



# Ecopetrol's Net Zero Commitment

**Felipe Bayón**  
President and CEO

April 12th, 2021



**70** years



# ECOPETROL BUSINESS GROUP



PERMIAN

GOM

MÉXICO

OFFSHORE  
COLOMBIA

ECOPETROL

BRAZIL

**~250** PRODUCTION  
FIELDS  
IN 4 COUNTRIES

**9,000** km  
OF PIPELINES

**2** REFINERIES  
**400 kbd\***  
OF CAPACITY

**1** BIODIESEL  
PLANT

**53** ELECTRIC  
SELF-GENERATION CENTERS  
**1,300 MW\*\*** OF CAPACITY

## PRODUCTS

CRUDE OIL



FUELS



PETROCHEMICALS



NATURAL  
GAS



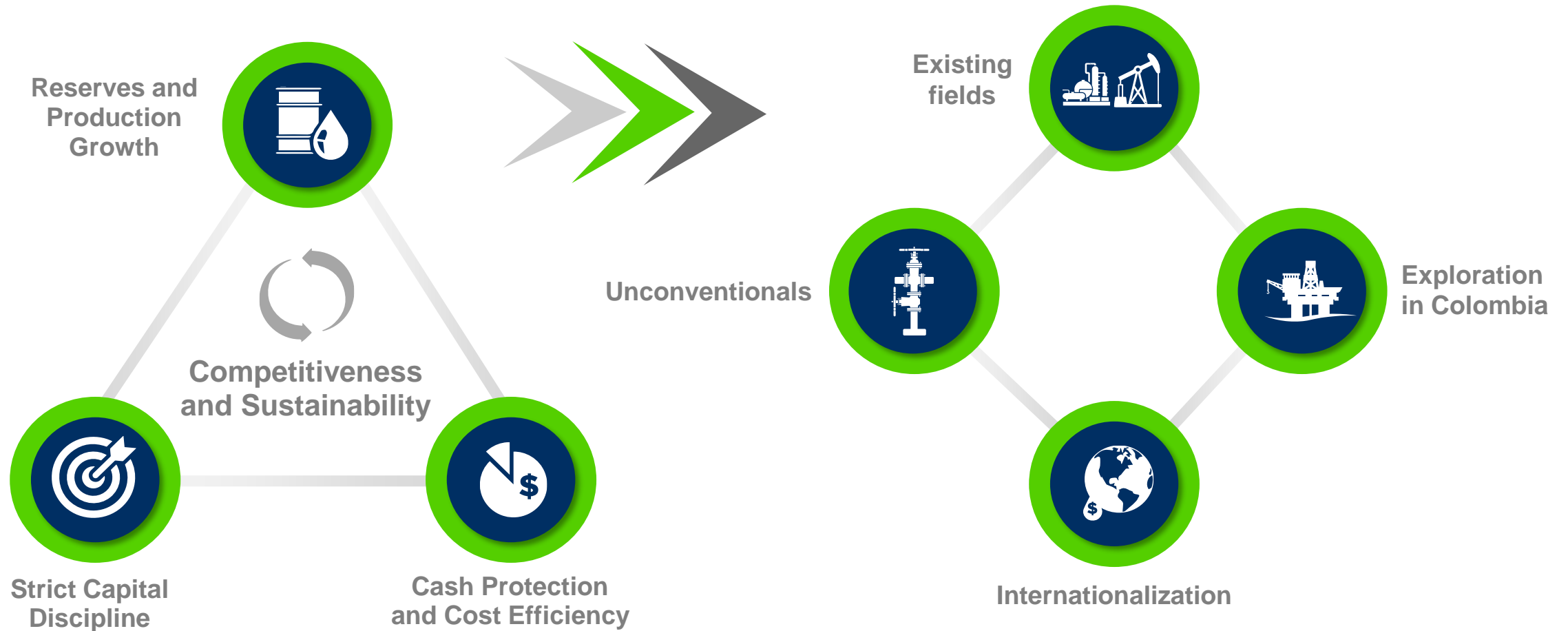
ELECTRIC  
POWER



**14,000**  
COMMITTED  
EMPLOYEES

\* Kbd: thousand barrels per day    \*\* MW: megawatts

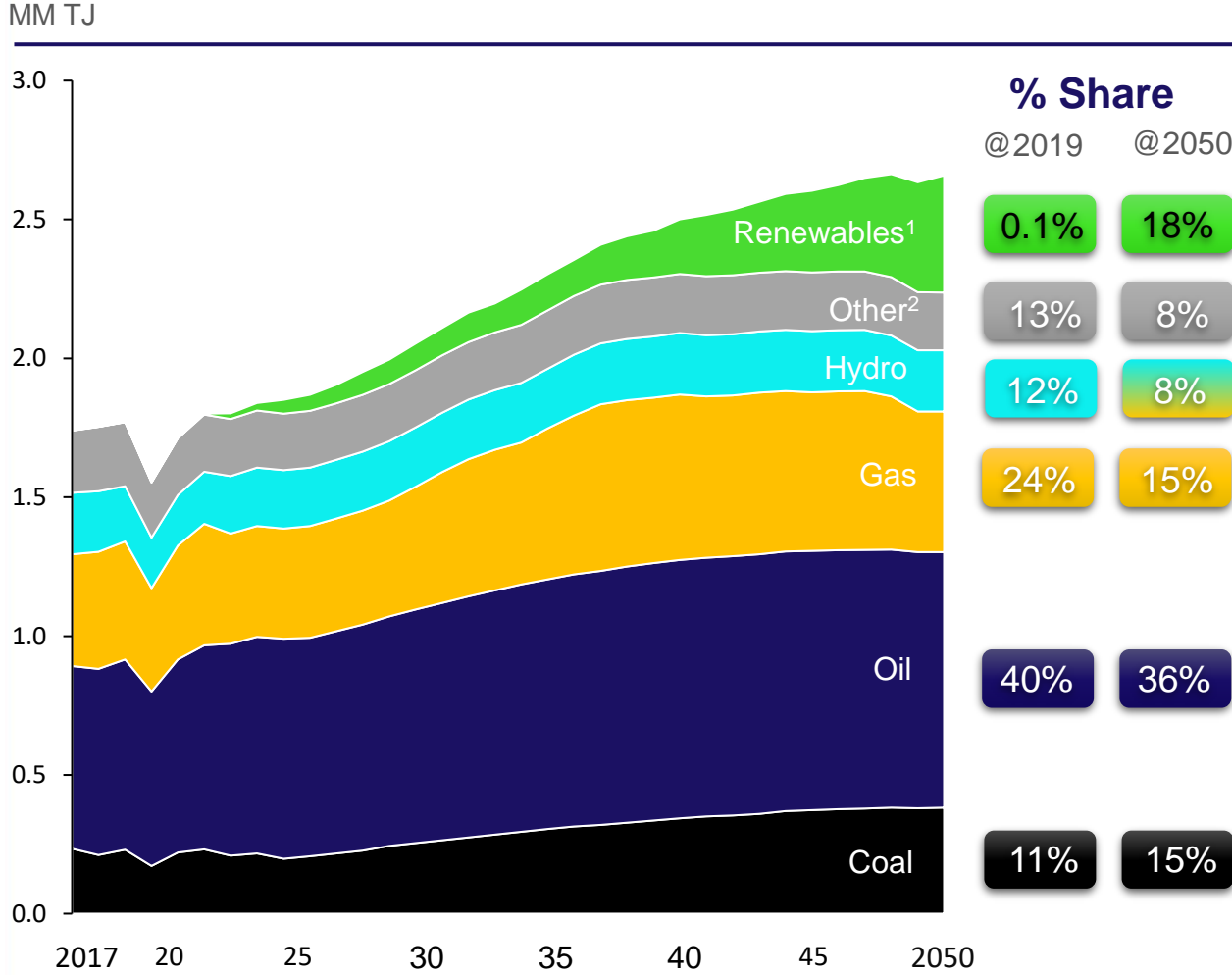
# A long-term strategy that focuses on value creation as an integrated Business Group



# Colombia will increase its decarbonization efforts

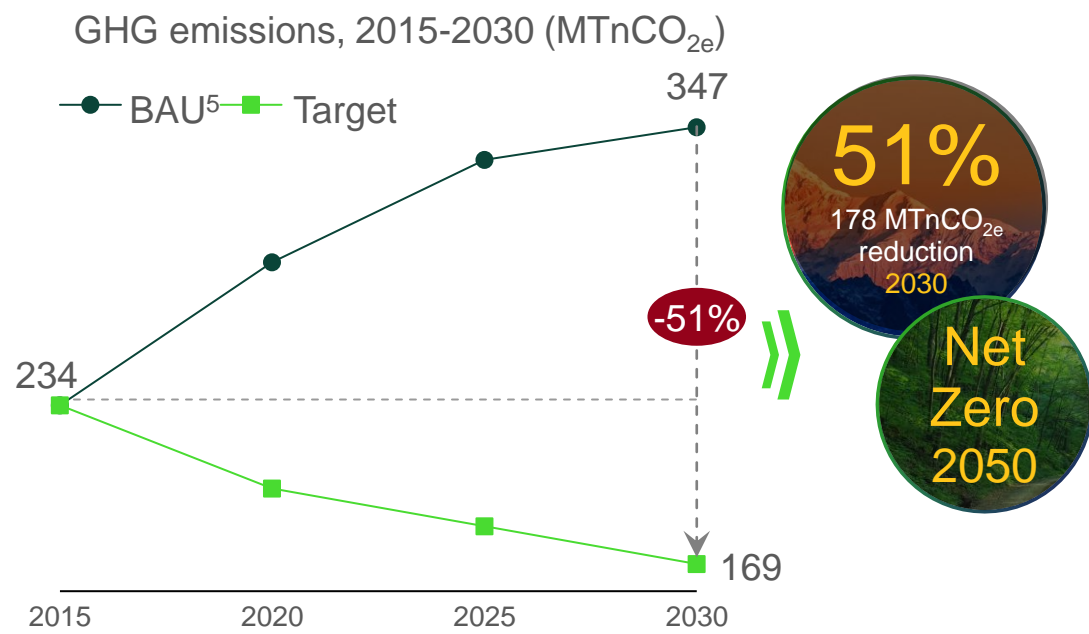


## Colombia's Primary Energy Demand (post-COVID) – Base Case



Source: Ecopetrol, based on McKinsey Energy Insights Global Energy Perspective - October 2020

## Colombia's 51% GHG<sup>4</sup> emissions reduction target by 2030



Most of the efforts will be focused on reducing emissions generated by deforestation and changes in use of soil

Source: Colombia's National Determined Contribution, Nov 2020

1. Includes onshore wind, offshore wind and solar 2. Includes biomass, 3. Conversion factor used is ~ 1 mmTJ =s 0.467MMb/d 4. Greenhouse gases 5. Business as usual





# Ecopetrol's Energy Transition: 4 pillars



**Increasing  
competitiveness  
to avoid  
stranded assets**



**Diversification  
without losing focus on  
oil and gas**



**Accelerating  
decarbonization**



**TESG  
Driven**

Technology  
Environment  
Social  
Governance

**Knowledge & Innovation**

**Human Talent Development**





# Ecopetrol advances in its **Transformation** towards **A SUSTAINABLE FUTURE**



» Non-binding offer to acquire the Colombian State's share in ISA (51,4%)

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» Strategy to consolidate our position in the energy sector in Colombia and Latin America

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GRUPO  
**ecopETROL**





# T

**Technology**

» Positive social impact

# E

**Environmental**

» Beyond corporate responsibility

# S

**Social**

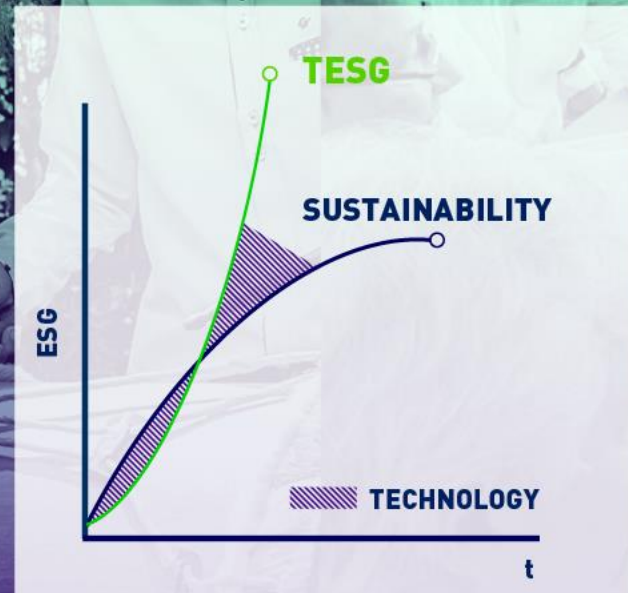
» Innovative solutions

# G

**Governance**

» Acceleration

» Scalability





# ECOPETROL'S INNOVATION ECOSYSTEM



PLUGANDPLAY

C4IR.CO



ATLÁNTICONNECT



## TECHNOLOGIES Applied and under evaluation

### DIGITAL



- » Artificial Intelligence
- » Blockchain
- » Cloud Computing
- » Virtual Reality
- » Internet of Things
- » Robotics

### OPERATIONS



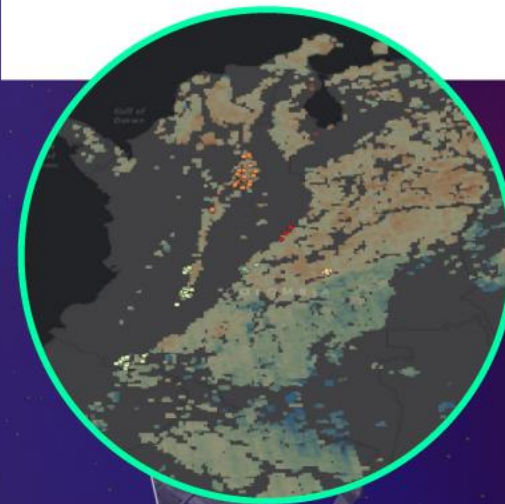
- » Water quality
- » Air quality
- » Energy storage
- » Advanced materials
- » Carbon Capture, Usage and Storage (CCUS)



# Technology and innovation at the heart of Sustainability

## EXAMPLE:

Incorporation of Satellite data on methane for decision making



- » Knowledge management expert
- » Industry best practices
- » Long-term view of energy transition



- » Technology Know How
- » Proven innovation models
- » Interest in accelerating the implementation of ESG solutions through technology



- » O&G expertise, NOC/SOE
- » Understanding of “Critical” material issues
- » TEG commitment

Comprehensive GHG management tool



# OUR COMMITMENT TO BIODIVERSITY

## Zero Operations in Protected Areas



No operations in protected areas (UICN categories I to IV) or World Heritage Sites

## Eco-Reserves Network

**15**

by 2021

**20**

by 2022

**50**

by 2030



## Knowledge & Monitoring

**780,000  
HECTARES**

of biodiversity  
baselines in  
prioritized  
regions

**600  
CAMERA  
TRAPS**

for  
biodiversity  
monitoring



## Trees Planted



**1.8**  
**MILLION**  
since 2018

**6**  
**MILLION**  
by 2022

## Project Wildlife



Maintain  
**15 WILDLIFE**  
species conserved



Wildlife  
Conservation  
Society

## Biodiversity Offsets



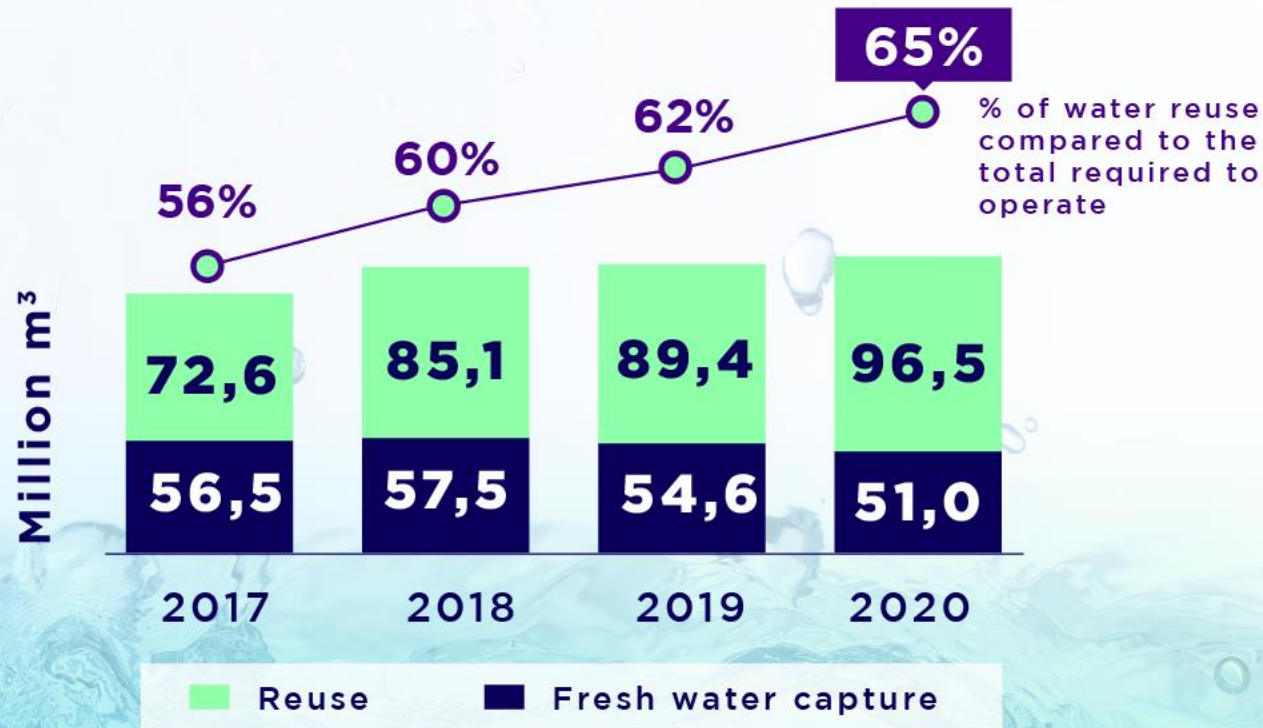
Implement more than  
**120 BIODIVERSITY  
OFFSET PLANS**  
approved by environmental  
authorities





# OUR COMMITMENT AND VISION TOWARDS CIRCULAR WATER MANAGEMENT

## WATER REQUIRED TO OPERATE BY SOURCE



## RESULTS 2020

**B** CDP Score aligned with oil & gas extraction & production score

**A** Ecopetrol Water Policies

**-A** Business Impacts

**WE ARE PART OF THE COLOMBIAN WATER COALITION**



COALICIÓN  
agua para  
Colombia

To seek the water security of  
**15 hydrographic basins**

# Ecopetrol Group's Emissions Inventory

## Scope 1 and 2

Emissions in 2019 – Assets in Colombia<sup>1</sup>

PRODUCTION



**6,7 Mt CO<sub>2</sub>e**  
(49%)

TRANSPORT  
& LOGISTICS



**0,8 Mt CO<sub>2</sub>e**  
(6%)

REFINING



**6,0 Mt CO<sub>2</sub>e**  
(45%)



Scope 1 and 2

**13,5 Mt CO<sub>2</sub>e**

Scope 3 (estimated)

**115 Mt CO<sub>2</sub>e**

1. Includes not fully owned subsidiaries and non-operated assets, whose emissions are subject to review



# DECARBONIZING

## OUR OPERATIONS

### GREENHOUSE GAS EMISSIONS REDUCTION



# ECOPETROL WILL BE A COMPANY WITH **NET-ZERO CARBON EMISSIONS**

**BY 2050**

TARGET BY

**2030**



## **REDUCTION**

25% vs. 2019  
scope 1 and 2

Contributes with 50% of the  
Colombian mines-and-energy  
sector target

TARGET BY

**2050**

## **NET-ZERO EMISSIONS**

scope 1 and 2

## **REDUCTION**

50% vs. 2019  
scope 1, 2 and 3



Oil and Gas company in  
Latin America to make  
this commitment

**TCFD**

TASK FORCE ON  
CLIMATE-RELATED  
FINANCIAL  
RISKS & OPPORTUNITIES

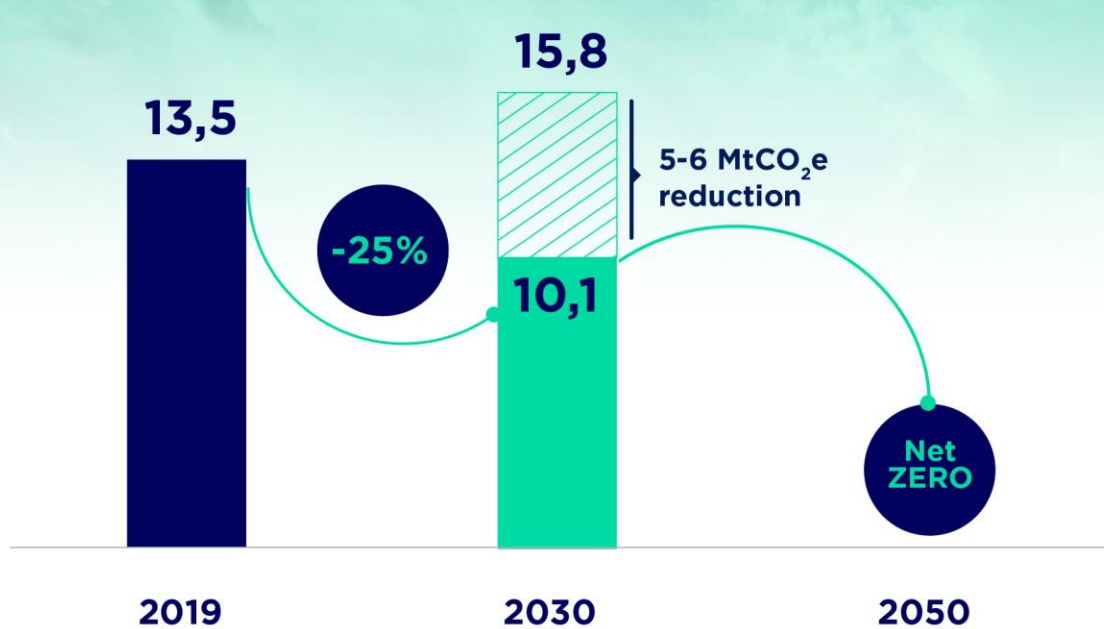
  
**OBJETIVOS  
DE DESARROLLO  
SOSTENIBLE**



# EMISSIONS REDUCTION PATH

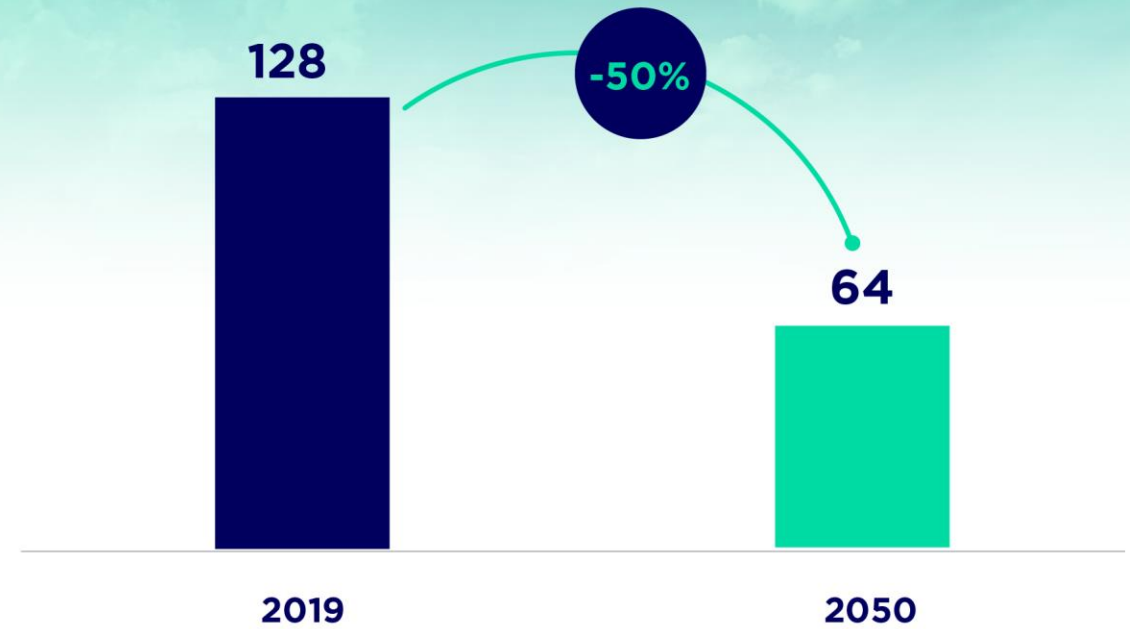
## Scope 1 & 2

MT CO<sub>2</sub>E



## Scope 1, 2 & 3

MT CO<sub>2</sub>E



BASELINE

2019



TYPE OF  
REDUCTION

Absolute



COMPENSATION

At least  
30% from  
NCS\*

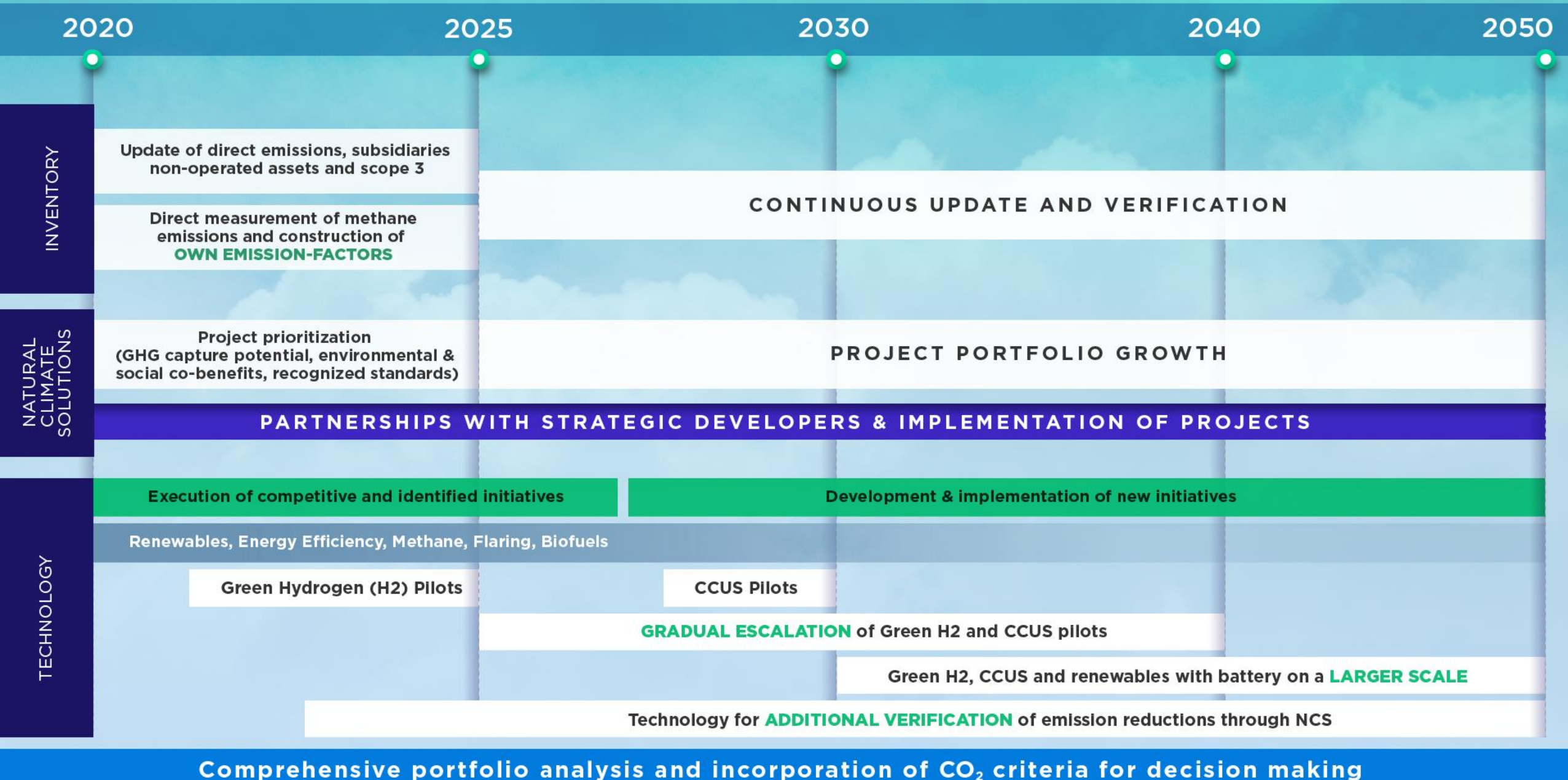
*Natural Climate Solutions*



GEOGRAPHIC  
SCOPE

Colombia

# NET-ZERO EMISSIONS ROADMAP





# RENEWABLES ENABLE EMISSIONS REDUCTIONS

**400MW**

**BY  
2023**

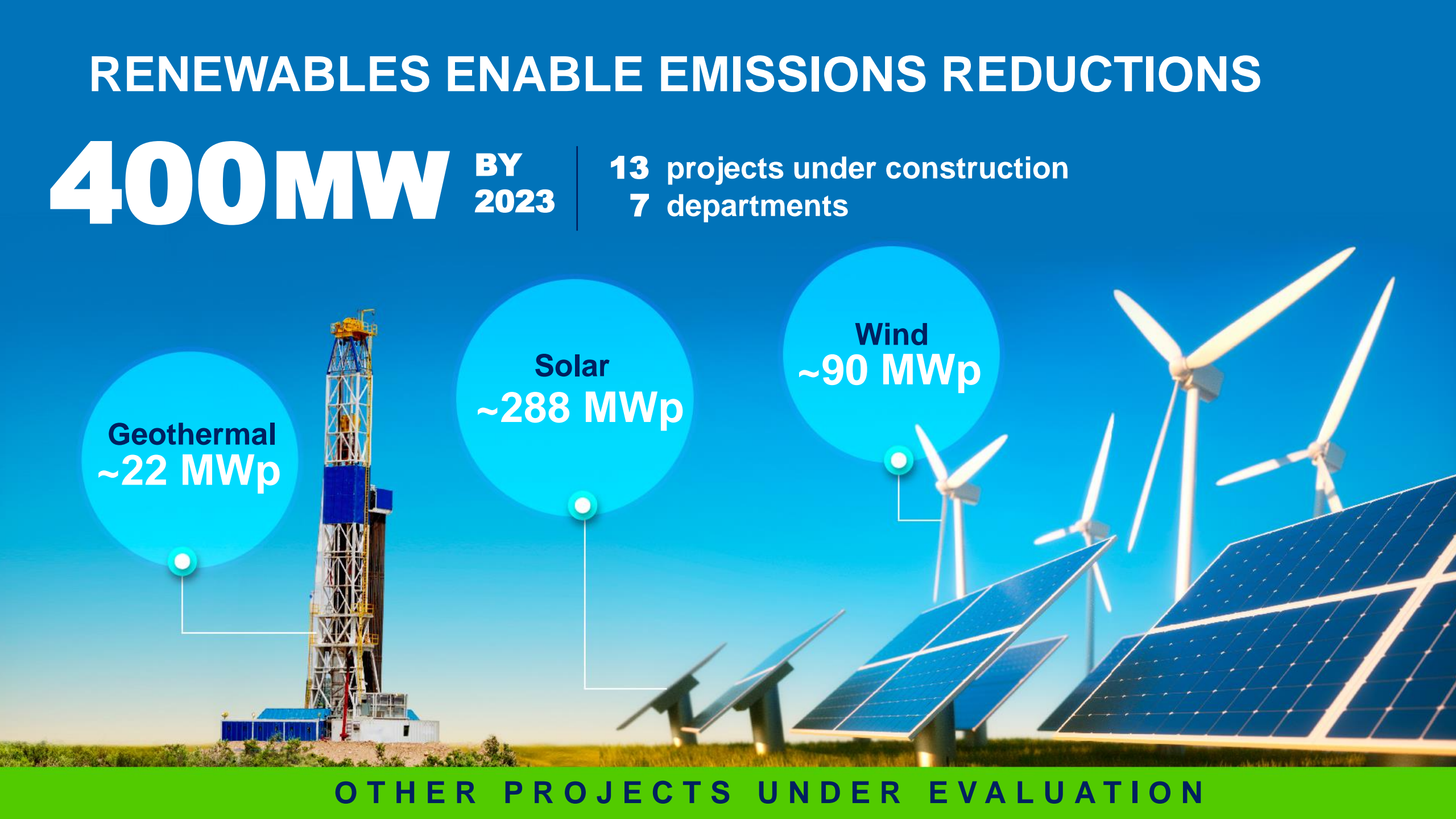
**13** projects under construction  
**7** departments

**Geothermal**  
**~22 MWp**

**Solar**  
**~288 MWp**

**Wind**  
**~90 MWp**

**OTHER PROJECTS UNDER EVALUATION**





# ENERGY EFFICIENCY

Demand reduction of 3% (25MW) by 2022 vs 2017

2018-2022  
**TARGET**

**3%**

2023-2028  
**TARGET**

**6%**

2029-2035  
**TARGET**

**6%+**







**CLIMATE &  
CLEAN AIR  
COALITION**  
TO REDUCE SHORT-LIVED  
CLIMATE POLLUTANTS

# LDAR\* Program



**592 FUGITIVE EMISSIONS CLOSED IN 2020**

**USE OF BOTTOM-UP Y TOP-DOWN TECHNOLOGIES**

**100% OF OPERATED ASSETS MEASURED IN 2024  
& NON OPERATED IN 2026 (LEVELS 4 AND 5)**

**Fugitive emissions reductions aligned  
with Net Zero ambition and Climate &  
Clean Air Coalition (CCAC) targets**

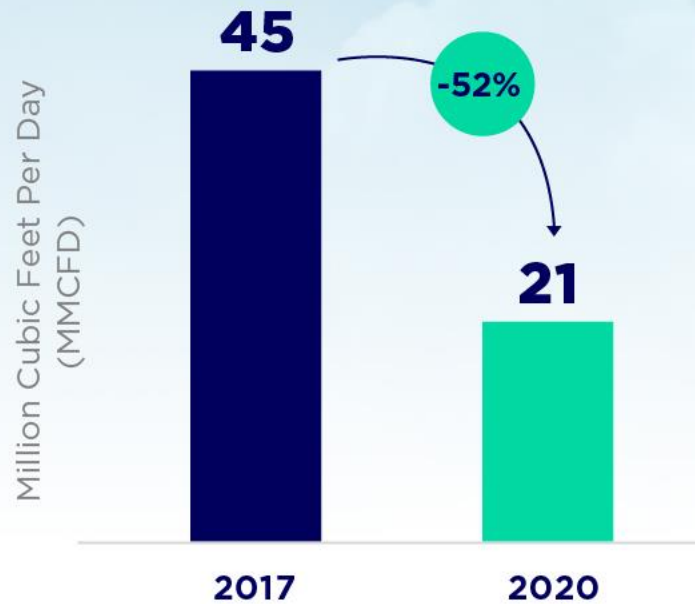
**\* Leak Detection and Repair**



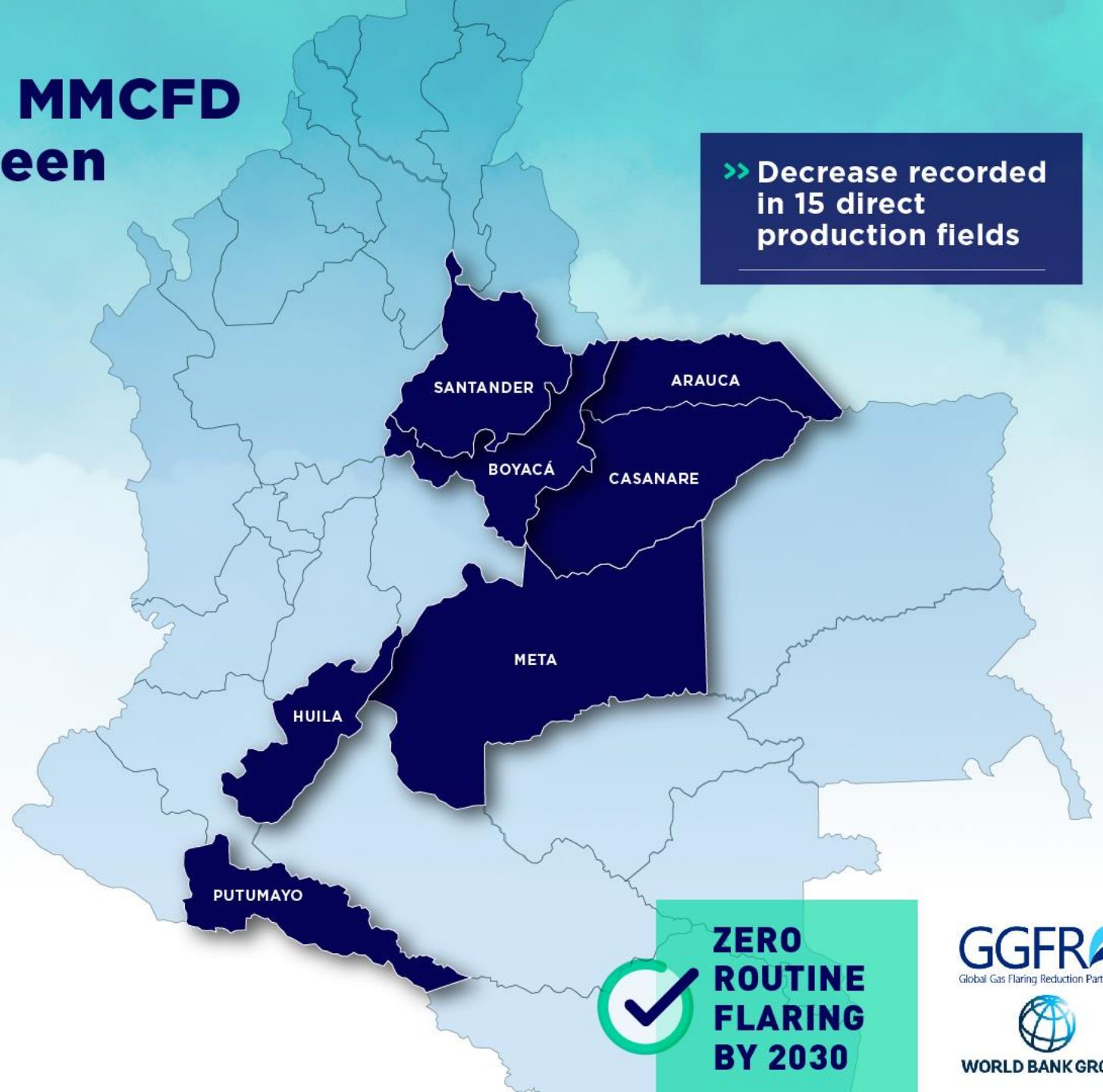
# Ecopetrol reduced ~24 MMCFD of routine flaring between 2017 - 2020

>> Decrease recorded in 15 direct production fields

Routine Flaring of Natural Gas in Operations



~600.000 tons of CO<sub>2</sub>e (tCO<sub>2</sub>e)



**ZERO  
ROUTINE  
FLARING  
BY 2030**



# COLOMBIA HAS LEADING POTENTIAL FOR NATURAL CLIMATE SOLUTIONS

## Ranking most biodiverse countries\*

1. BRAZIL
2. COLOMBIA
3. INDONESIA
4. CHINA
5. MÉXICO
6. PERÚ
7. AUSTRALIA
8. INDIA
9. ECUADOR
10. VENEZUELA

\*Source: Instituto Alexander von Humboldt



## C o l o m b i a

-  **1** Birds and Orchids
-  **2** Plants, amphibians, butterflies and sweet fish
-  **3** Palms and reptiles
-  **4** Mammals



**55% of Colombia's GHG are caused by** deforestation activities and other land-use changes

## Natural Climate Solutions (NCS)

Prioritized projects in alliance with The Nature Conservancy (TNC):

- REDD+ projects
- Forest Restoration
- Reforestation in agroforestry projects

### Based on...

- GHG capture potential
- Cost-effectiveness
- Potential co-benefits
- Recognized standards

**AT LEAST 30% OF OUR GHG EMISSIONS REDUCTION AMBITION WILL COME FROM NCS**

# NATURAL CLIMATE SOLUTIONS HAVE IMPORTANT CO-BENEFITS

## CLIMATE



- » Climate Change Mitigation
- » Climate Change Adaptation

## COMMUNITIES



- » Poverty Reduction
- » Improve livelihoods and quality of life

## NATURE



- » Ecosystem and biodiversity protection
- » Air quality

## ECONOMY



- » Food security
- » Water security
- » Post-COVID economic recovery



# STRONG CORPORATE GOVERNANCE ALIGNED WITH TESG OBJECTIVES

## INDEXES

Measured in



Resumed participation in



In adoption



## STANDARDS



**VOLUNTARY  
PRINCIPLES**  
ON SECURITY + HUMAN RIGHTS

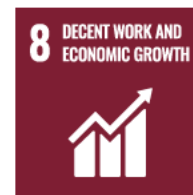
## RECENT INITIATIVES



Stakeholder  
Capitalism  
Metrics  
(SCM)

Partnering  
Against  
Corruption  
Initiative  
(PACI)

## PRIORITIZED SUSTAINABLE DEVELOPMENT GOALS



**Aligned and incorporated  
in our Strategy**

