

# Energy data in the National GHG Inventory of Costa Rica

“15<sup>th</sup> Expert Meeting on Data for the IPCC Emission Factor Database”  
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# About Costa Rica



- Area: 51100 km<sup>2</sup>
- Population: 4 890 000 (2016)
- Economy:
  - Services
  - Exports

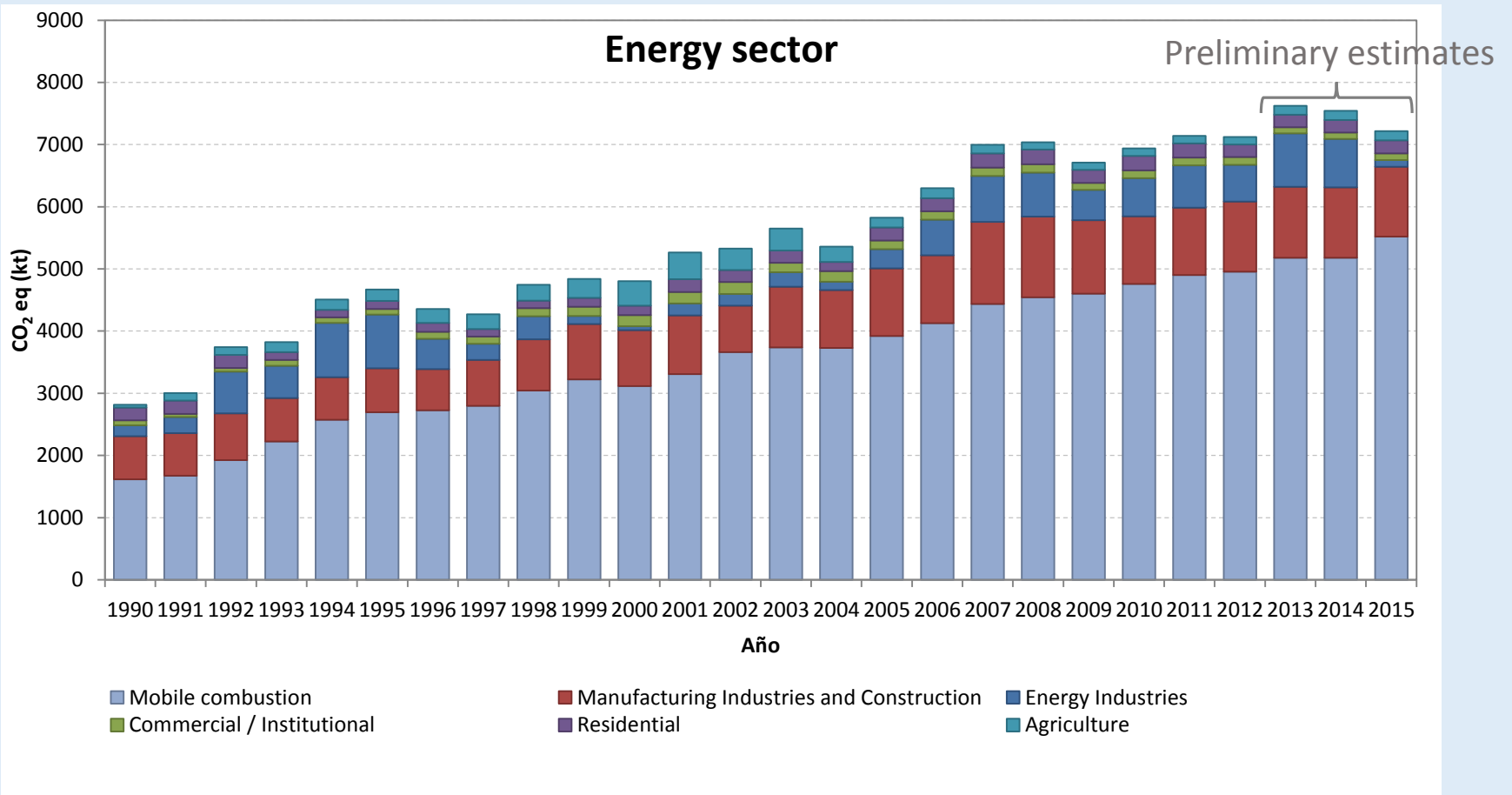
# GHG emissions: total



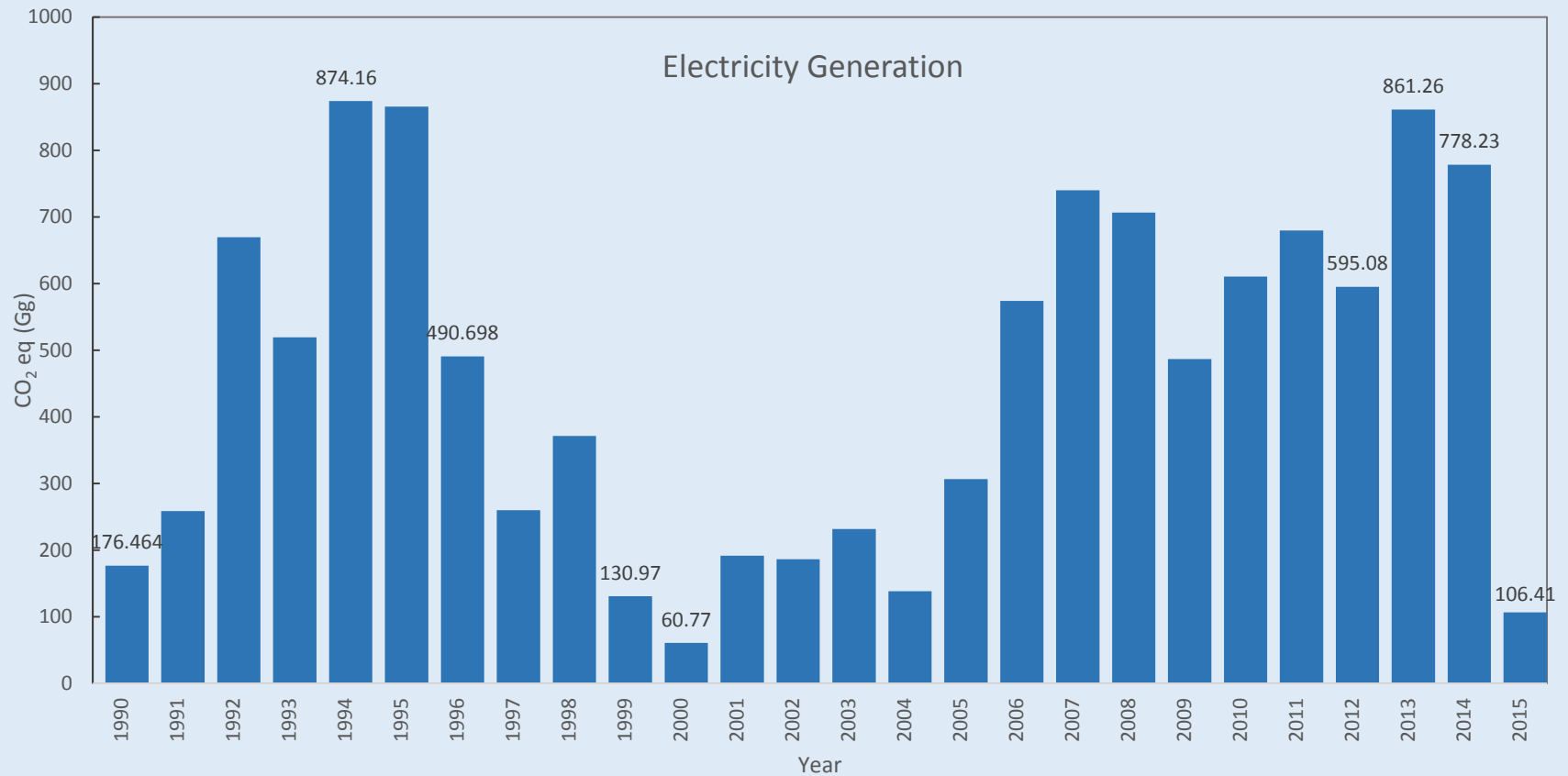
- Net emissions: 11 250.31 kt CO<sub>2</sub> eq

Sector	Emissions (kt CO <sub>2</sub> eq)
Energy	7213.83 → 64%
IPPU	980.7
AFOLU	1119.36
Waste	1864.31

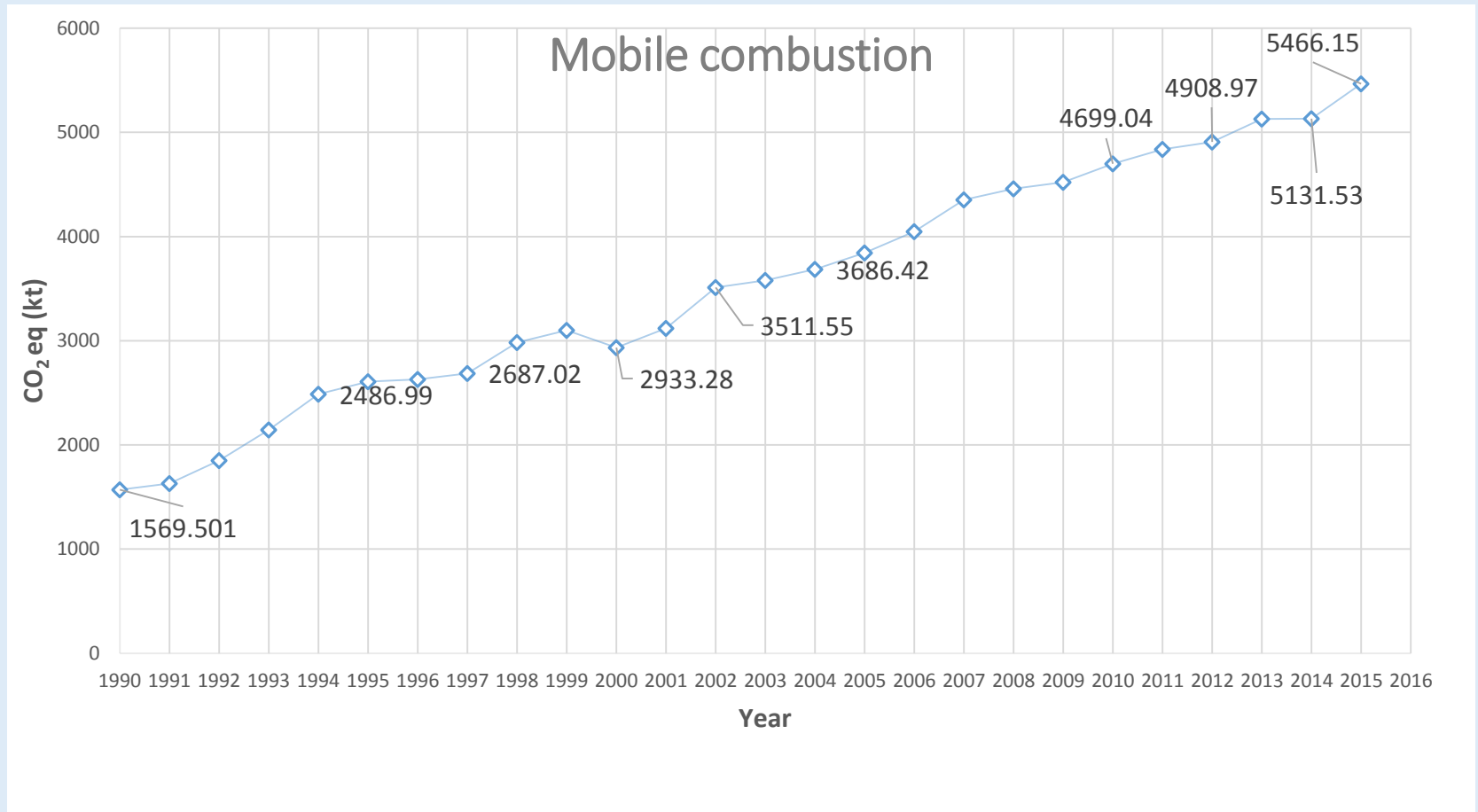
# GHG emissions: Energy



# GHG emissions: Energy



# Energy Emissions



# Methodology used (2012 inventory)

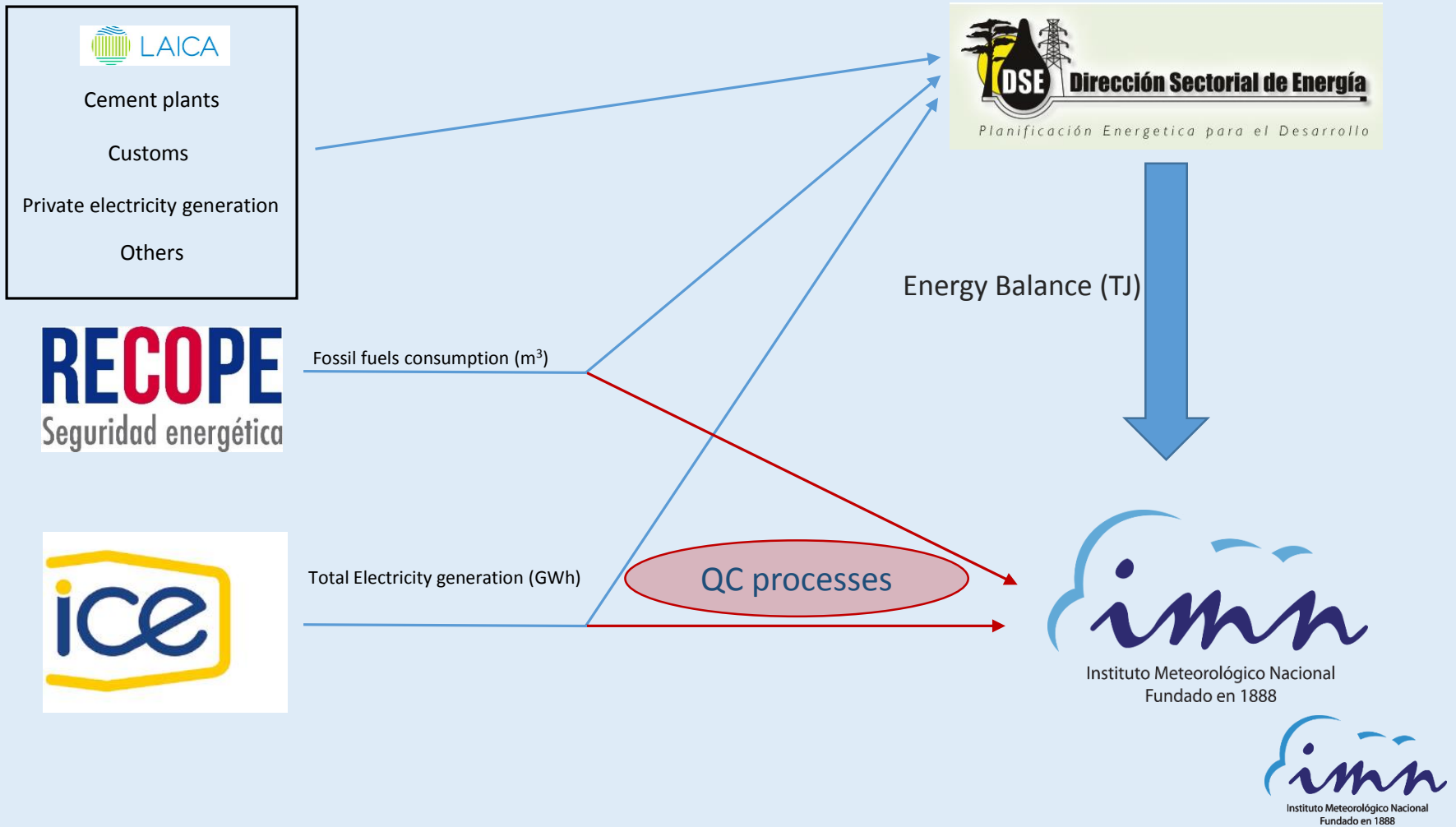
- 2006 IPCC Guidelines

## Stationary and Mobile combustion:

### Tier 1 approach:

- Data on the amount of fuel combusted in the source category.
- A default emission factor

# Activity data collection

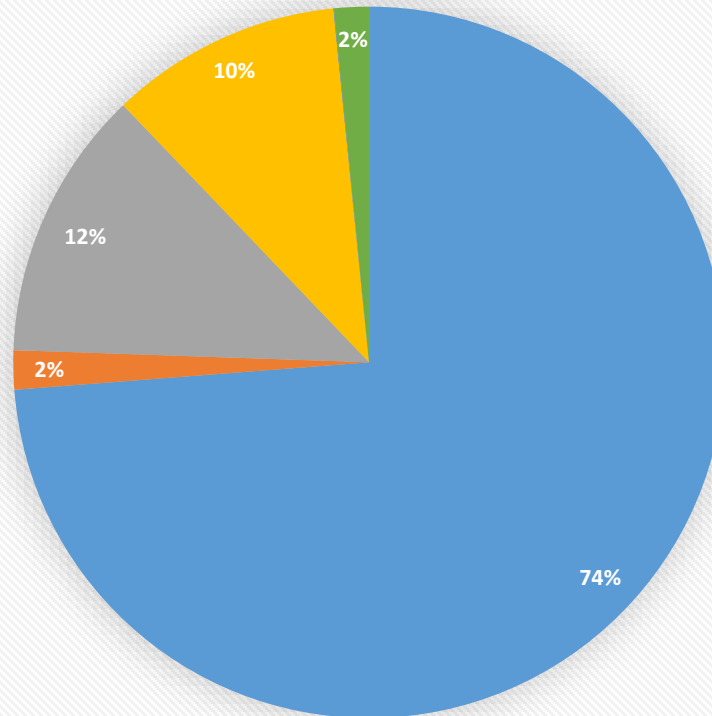






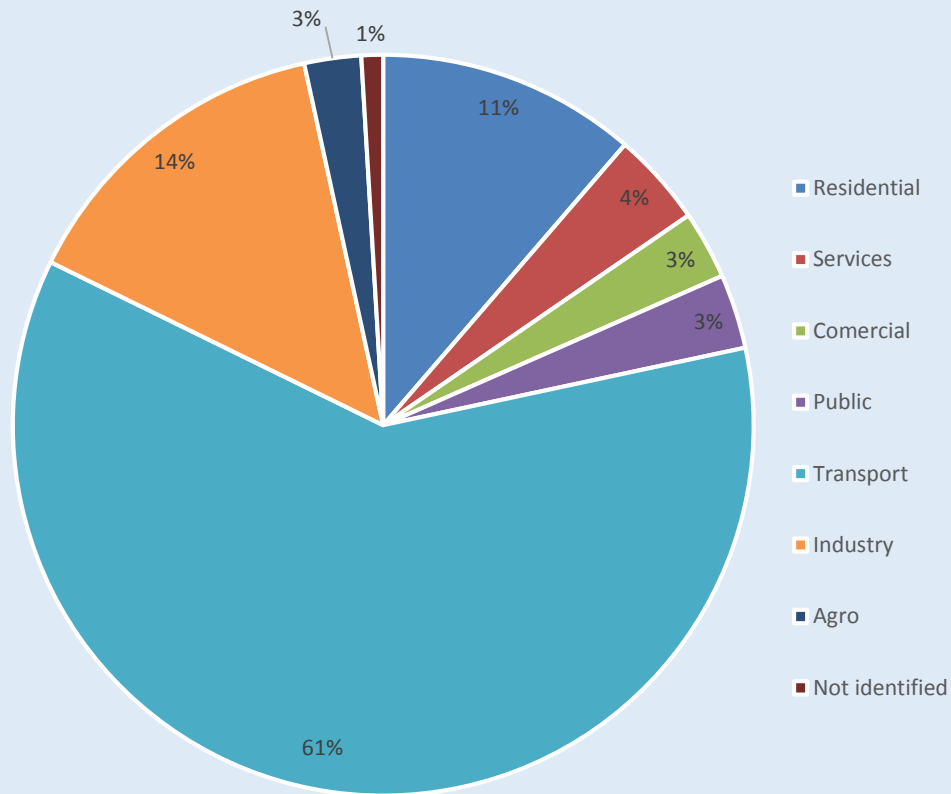
# AD: Energy Balance

2016 Electricity generation: 11900 GWh



■ Hydroelectric ■ Thermoelectric ■ Geothermal ■ Wind ■ Solar ■ Biomass

# AD: Energy Balance



# Biofuels use

- Use of Ethanol: Recope's Pilot Project from 2006 to 2010

EtOH mixed in gasoline 1.3%-4.5%

North Pacific Area

Considered in the NGHG inventory (23 100 t CO<sub>2</sub>)

Recope is planning a new pilot using ~10%

# Biofuels use

- Biodiesel:

## Production:

**3.100.000 L per month** from palm oil, soy, used oil from restaurants and houses.

## Use:

Buses, heavy transport, private cars

2 Biodiesel stations

Limited by legislation: Biodiesel's price has to be regulated by a public authority, and this work is in progress.

# CO<sub>2</sub> EF and properties of fuels

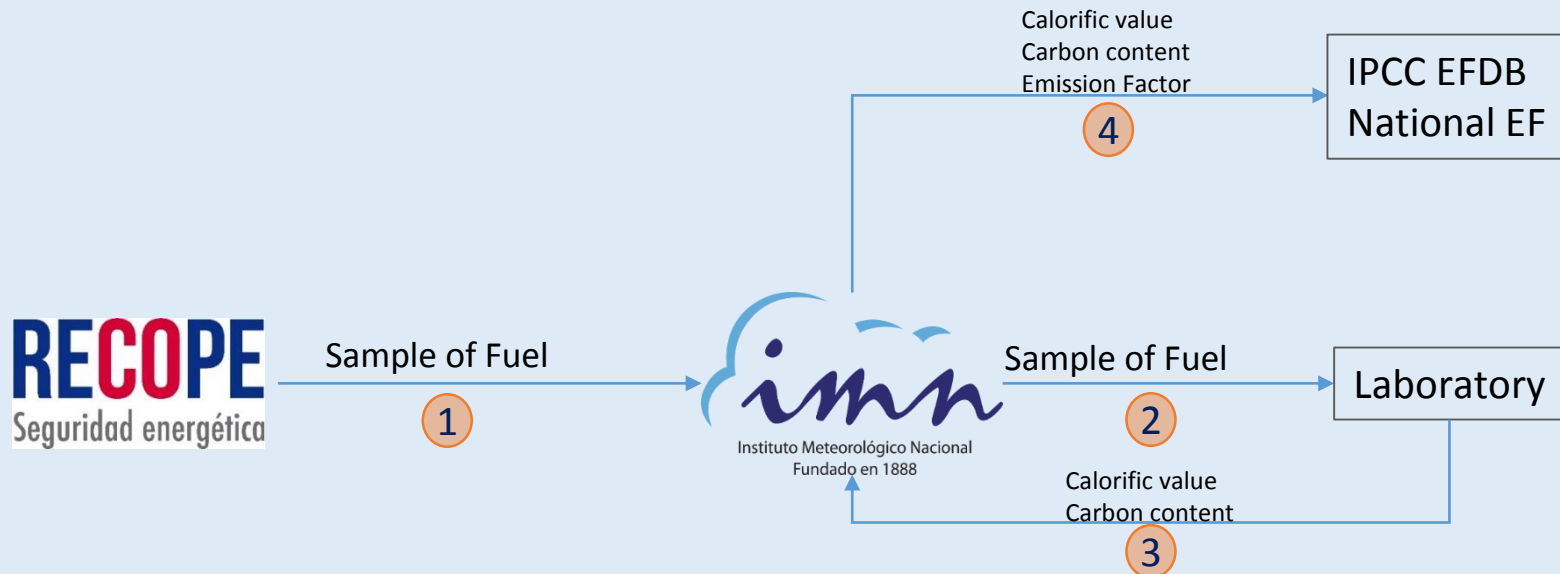
Periodically published online

Fuel	Carbon Content %(m/m)	CV (MJ/kg)	EF (kg CO <sub>2</sub> /TJ)	Default EF (kg CO <sub>2</sub> /TJ)
Diesel	86.50%	45.57	69599.88	<b>6.1%</b> 74100
Gasoline (Super)	86.27%	45.50	69521.61	<b>0.3%</b> 69300
Gasoline Regular	85.38%	45.50	68804.40	<b>0.7%</b> 69300
LPG	82.00%	48.00	62638.89	<b>0.7%</b> 63100

Obtained for a batch on 2015

# Improvement plan

- Short term (2018):



- Long term:

Vehicular fleet updated and average annual distance traveled

Tier 2

# Electricity consumption EF

- Part of the C-neutral program

- Developed by the ICE

- Published by the IMN  
([cglobal.imn.ac.cr](http://cglobal.imn.ac.cr))

<i>Año</i>	<i>Factor de emisión kg CO<sub>2</sub> e/kWh</i>
2016	0,0557
2015	0,0381
2014	0,1170
2013	0,1300
2012	0,0771
2011	0,0824

- Includes: fugitives emissions, CH<sub>4</sub> from water reservoir of Hydro power plants and emissions from FF used in thermoelectric plants.



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