



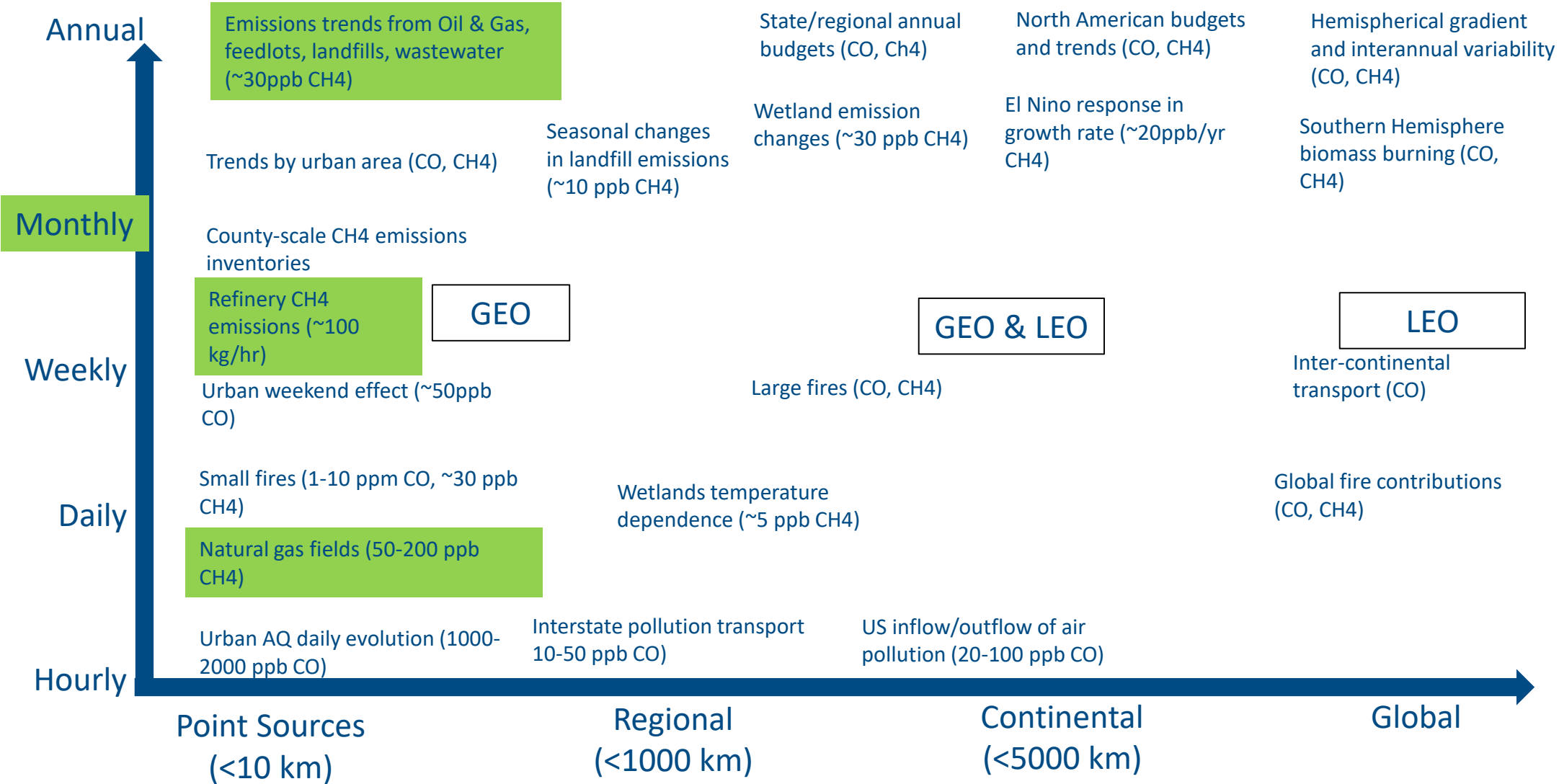
A MAXAR COMPANY

Can You Detect and Monitor Green House Gases from Space ?

See a better world.

Deborah Humphreville

Space and Green House Gas Monitoring (Nadir Pointing)



What are Green House Gases and their impacts?

- Gases that trap heat in the atmosphere are called greenhouse gases (GHG) and cause global warming
- Main green house gases include CO₂, Methane (CH₄), Nitrous Oxide (N₂O), Fluorinated Gases (deplete ozone in atmosphere)
- GHG are measured in terms of Global Warming Potential (GWP) with reference to CO₂ (GWP of 1)
 - CO₂ detection and analytics technologies/policies are well understood
 - Methane has a GWP of 28-36 over 100 years and can hold 40-80 times for heat than CO₂. Methane emissions can last up to a decade.
 - N₂O can remain in atmosphere for 100 years and has a GWP of 265-298
 - Fluorinated carbons are high GWP gases (1000's to 10000's of GWP)
- Sources of GHG:
 - Methane (Energy and fossil fuel activities, Agriculture activities, Waste management, and others)
 - N₂O (Agriculture activities primarily fertilizer use and fossil fuels)
 - Fluorinated gases (Industrial processes, refrigeration, and consumer products)

What are Green House Gases and their impacts?

- Global warming impacts
 - Oceans are absorbing CO₂ and are becoming acidic and warmer resulting in sea level rises and affecting marine life
 - Loss of arctic sea ice which impacts jet stream and associated severe winter storms
 - Fresh water from glacial melting impacts ocean circulation resulting in heat waves and increased temperatures
 - By Paris agreement, if temperatures rose by 2.5%, the global GDP would fall 15% causing serious impacts on global economy
 - World employment and Social Outlook 2018 estimates loss of 1.2 billion jobs due to global warming
 - As per UN report, since 2008, extreme weather has displaced 22.5 million people
 - Severe impact on food supplies if the temperature increases to 84 degree in US
 - ...

What are various activities to reduce GHG?

- Global treaties
 - Paris accord – By 2020, 148 countries pledged to reduce their emissions and additional 48 countries are in the process of ratification
 - Top 5 emitters: China (30%), USA (15%), India (7%), Russia (5%), Japan (4%)
 - Top 5 emitters have committed to reduce their GHG emissions by 2022
 - Several governments sponsoring Satellite based GHG observations (NASA, JAXA, ESA, CSA, S. Korea)
- Commercial activities
 - OGCI (Oil & Gas Climate Initiative), a consortium of Super Majors announced 1 billion \$ to address climate change
 - Several super majors have programs to mitigate their GHG emissions (ExxonMobil, Shell, BP, ConocoPhillips, Total, Chevron, ...)
- NGO's
 - EDF announced MethaneSat to provide global transparency of Methane

What is needed to monitor GHG efficiently from Space?

- For energy customers, a two satellite constellation, can collect the global sites as well large oil basins
- Satellite in sun sync orbit is ideal
- Debate around morning Vs afternoon orbits, primarily driven by cloud conditions
- Orbital height influenced by swath & pixel size but LEO satellites, 500-700 km
- Limited signal of the GHG requires accurate spectrometers as well as satellite operations to stare for longer time periods
- Calibration of sensors over satellite life is critical for accurate analytics

What are other/alternative technologies that can be used?

- GHG analytics requires multi-platform approach to identify and mitigate fugitive emissions
- Terrestrial
 - Stationary as well as mobile, provide accurate locations of leaks
 - Limited geographic coverage as well as extensive resources to drive large oil basins
- Aerial sensors
 - Planes as well as drones collecting GHG data
 - Limited geographic coverage and cannot fly in most countries
- Satellites
 - Global coverage and revisit
 - Less accurate compared to terrestrial and aerial platforms

What are commercial motivations to reduce GHG?

- Energy and mining customers
 - In US, EPA's renewable energy and energy efficiency programs are working closely with energy customers to reduce GHG's and impose potential fines (multi millions of dollars) for rogue emissions (pipeline leaks, factory emissions)
 - Energy customers want to Improve efficiency to identify leaks in the field (75% of time wasted looking for leaks in oil basins)
 - Corporate Social Responsibility and preserve corporate image(several NGO's have identified top 100 companies that primarily include energy customers, as the main GHG emitters)
- Agriculture customers
 - EPA tracks and publishes agriculture missions in US which is 9% of total US GHG emissions
 - Farms with live stocks need permit to meet non-fugitive emissions otherwise face severe penalties

Key Players in the GHG Market today

- Energy Companies with GHG reduction plans and activities
 - super majors and mid sized globally
- Consortiums
 - OGCI (\$1 billion allocated to mitigate GHG's)
 - ConocoPhillips consortium for GHG mitigation
 - Environmental Partnership
- NGO's
 - EDF – Announced MethaneSat with donor funding
- Governments
 - JAXA – GOSAT1,2
 - NASA – TEMPO, OCO-2, GEOCARB, MAIA
 - ESA – Copernicus program, MERLIN (All current and future GHG satellites built by Airbus)
- Startups
 - GHGSat (Have launched GHGsats in 2016, and GHGsats 2 is scheduled for launch in the next few weeks)
 - ScepterAir
 - Bluefield

**This market scenario is
analogous to EO market
in mid 1990's
– Landsat Vs
DigitalGlobe's QuickBird**

**Science Missions vs
Operational
Missions**

What Customers are asking for :

- Energy and mining customers
- Fugitive GHG emissions from uncapped pipelines, pipeline leaks, leaks from fracking (TBD ppb over clutter of 2000 ppb)
 - Super emitters follow the 20/80 rule (20% of emitters produce 80% of emissions)
 - Unreported factory emissions (>100kg/hr)
 - Monthly or more frequent revisit
 - Monitor large oil basins and factories, globally
- Agriculture customers
 - GHG missions that meet the permits from regulatory agencies
 - In early discussions

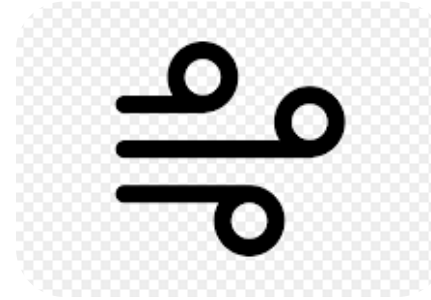
GHG Analytics Community



Oil & Gas



Mining



Cities/AQMD



Agriculture



Governments
(Civil & Defense)



Cosmetics

Customer needs

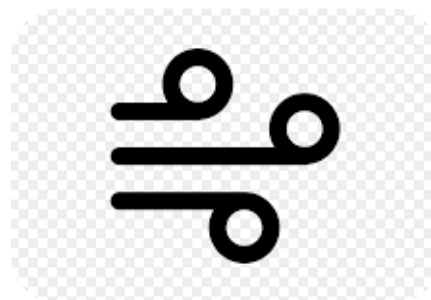


Fugitive emissions from Fracking and Pipeline Leaks

(super emitters cause 50% of contamination; 70% ground resources wasted trying to identify leaks)



Methane leaks from coal mines



Air quality management districts managing pollution levels



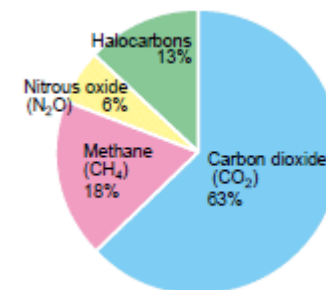
Manure operations and feedlots, rice crop emissions



Methane leaks from Land fills, Wetlands, Transportation, Military Applications

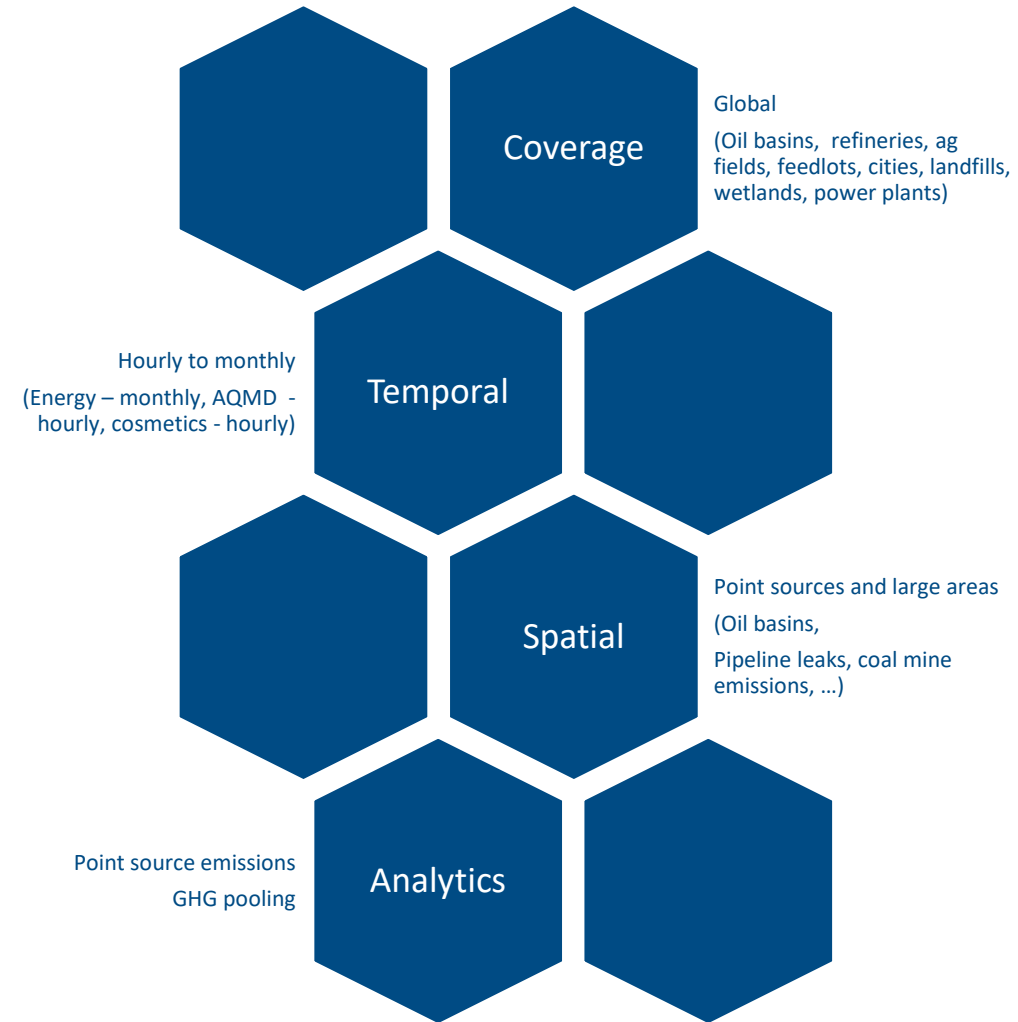


Recommend cosmetics for consumers based on air quality



GHG of interest to customers

Customer needs



How do we get the data ?

Access Options

- Direct Access
- Subscription

Satellites & Operations

- Sensor Selection
- Satellite Design
- Satellite Launch/Rideshare
- Satellite/Ground Systems Operations
- Program Management Office
- Prime Contractor

Analytics

Platform

Where we
store,
integrate
,analyse,
And access
the results

Analytics

Research done at
Harvard/SOA, JPL, CU,
ESA
Maturity of algorithms
needs evaluation
Ancillary data
requirements for
atmospheric inversion

Partnerships

EPA
IEA
RMI
OGCI

Need to better understand analytical techniques for GHG observations

Closing Thoughts

- Yes we can identify GHG from space
- Quantifying what we can do from space is work in progress
- Key factors
 - Spatial resolution
 - Size of area to monitor
 - How often you want to monitor
 - This is a emerging technology that will evolve over time Analytics will get sophisticated over time
 - The new space economy enable flexible and scalable

The new space economy is leveraging technology such as

- small rockets,
- frequency of launches
 - Additive manufacturing
 - 3D printing
- Commercial off the shelf technologies
- Advances in satellite communications

Saudi Aramco Confirms its Leadership Position and Reinforces its Commitment to Reduce Climate Change-causing Greenhouse Gas Emissions at Annual Oil and Gas Climate Initiative (OGCI) Meeting

NEW YORK, NY, USA, September 24, 2018



- Saudi Aramco Confirms its Leadership Position and Reinforces its Commitment to OGC's plan to reduce its members' collective average methane intensity from upstream operations to below 0.25

Greenhouse Gas Management

portfolio operations technology corporate responsibility investors

greenhouse gas management

we're taking significant steps to manage greenhouse gases

flaring reduction | methane management | carbon capture and storage (CCS)

We are committed to managing our greenhouse gas (GHG) emissions by improving energy efficiency, reducing flaring and venting and fixing methane leaks when they occur. We are also investing in two of the world's largest carbon dioxide injection projects.

We are addressing the GHG emissions in our operations and integrating GHG emissions management into the execution of our business activities. Further, we maintain and report inventories of our emissions, undertake projects to manage operating emissions and apply innovative technologies to improve the energy efficiency of our operations. We also assess the GHG emissions of our capital projects. When developing and approving major capital projects, we estimate a project's incremental emissions profile, assess the potential financial impact of GHG regulations and examine the emissions reduction options.

Across our operations, the primary sources of our GHG emissions are combustion of fuels and, in some locations, flaring and venting of the natural gas (methane) that is extracted along with crude oil. In 2017, emissions

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What are you looking for?

About Us | Our Activities | Society and Environment | Products and Services

Home > Society and Environment > Environment > Climate Change

Society and Environment

Society

- Social Responsibility Policy
- Community Relations
- Social Investment
- Performance in Culture
- Incentive for Sports
- Support For Principles and Initiatives

Environment

- Safety, Environment, and Health Policies
- Climate Changes
- Water Resources
- Biodiversity
- Operating Safety

Integrated Report

Public Selections

Climate Change

Tackling climate change globally is a crucial issue for humanity. We understand that energy systems are challenged by the issue, and we are committed to contribute to the Paris Agreement, a document adopted at the Climate Conference (2015) that aims to limit global temperature increase, while providing society with the so necessary access to and inclusion in power.

This vision is foreseen in our strategic planning, which guides our preparation for the changes that will occur in the future of the energy industry, especially in relation to the reduction of carbon dioxide (CO2) emissions. In the coming years we will adapt to the new requirements with investments in new and more efficient ways of generating power.

“ We are preparing for a future based on a low carbon economy ”

- Reduce the carbon emissions of our production process
- Invest in and promote new technologies to reduce the impact on climate change
- Develop high value businesses in renewable energy

In this direction, for more than 15 years we have maintained teams to manage emissions and climate change, attaining significant results in terms of emissions avoided. We pioneered publishing our emission inventories in 2002, and we are the founders of the Brazilian GHG Protocol program, considered the method companies and governments worldwide use most to prepare greenhouse gas inventories (GHG). We have also implemented processes and have ongoing projects in place to ensure that climate change is systematically considered in short-, medium-, and long-term decision-making.

9/19/2014

Learn about Vale's undertakings to reduce greenhouse gas emissions in its operations



Our company is aware of the challenges that the planet is facing regarding climate change, and is working to reduce greenhouse gas (GHG) emissions at its operations by using cutting-edge technology and optimizing its processes. Vale has taken on the challenge to reduce its GHG emissions projected for 2020 by 5%, a project known as the Carbon Program.

The methodology of the Carbon Program is similar to that used in Brazil's sectorial plans, which are aligned with the country's National Climate Change Policy and which established the country's voluntary commitment to reduce the emission of GHGs into the atmosphere.

Are you aware of the activities being carried out at your operation that contribute to the Carbon Program and make a difference to our daily lives? See below some of the actions to improve our operations and contribute to the reduction of emissions.



Initiative on the railways

Our Locomot system is making the operation of the company's railways more efficient, enabling a better distribution of trains and taking advantage of the conditions of the railway. Only trains with up to 252 wagons on the Vitória-Minas Railway and 334 wagons on the Carajás Railway can currently be operated using this technology. This is saving fuel consumption by 1.5%, depending on the type of train and the railway on which it is

Environment Stewardship | PETROBRAS

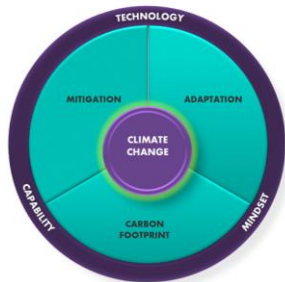
ABOUT US | OUR BRAND | MEDIA | JOIN US

OUR BUSINESS | SUSTAINABILITY | INNOVATION

by rigorous risk management drive us closer towards adapting to a new low carbon energy landscape.

Initiatives to lower our carbon footprint are ongoing wherever we operate, in realising our Carbon Commitments. We invest in low carbon solutions, exploring renewable energy, factoring carbon price into decision making, adapting to climate change and supporting innovation in the transport sector.

Closer to home, we are collaborating with relevant government agencies to shape Malaysia's energy future and transition towards a low carbon economy.



PETRONAS Climate Change Framework

PETRONAS Climate Change Position Statement

We duly recognise our corporate responsibility as a player in the global energy sector to balance the issue of climate change with the challenge to sustainably produce affordable and reliable energy.

Energy Companies

Air emissions

Climate protection

At Bayer, air emissions are caused mainly by the generation and consumption of electricity, steam and process heat. As part of our Bayer Climate Program we have been able to continuously improve our energy efficiency, primarily by focusing on production and process innovations and introducing energy management systems. Despite significantly expanding production, (Bayer including Covestro's energy-intensive production facilities), we reduced our absolute greenhouse gas emissions significantly between 1990 and 2015, namely by around 30%. We have documented our successes in the CDP reports and in 2017 were again awarded leadership status, thus reaffirming the top rating of the previous years.

As a pure life science company too, we want to continue making positive contributions to protecting the climate and managing the effects of climate change on several levels. This includes reducing our production-related emissions with targets relating to improving energy efficiency and lowering specific greenhouse gas (GHG) emissions. In the future, we plan to focus more on reducing emissions in nonproduction areas. These include our vehicle fleet (Sustainable Fleet initiative), investigating the use of electric vehicles (electric mobility programs), optimizing logistics and further developing our information and communication technologies in terms of environmental aspects (Green IT). In addition, we are investigating further potential ways to lower greenhouse gas emissions along the value chain, such as the question of whether state-of-the-art cultivation methods and innovative solutions for precision agriculture contribute to a lower CO₂ footprint in agriculture.



Online Annex: A 1.4.3.3-1

✓ limited assurance

We are also working further to reduce our CO₂ emissions in connection with our global fleet of over 25,000 vehicles. For the just over 4,200 vehicles newly registered worldwide in 2017, these rose to 157 g/km (2016: 145

s website. This enables us to improve your future experience on our website.
how you can manage or withdraw your consent at any time can be found in our

OK



Agriculture Companies

April 26, 2018

SCEPTERAIR

MEDIA ADVISORY:

SCEPTER TO BE FEATURED AT SILICON VALLEY AG TECH CONFERENCE

San Francisco, CA – April 24, 2018.

Scepter Inc. will present its atmospheric monitoring innovation at the 5th Annual Silicon Valley AgTech Conference taking place on May 3rd, 2018 at the Computer History Museum in Mountain View, California. This one day event gathers over 700 attendees, keynote speakers, panelists and industry leaders to share the latest AgTech innovations. 2018 conference topics include integrating new innovations into the agricultural value chain, improving crop yields, reducing crop damage and loss, converting AgTech waste to value and air pollution monitoring.

More...

April 2, 2018

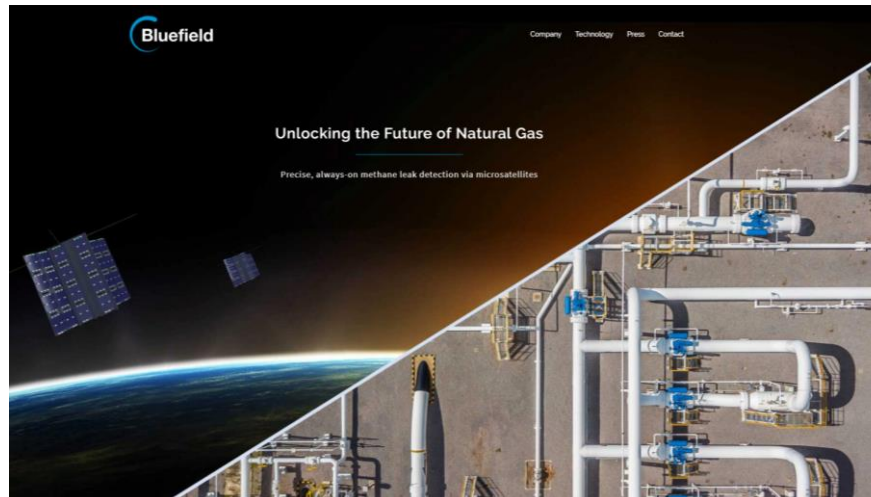
SPACEFLIGHT NEWS



HOME LAUNCH SCHEDULE LAUNCHED NEWS ARCHIVES

THE PREMIER SOURCE OF SPACE EXPLORATION AND SATELLITE TECHNOLOGY

SCEPTER UNVEILS PLANS TO STUDY AIR POLLUTION



Imagery and Sensing

GHGSat Raises \$10M in Financing led by OGCI Climate Investments

GHGSat, a company providing global emissions monitoring services, raised \$10 million in Series A2 financing led by OGCI Climate Investments. Building on GHGSat's work in detecting and...

Greenhouse Gas Emissions Factsheet: Southern Africa

NOVEMBER 2015



USAID

Greenhouse Gas Emissions in Southern Africa

Country	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990
Angola	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
Botswana	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
Lesotho	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
Madagascar	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
Malawi	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
Mozambique	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
Namibia	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
Seychelles	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
South Africa	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
Swaziland	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
Zambia	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027
Zimbabwe	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027	1,027

This factsheet breaks down greenhouse gas (GHG) emissions in Southern Africa in 2011 by country, sector, changes in emissions and climate change commitments and policies. Countries covered in this factsheet include: Angola, Botswana, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Zambia and Zimbabwe.

Southern Africa emitted 1,027 million metric tons (MtCO₂e) in 2011, with South Africa, Angola and Zambia having the highest total of greenhouse gas emissions. The region's emissions represent nearly 2.2 percent of global emissions. Since 1990, total emissions have increased in eight countries, and have decreased in Swaziland, Madagascar, Malawi and Zimbabwe.

Greenhouse gas emissions from the Southern Africa Regional Mission countries are primarily from the energy (544 MtCO₂e), land-use change and forestry (255 MtCO₂e) and agriculture (166 MtCO₂e) sectors. Total greenhouse gas emissions of the countries in the Southern Africa region increased 30 percent from 1990 to 2011.

Outlined in the factsheet are countries Intended Nationally Determined Contributions (INDC), summarized by commitments (conditional and unconditional), as well as sectors targeted for mitigation and enhanced greenhouse gas removal.

This **User Guide** explains some of the terminology in this GHG Factsheet.

[Find other country and regional climate risk management resources here.](#)

China aims to drastically cut greenhouse gas emissions through trading scheme

Heavily polluting power plants across China will now have to choose between paying for their emissions or cleaning up their act



▲ A man wearing a mask for protection against pollution walks along a street in Beijing. Photograph: Andy Wong/AP

The world's biggest emitter of greenhouse gases, **China**, has launched the world's biggest ever mechanism to reduce carbon, in the form of an emissions trading system.

op governmental bodies on Tuesday gave their approval to plans for

India GHG Program

The India GHG Program led by WRI India, Confederation of India Industry (CII) and The Energy and Resources Institute (TERI) is an industry-led voluntary framework to measure and manage greenhouse gas emissions. The programme builds comprehensive measurement and management strategies to reduce emissions and drive more profitable, competitive and sustainable businesses and organisations in India. The programme is supported by the Shakti...

[Read More](#)



Standards & Guidance

The GHG protocol followed a broad, inclusive and multi-stakeholder process to develop four separate but linked standards and guidance



Calculation Tools

Our tools enable companies to develop comprehensive and reliable inventories and reflect best practice methods that have been extensively tested by industry experts.




Resources

Building capacity to meeting demands for greatly enhanced accounting and reporting of GHG emissions thereby addressing risks and challenges in developing sustainable businesses

Government Programs

HG CCI website | CO2 will x +


-cci.org



climate change initiative

ESA | CCI | aerosol | cloud | cmug | fire | ghg | glaciers | land cover | ocean col. | ozone | sea ice | sea level | soil moi. | sst | ice

ghg



GHG-CCI

Note that the GHG-CCI project finished in mid 2018. Updated versions of the GOSAT and IASI Level 2 and SCIAMACHY and GOSAT merged Level 2 (EMMA) and Level 3 (Obs4MIPs) CO2 and CH4 products are now generated in the framework of the Copernicus Climate Change Service (C3S). The new data products are available via the C3S Climate Data Store (CDS).

Press releases (latest news: 5 Jan 2015): Click here to read & see more !


Press releases (5 Jan 2015): Satellite-inferred European carbon sink larger than expected (Reuter et al., Atmos. Chem. Phys.): ESA, Univ. Bremen.

Press releases (29 Sept 2014): Decreasing emissions of NO_x relative to CO₂ in East Asia inferred from satellite observations, (Reuter et al., Nature Geoscience): ESA, DLR, Univ. Bremen.

Interesting links & more (click here to see more)

Video of GHG-CCI Science Leader Michael Buchwitz explaining what this project is about. Here videos for other CCI projects.

Team photo



Hosted by IUP
DOI 10.1016/j.rse.2015.04.001

REUTERS World Business Markets Politics TV

Disturbed in Myanmar Energy & Environment Brexit North Korea Charged: The Future of Autos Future of Money

ENVIRONMENT JUNE 23, 2016 / 7:34 PM / 3 YEARS AGO

South Korea to cut 2030 greenhouse gas emissions by 37 percent from BAU levels

Meeyoung Cho 3 MIN READ

SEOUL (Reuters) - South Korea has finalised its 2030 target of reducing greenhouse gas emissions by 37 percent from business-as-usual (BAU) levels, higher than its earlier plan for a 15-30 percent cut.

The country is among the world's top 10 carbon emitters, so any steps it takes to curb emissions are key to global efforts to combat greenhouse gases in the environment.

SPONSORED

The country's emissions are projected to reach 850.6 million tonnes of carbon dioxide equivalent by 2030 based on BAU levels, a joint statement from ministries such as environment, trade and energy, and finance said on Tuesday.

Earlier this month, Seoul outlined four scenarios for the country's emissions target and said a final reduction rate, of either 14.7, 19.2, 25.7 or 31.3 percent from BAU levels, would be set after taking into account the impact of international climate negotiations.

LIVE: President Trump speaks at the U.N. General Assembly

target from the reduction scenarios, considering our

CNES CENTRE NATIONAL D'ETUDES SPATIALES

CNES PROJECTS LIBRARY

MERLIN

A satellite to survey atmospheric methane

AT A GLANCE

HOME MULTIMEDIA GALLERY

IN DEPTH

MISSION SATELLITE SYSTEM GROUND SEGMENT ORGANIZATION CONTACTS OTHER SITES

FOR PROFESSIONALS

MERLIN

In 2021, the French-German MERLIN satellite (Methane Remote Sensing Lidar Mission) will go into Earth orbit to measure concentrations of atmospheric methane with unprecedented precision and thus better understand the sources of this greenhouse gas playing a key role in global warming.

Precisely measuring concentrations of atmospheric methane to quantify and locate emission sources and their variation is key to achieving a closer understanding of Earth's climate mechanisms. To give an idea of its role, 1 tonne of methane has 25 times more impact on global warming than 1 tonne of carbon dioxide over a timescale of a century.

That is why CNES and the German space agency DLR decided to jointly develop the MERLIN satellite (Methane Remote Sensing Lidar Mission), scheduled to launch in 2021. Its mission will be to measure methane concentrations in Earth's atmosphere with unprecedented precision, to characterize natural (flood zones, notably due to the thawing of permafrost in the Arctic) and

Mission Measurement of methane concentrations in Earth's atmosphere and identification of emission sources

Launch date 2021

Partners CNES, DLR

Instruments IPDA LIDAR

Localisation Sun-synchronous polar orbit, at an altitude around 500 km

Mission lifetime At least 3 years

Government Programs

The Paris Agreement

[Progress tracker: Work programme resulting from the relevant requests contained in decision 1/CP.21](#) (version of 3 July)

Paris Agreement: essential elements

The Paris Agreement builds upon the Convention and for the first time brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework. Further information on key aspects of the Agreement can be found [here](#).

Nationally determined contributions

At the Paris Agreement, all Parties agreed to submit nationally determined contributions (NDCs) to the global climate effort.

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EDF Announces Satellite Mission to Locate and Measure Methane Emissions

New TED Talk reveals collaborative vision designed to build better science, accelerate global reductions in oil & gas methane emissions

April 11, 2018

(NEW YORK, NY) Environmental Defense Fund President Fred Krupp today announced plans to develop and launch a new satellite purpose-built to identify and measure methane emissions from human-made sources worldwide, starting with the oil and gas industry. Data from MethaneSAT is intended to give both countries and companies robust data to spot problem areas, identify savings opportunities, and measure their progress over time.

Krupp unveiled MethaneSAT in a TED Talk at TED's flagship event in Vancouver, British Columbia, as part of [The Audacious Project](#), successor to the TED Prize. MethaneSAT is part of the inaugural round of world-changing ideas for which a coalition of philanthropists have contributed and helped raise \$400 million and counting. MethaneSAT is the newest chapter in EDF's ongoing effort to advance peer-reviewed science focused on oil and gas methane emissions.

"Cutting methane emissions from the global oil and gas industry is the single fastest thing we can do to help put the brakes on climate change right now, even as we continue to attack the carbon dioxide emissions

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(212) 616-1325
[Contact](#)

Media contact

Lauren Whittenberg
(512) 691-3437
[Contact](#)



We aim to bring transparency to the performance of shipping vessels worldwide to drive efficiency improvements and cut carbon emissions.

NGO's



A **MAXAR** COMPANY

See a better world.®