Machinery Directorate of FCC Construcción that determines the amount and type of fuel required to carry out earth-moving of a certain size and using the fuel emission factors from the spreadsheet *“Organisation’s carbon footprint - Scope 1+2”* of the Spanish Ministry for the Ecological Transition (MITECO) in its 12th version (September 2018) and the data from Table 2.3 of *“2006 IPCC Guidelines for National Greenhouse Gas Inventories”*.

- Emissions associated with the transport and management of surplus waste and materials.

The emissions associated with the transport and management of wastes and surplus materials are calculated, considering as activity data both the volumes of surplus rubble and earth and the weight of municipal waste and wood waste generated on site, as well as the distances from the construction site or premise to its final destination.

The emission factors associated with transport and landfill disposal have been obtained from Annexes to the report by the UK Department for Environment, Food and Rural Affairs (DEFRA) *“2017 Government GHG Conversion Factors for Company Reporting”*.

- Emissions associated with employee business travels.

The activity data required for calculating these emissions, in other words, the kilometres travelled by FCC Construcción employees in business travels, are supplied by the Corporate Department which obtains these data from the reports provided by the different suppliers.

The emission factors associated to the different forms of transport (car, coach, plane) derive from the Annexes to the Report by the UK Department for Environment, Food and Rural Affairs (DEFRA) *"2017 Government GHG Conversion Factors for Company Reporting"*. The emission factors associated with the employee business travels by train are obtained from the *"Practical Guide for the calculation of Greenhouse Gas emissions (GHG)"* of the Catalan Office for Climate Change.

- Emissions deriving from losses due to electricity transport and distribution.

These emissions are obtained as a product of the electricity consumption multiplied by an electricity distribution losses factor which is to be found in the Annexes to the DEFRA Report *"2017 Government GHG Conversion Factors for Company Reporting"*.

8. AENOR EXTERNAL ASSURANCE

See annex.



AENOR External Assurance

Declaración de Verificación de AENOR para FCC CONSTRUCCIÓN, S.A del Inventario de emisiones de gases de efecto invernadero correspondientes al 2017

EXPEDIENTE: 1994/0112/GEN/01

Introducción

FCC CONSTRUCCIÓN, S.A (en adelante la compañía) ha encargado a AENOR INTERNACIONAL, S.A.U. (AENOR) llevar a cabo una revisión limitada del Inventario de emisiones de gases de efecto invernadero (GEI) para el año 2017 de sus actividades incluidas en el informe de GEI correspondiente al año 2017, el cual es parte de esta Declaración.

AENOR se encuentra acreditada por la Entidad Mexicana de Acreditación, con número OVVGEI 004/14, conforme a la norma ISO 14065:2007, para la realización de verificación de emisiones de gases de efecto invernadero conforme a los requisitos establecidos en la norma ISO 14064-3:2006 para el sector de la energía.

Inventario de emisiones de GEI emitido por la Organización: FCC CONSTRUCCIÓN S.A., con domicilio social en AV CAMINO DE SANTIAGO, 40. 28050 - MADRID

Representantes de la Organización:

Director de Calidad y Formación de FCC CONSTRUCCIÓN S.A.

FCC CONSTRUCCIÓN S.A, tuvo la responsabilidad de reportar sus emisiones de GEI de acuerdo a la norma de referencia UNE-EN ISO 14064-1:2012

Objetivo

El objetivo de la verificación es facilitar a las partes interesadas un juicio profesional e independiente acerca de la información y datos contenidos en el Informe de GEI de mencionado.

Alcance de la Verificación

El alcance de la verificación se establece para las actividades que presta la compañía en toda España en sus instalaciones. Se entienden por instalaciones las obras y los centros fijos, entre los que se distinguen las oficinas, los almacenes y los parques de maquinaria.

Se han considerado todos los gases de efecto invernadero que la organización emite. El inventario de emisiones de FCC construcción incluye las emisiones de CO₂, CH₄ y N₂O.

Durante la verificación se analizó la información atendiendo al enfoque de control operacional que establece la norma UNE-EN ISO 14064-1:2012. Es decir, la compañía notifica todas las emisiones de GEIs atribuibles a las operaciones sobre las que ejerce control.

En cuanto al alcance de las actividades de la compañía estas se clasifican, siguiendo las directrices de la norma UNE-ISO 14064-1:2012 en directas e indirectas.

Las actividades directas, indirectas y exclusiones de la verificación

Emisiones directas (Alcance 1)

Se trata de las emisiones de fuentes que son propiedad o están controladas por la empresa. Incluyen las emisiones resultantes de la combustión de los combustibles consumidos por FCC Construcción. Se desglosan en:

- Emisiones asociadas al consumo de combustibles en obra.
- Emisiones asociadas al consumo de combustibles en centros fijos.

Emisiones indirectas (Alcance 2)

Las emisiones de alcance 2 se derivan de la actividad de la organización, pero ocurren en la planta donde se genera la electricidad. Incluyen las emisiones de la generación de electricidad comprada por FCC Construcción. Se desglosan en:

- Emisiones asociadas al consumo de energía eléctrica en obra.
- Emisiones asociadas al consumo de energía eléctrica en centros fijos.

Otras emisiones indirectas (Alcance 3)

Estas emisiones son consecuencia de las actividades de la empresa, pero se producen en fuentes que no son propiedad, ni están controladas por FCC Construcción. Se ha decidido incluir en el alcance 3 las siguientes emisiones:

- Emisiones asociadas a la producción y transporte de materiales consumidos. Se consideran las emisiones de la fabricación y transporte a obra del hormigón, del aglomerado asfáltico, del acero, metales no férreos, ladrillos y vidrio y las emisiones del transporte de las tierras y zahorras.
- Emisiones asociadas a la ejecución de unidades de obras subcontratadas. Se considera el movimiento de tierras.
- Emisiones asociadas al transporte y gestión de residuos y materiales sobrantes. Se consideran las emisiones asociadas al transporte de tierras sobrantes y escombros limpios sobrantes.
- Emisiones asociadas a desplazamientos del personal de la empresa por viajes de negocio.
- Emisiones derivadas de las pérdidas durante el transporte y distribución de la electricidad.

Exclusiones

FCC Construcción ha decidido excluir de la cuantificación las emisiones fugitivas de los equipos de aire acondicionado sobre los que tiene control, debido a que éstas poseen una baja representatividad respecto al total de emisiones.

Acciones dirigidas

La compañía ha presentado la cuantificación de las emisiones de Gases de Efecto Invernadero evitadas en el año 2017 debido a la implantación de buenas prácticas en obra así como por el empleo de vehículos eléctricos. Estas acciones que han sido consideradas son las siguientes:

- por reutilizar el material en la propia obra y no llevarlo a vertedero
- por neutralización del pH con CO₂
- por mantenimiento adecuado de maquinaria que funciona en obra
- por control de velocidad de los vehículos en obra
- por empleo de vehículos eléctricos

Año base

La organización ha establecido en el año **2011** su año base.

Importancia relativa

Para la verificación se acordó considerar discrepancias materiales aquellas omisiones, distorsiones o errores que puedan ser cuantificados y resulten en una diferencia mayor al 7% con respecto al total declarado de emisiones.

Criterios

Los criterios e información que se han tenido en cuenta para realizar la verificación han sido:

1. La norma UNE-ISO 14064-1:2012: Especificación con orientación, a nivel de las organizaciones, para la cuantificación y el informe de las emisiones y remociones de gases de efecto invernadero.
2. La norma UNE-ISO 14064-3:2012: Especificación con orientación para la validación y verificación de declaraciones sobre gases de efecto invernadero.
3. Directrices del referencial sectorial ENCORD –European Network of Construction Companies for Research and Development, de fecha mayo de 2012
4. Metodologías de cuantificación de emisiones establecidas en el documento “Guía para el cálculo de emisiones de gases de efecto invernadero en FCC Construcción”.
5. Sistemática para la realización del inventario de emisiones de GEI establecidas en el documento “Guía básica para la cuantificación de emisiones de gases de efecto invernadero”.

Por ultimo, fue objeto de la verificación el “Informe de emisiones de gases de efecto invernadero de 2017” elaborado por la compañía.

AENOR se exime expresamente de cualquier responsabilidad por decisiones, de inversión o de otro tipo, basadas en la presente declaración.

Conclusión

Considerando el nivel de aseguramiento limitado acordado con la organización, como conclusión de la verificación AENOR declara que:

Basado en lo anterior, en nuestra opinión no hay evidencia, que haga suponer que la información sobre emisiones reportada en el Informe de Gases de Efecto Invernadero 2017 de FCC CONSTRUCCIÓN, S.A. no sea una representación fiel de las emisiones de sus actividades.

AENOR

De forma consecuente con esta Declaración a continuación se relacionan los datos de emisiones/remociones finalmente verificados y las no conformidades, observaciones y oportunidades de mejora detectadas.

EMISIONES TOTALES

t CO ₂ e	
Alcance 1: Emisiones directas de GEI	6.535,61
asociadas al consumo de combustibles en obra	3.709,67
asociadas al consumo de combustibles en centros fijos	2.825,94
Alcance 2: Emisiones indirectas de GEI	3.164,54
asociadas al consumo de energía eléctrica en obra	2.466,06
asociadas al consumo de energía eléctrica en centros fijos	698,48
asociadas al consumo de energía eléctrica para vehículos	0,00
Alcance 3: Otras emisiones indirectas	55.043,16
asociadas a la producción y transporte de materiales consumidos	37.900,16
asociadas a la ejecución de unidades de obras subcontratadas	4.759,84
asociadas al transporte y gestión de residuos y materiales sobrantes	7.327,18
asociadas a desplazamientos del personal de la empresa por viajes de negocio	4.819,15
derivadas de las pérdidas durante el transporte y distribución de la electricidad	236,83
Emisiones Totales	64.743,31

t CO ₂ e	
Construcción	
1. Combustibles (obra)	3.709,67
2. Combustibles (centros fijos)	2.825,94
3. Emisiones fugitivas y de proceso (emisiones excluidas)	0,00
4. Energía eléctrica (obra)	2.466,06
5. Energía eléctrica (centros fijos)	698,48
6. Calor	0,00
7. Combustibles para vehículos	293,55
8. Desplazamiento del personal de la empresa	4.525,60
9. Subcontratistas	4.759,84
10. Residuos	7.327,18
11. Materiales	37.900,16
Emisiones Totales	64.506,48

EMISIONES EVITADAS (ACCIONES DIRIGIDAS Y EMISIONES CUANTIFICADAS)

t CO ₂ e	
por reutilizar el material en la propia obra y no llevarlo a vertedero	3.967,18
por neutralización del pH con CO ₂	49,05
por mantenimiento adecuado de maquinaria que funciona en obra	229,63
por control de velocidad de los vehículos en obra	21,48
por empleo de vehículos eléctricos	0,00
Emisiones Totales	4.267,34

Verificador Jefe:

D. Asier TORRES GONZÁLEZ

Madrid, a 12 de Diciembre de 2018

Revisor Técnico:

D. Fernando SEGARRA