

# **CIRCULAR ECONOMY IN THE FRAMEWORK OF THE SYSTEM OF ENVIRONMENTAL-ECONOMIC ACCOUNTING (SEEA)**

**Colombia**  
October / 2020



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# CONTENT

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- Progress in the Environmental Satellite Account (CSA)
- Circular Economy in Colombia
- Circular economy and the System of Environmental-Economic Accounting (SEEA)

# ENVIRONMENTAL SATELLITE ACCOUNT

Progress



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## ¿What is the Enviromental Satellite Account?



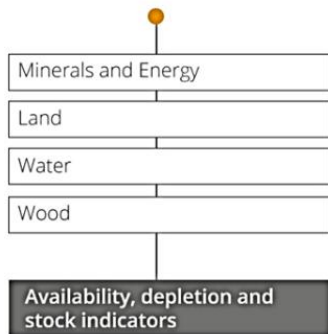
The environmental Satellite Account (CSA) is an interinstitutional Project led by DANE, that seeks to advance in the technical elaboration of the Economic and Environmental Accounts in Colombia, following the recommendation of the System of National Accounts (SNA) and the System of Environmental-Economic Accounting (SEEA) frameworks.

# Advances in the Environmental Satellite Account

## SEEA | SYSTEM OF ENVIRONMENTAL ECONOMIC ACCOUNTING (Colombia)

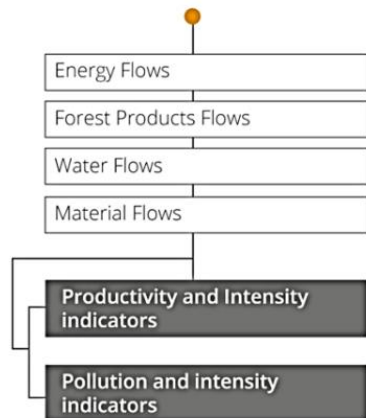
### STOCK ACCOUNTS

Physical terms  
Monetary terms

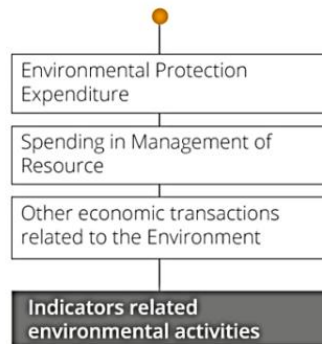


### FLOWS ACCOUNTS

Physical terms  
Monetary terms



### ENVIRONMENTAL ACTIVITIES AND RELATED TRANSACTIONS ACCOUNT





# CIRCULAR ECONOMY IN COLOMBIA

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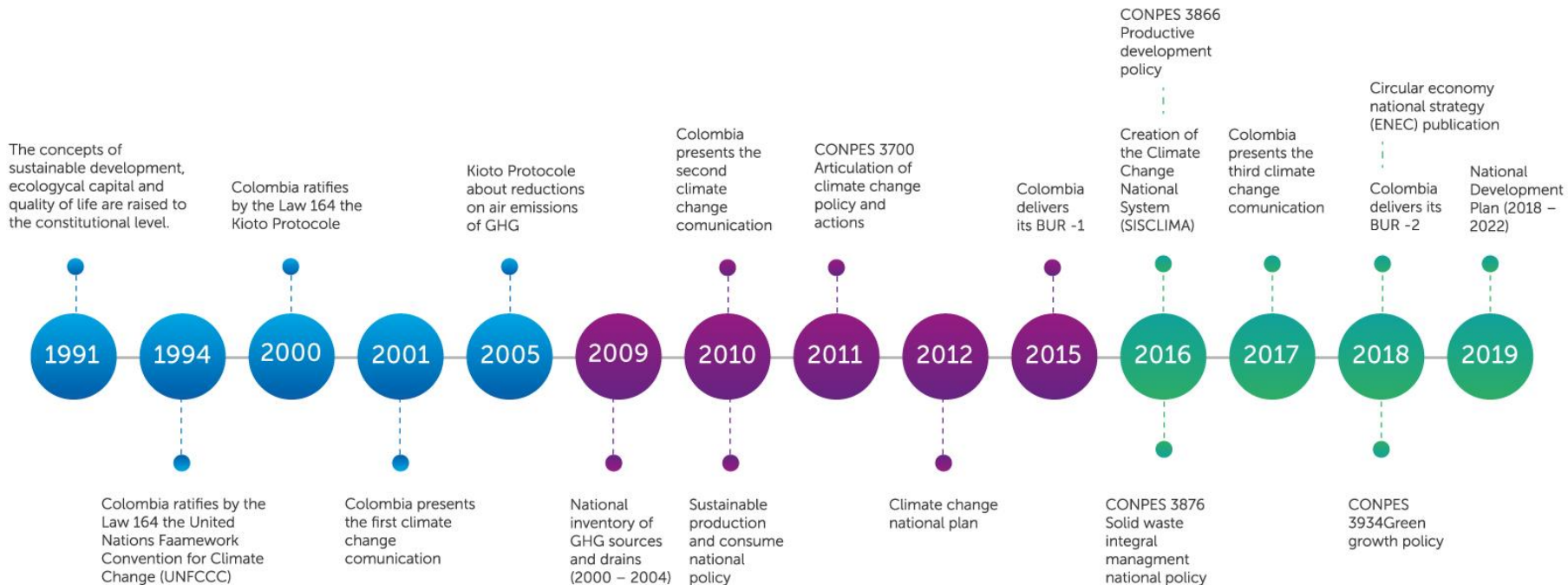
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# Circular economy satellite account in Colombia

Currently DANE is working on the circular economy satellite account design, based in the *Generic Statistical Business Process Model (GSBPM)*.

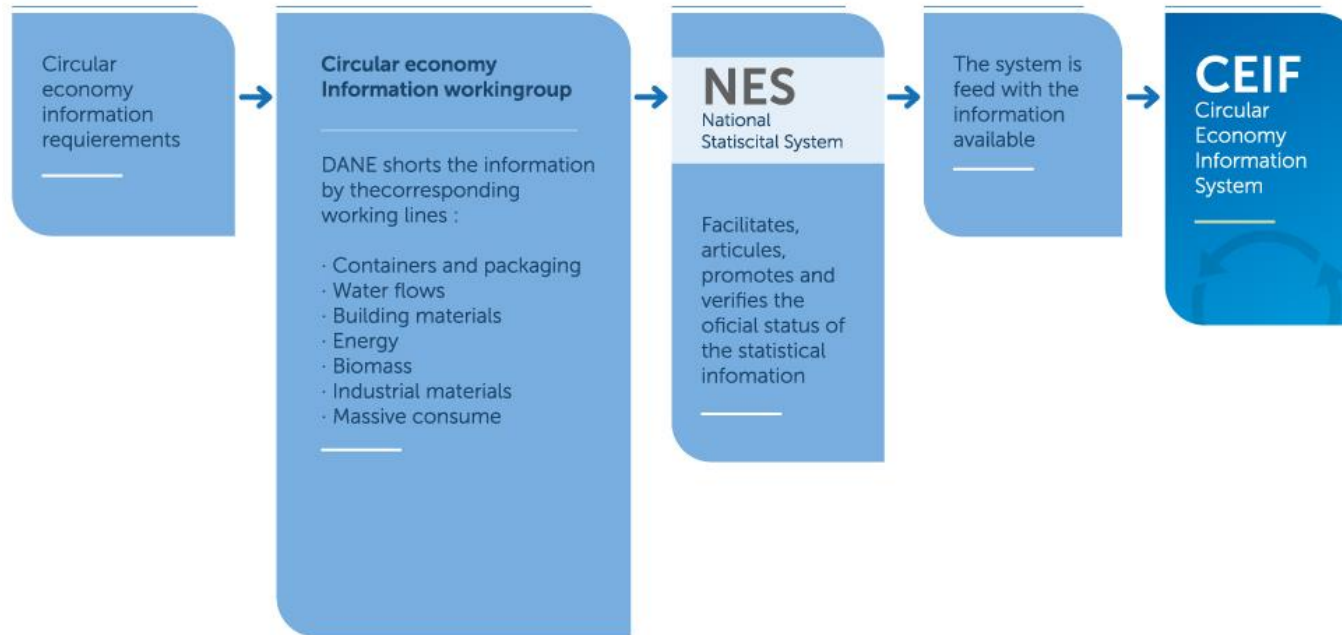
Overarching Processes							
Specify needs	Design	Build	Collect	Process	Analyse	Disseminate	Evaluate
1.1 Identify needs	2.1 Design outputs	3.1 Reuse or build collection instruments	4.1 Create frame and select sample	5.1 Integrate data	6.1 Prepare draft outputs	7.1 Update output systems	8.1 Gather evaluation inputs
1.2 Consult and confirm needs	2.2 Design variable descriptions	3.2 Reuse or build processing and analysis components	4.2 Set up collection	5.2 Classify and code	6.2 Validate outputs	7.2 Produce dissemination products	8.2 Conduct evaluation
1.3 Establish output objectives	2.3 Design collection	3.3 Reuse or build dissemination components	4.3 Run collection	5.3 Review and validate	6.3 Interpret and explain outputs	7.3 Manage release of dissemination products	8.3 Agree an action plan
1.4 Identify concepts	2.4 Design frame and sample	3.4 Configure workflows	4.4 Finalise collection	5.4 Edit and impute	6.4 Apply disclosure control	7.4 Promote dissemination products	
1.5 Check data availability	2.5 Design processing and analysis	3.5 Test production systems		5.5 Derive new variables and units	6.5 Finalise outputs	7.5 Manage user support	
1.6 Prepare and submit business case	2.6 Design production systems and workflow	3.6 Test statistical business process		5.6 Calculate weights			
		3.7 Finalise production systems		5.7 Calculate aggregates			
				5.8 Finalise data files			

# Achievements of Circular Economy in Colombia





## CEIS – Circular Economy Information System



The CEIS will be in charge of:

- Consolidating the statistical information related to circular economy which is produced by public and private institutions.
- Facilitating and disposing the Access to information related with circular economy for public search and decision making
- Contributing to the construction and approach of the knowledge related to circular economy in the country.
- Answer to the statistical information demand related to circular economy at the national and international level

## Progress in the measurement of the Circular Economy

2018

### November:

DANE reviews the first versión of the circular economy national strategy (ENEC), which was published by Ministry of Environment and Sustainable Development

### November / December:

DANE reviews the references on circular economy and defines the concept for Colombia

2019

### January / April:

1. DANE makes the conceptual restructuring for the Environmental Statistics Information Workinggroup.
2. Meetings are done with the Ministry of Environment and Sustainable Development and the other entities of the Circular Economy National Strategy

### February / April:

DANE reviews references for measurement and indicators of circular economy. A list of indicators is developed with the aim of include those in the circular economy information System.

### June / August:

A joint work between DANE and Ministry of Environment and Sustainable Development was done to review and adjust the sketch of indicators in the Circular Economy National Strategy.

DANE does workshops for the desing, contruccion and formulation of indicators.

## Progress in the measurement of the Circular Economy

2020

### **August / December:**

DANE starts the conceptual desing of the first circular economy report for Colombia. The IDEAM participates by providing indicators.

### **September / December:**

DANE does the sketch document for the desing of the Circular Economy Information System

### **January / May:**

DANE makes conceptual adjustments to the first proposal of the circular economy first report 2019 and elaborates the circular economy first report

DANE starts the development of the circular economy satellite account.

### **May:**

1. The National Statistical Plan creates the strategy fot the desing and implementation for the Circular Economy Information System

2. DANE adjust the proposal for the desing of the Circular Economy Information System

### **August:**

First circular economy report publication

# **Circular Economy and the System of Enviromental-Economic Accounting**

## **Enviromental Satellite Account**



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## System economic and environmental accounting

The report contains a total of 44 indicators of available statistical information, categorized into four components of the Circular Economy from the point of view of output or product, the analysis is focused on the agent as a producer or generator of that output.

Of which, the Environmental Satellite Account (CSA) presents 28 indicators under the Framework of the System of Environmental-Economic Accounting (SEEA).



**1**  
**Environmental assets  
extraction**

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**3**  
**Consumption & use**

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**2**  
**Goods and services  
production**

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**4**  
**Closure and optimization  
on the life cycle of  
material and products**

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# Environmental assets extraction

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## Available CSA indicators:

### Availability of mining reserves

DANE. Environmental and economic asset account of mineral and energy resources

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### Mining-energy resource extraction rate

DANE. Environmental and economic asset account of mineral and energy resources

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### Variation in the stock of mining reserves

DANE. Environmental and economic asset account of mineral and energy resources

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### Consumption of forest products by economic activity

DANE. Environmental and economic account of flows of forest products

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### Intensity of use of forest products by economic activity

DANE. Environmental and economic account of flows of forest products

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### Use of water distributed by economic activity

DANE. Environmental and economic asset account of mineral and energy resources

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### Water intensity by economic activity

DANE. Environmental and economic account of water flows

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## Availability of mining reserves

Total of the nation 2005-2019<sup>p</sup>



For 2019<sup>p</sup>, with the closing stock registered and maintaining the same extraction levels, an availability of coal is projected for 73 years, natural gas for 8 years and oil for 6 years.

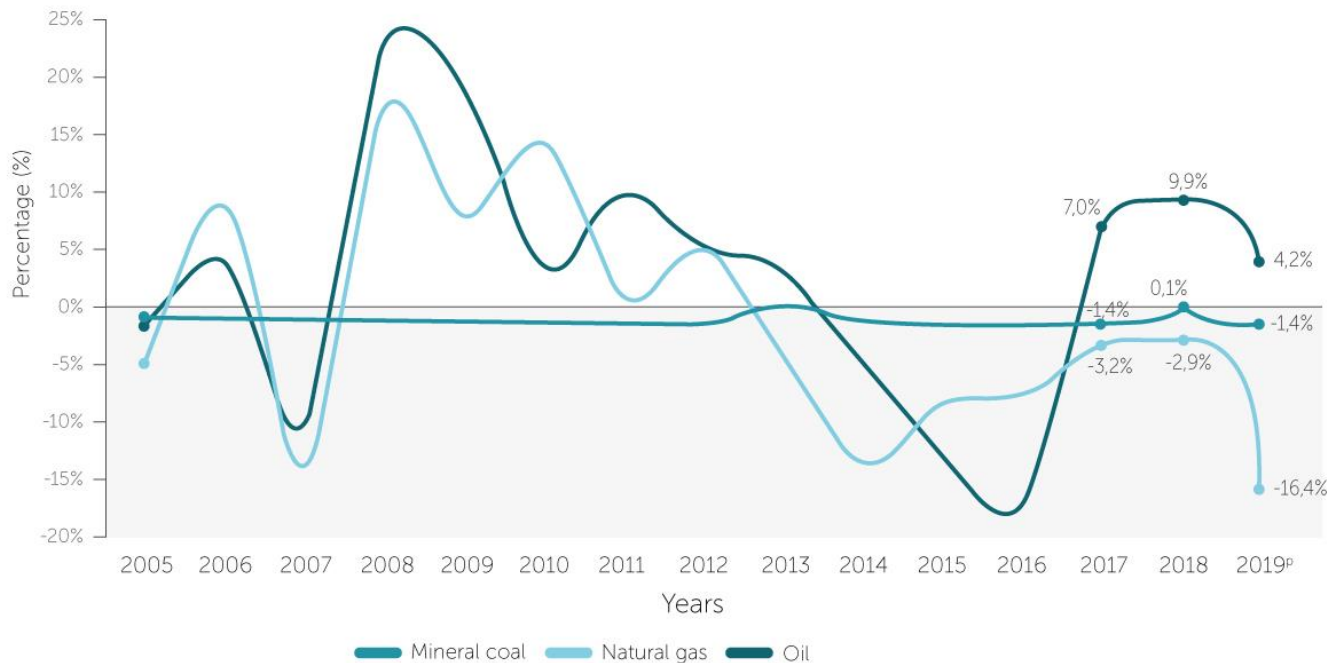
*The indicator allows knowing the availability of the asset in a time horizon. The greater or lesser availability is subject to changes in the asset that may occur during each year.*

p: provisional

**Source:** DANE - Environmental and economic asset account of mineral and energy resources.

# Variation in the stock of mining reserves

Total of the nation 2005-2019<sup>p</sup>



p: provisional

**Source:** DANE - Environmental and economic asset account of mineral and energy resources.



# Goods and services production

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## Available CSA indicators:

### **Green jobs and jobs associated with environmental activities**

DANE. Environmental and economic account of environmental activities and associated transactions

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### **Proportion of environmental taxes with over the total taxes**

DANE. Environmental and economic account of environmental activities and associated transactions

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### **Proportion of government spending on environmental activities with respect to total government spending**

DANE. Environmental and economic account of environmental activities and associated transactions

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### **Proportion of government spending on environmental protection and resource management activities**

DANE. Environmental and economic account of environmental activities and associated transactions

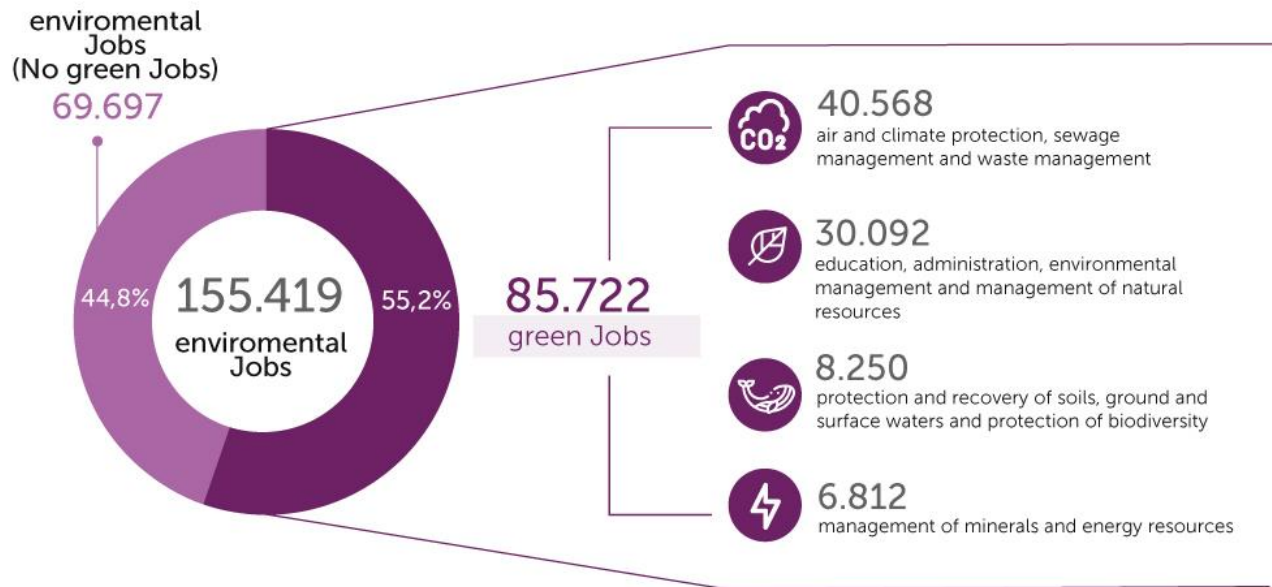
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### **Share of the added value of the material recovery activity**

DANE. Environmental and economic account of material flow - solid waste

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## Green jobs and jobs associated with environmental activities



In 2019<sup>pr</sup>, jobs associated with environmental activities amounted to **155,419 full-time equivalent jobs**, of these **85,722** jobs met the characteristics established to be **green jobs**.

*This indicator is calculated from the labor supply of households and from the Full Time Equivalent Jobs – FTEJ.*

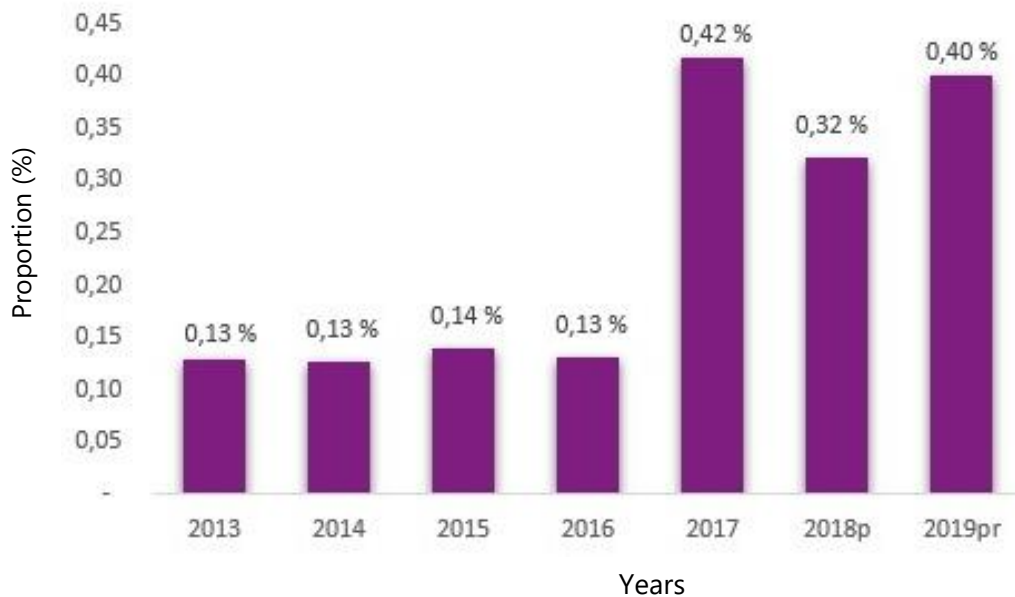
pr: preliminary

Source: DANE - Environmental and economic account of environmental activities and associated transactions



## Proportion of environmental taxes with respect to total taxes

Total of the nation 2013 – 2019<sup>pr</sup>



pr: preliminary

Source: DANE - Environmental and economic account of environmental activities and associated transactions



# Consumption & Use

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## Available CSA indicators:

### **Intermediate consumption of energy products by economic activity**

DANE. Environmental and economic account of energy flows

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### **Energy intensity by economic activity**

DANE. Environmental and economic account of energy flows

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### **Energy consumption by households**

DANE. Environmental and economic account of energy flows

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### **Per capita energy consumption**

DANE. Environmental and economic account of energy flows

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### **Per capita consumption of firewood**

DANE. Environmental and economic account of flows of forest products

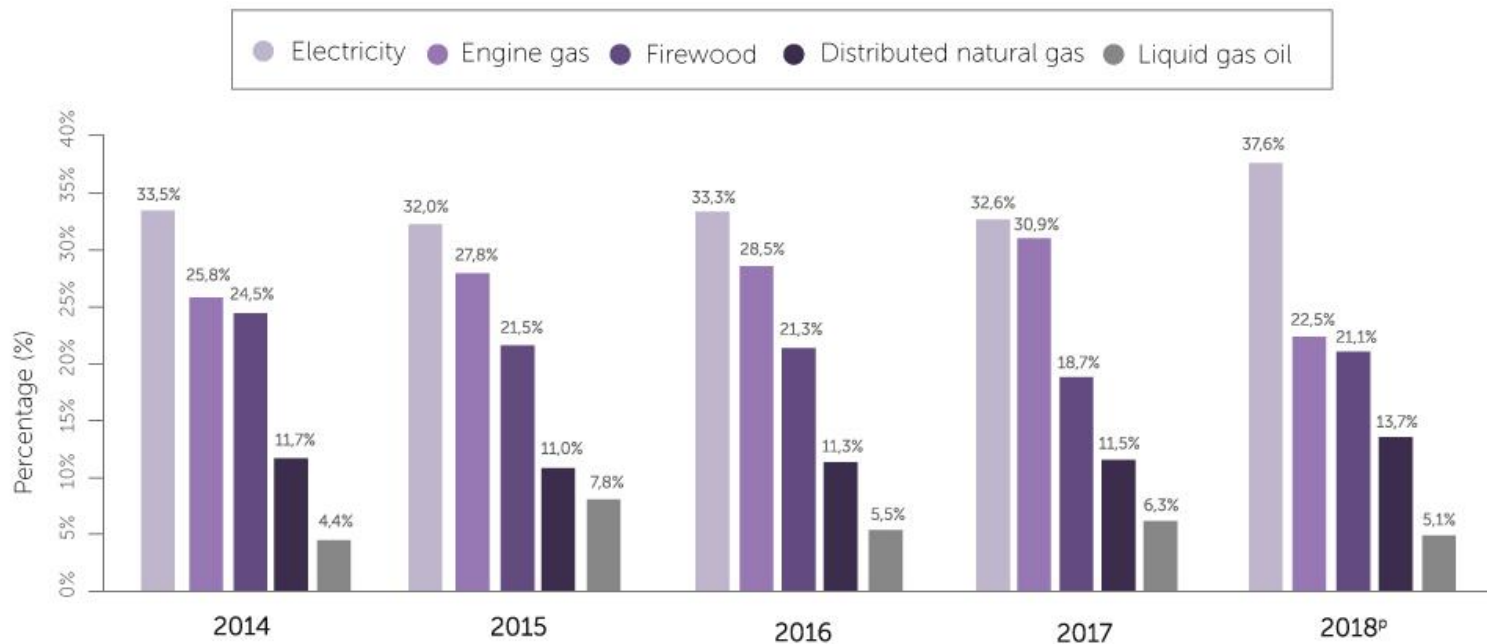
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### **Per capita consumption of forest products**

DANE. Environmental and economic account of flows of forest products

## Energy consumption by households

Total of the nation 2014-2018<sup>p</sup>



p: provisional

Source: DANE - Environmental and economic account of energy flows

## Per capita energy consumption

Total of the nation 2014-2018<sup>p</sup>



p: provisional

Source: DANE - Environmental and economic account of energy flows



# Closure and optimization on the life cycle of material and products



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## Indicadores disponibles:

### **Greenhouse Gas-GHG emissions generated per unit of energy consumed by economic activities**

DANE. Environmental and economic account of material flow - air emissions

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### **Solid waste flow to the environment**

DANE. Environmental and economic account of material flow - solid waste

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### **Solid waste generated per capita**

DANE. Environmental and economic account of material flow - solid waste

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### **Generation of GHG emissions by economic activity**

DANE. Environmental and economic account of material flow - solid waste

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### **Greenhouse Gas Emissions Intensity - GHG, by economic activity**

DANE. Environmental and economic account of material flow - air emissions

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### **Intermediate consumption of residual products by economic activities**

DANE. Environmental and economic account of material flow - solid waste

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### **Rate of recovery of solid waste generated**

DANE. Environmental and economic account of material flow - solid waste

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### **Recycling rate and new use of solid waste generated**

DANE. Environmental and economic account of material flow - solid waste

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### **Renewable energy share (supply perspective)**

DANE. Environmental and economic account of energy flows

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### **Proportion of renewable energies consumed by economic activity (use perspective)**

DANE. Environmental and economic account of energy flows

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## Share of renewable energy

Total of the nation 2014-2018<sup>p</sup>



In 2018<sup>p</sup>, the proportion of renewable inputs was **7.9%**, a lower variation compared to 2017, which was **8.7%**. This result is explained by a lower generation of energy from a water source and a lower supply of cultivated firewood.

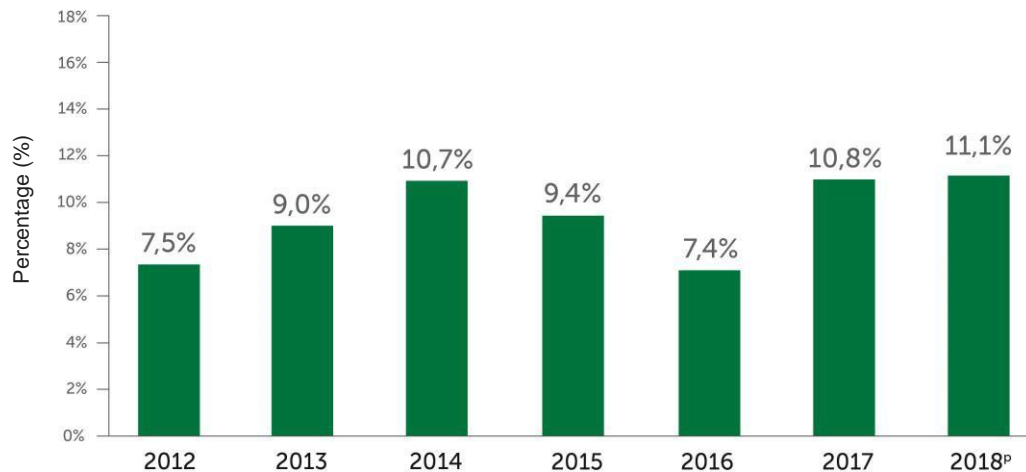
*From the point of view of the supply of natural inputs, it represents the proportion of renewable inputs within the total supply of energy inputs from a fossil and renewable primary source.*

p: provisional

**Source:** DANE - Environmental and economic account of energy flows.

## Recycling rate and new use of solid waste generated

Total of the nation 2012 – 2018<sup>p</sup>



For 2018<sup>p</sup>, the recycling and new use rate amounted to 11.1% of the total solid waste and residual products generated. Compared to 2017, the rate grew by **0.3 percentage points**.

*The recycling rate is the result of the existing ratio between the used waste reincorporated into production processes through recycling or reuse, in relation to the total supply of solid waste.*

p: provisional

Source: DANE - Environmental and economic account of material flow - solid waste



## **Second report on Circular Economy**

DANE is working to strengthen the measurement of the Circular Economy in Colombia, through the design of a Circular Economy satellite account that will incorporate new indicators and material flow diagrams, as additional tools for measuring and mapping circularity in the country.

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