

Biogas Subcommittee Annual Meeting



15 December 2021

Housekeeping – Tips for using Teams

Turn your camera on.

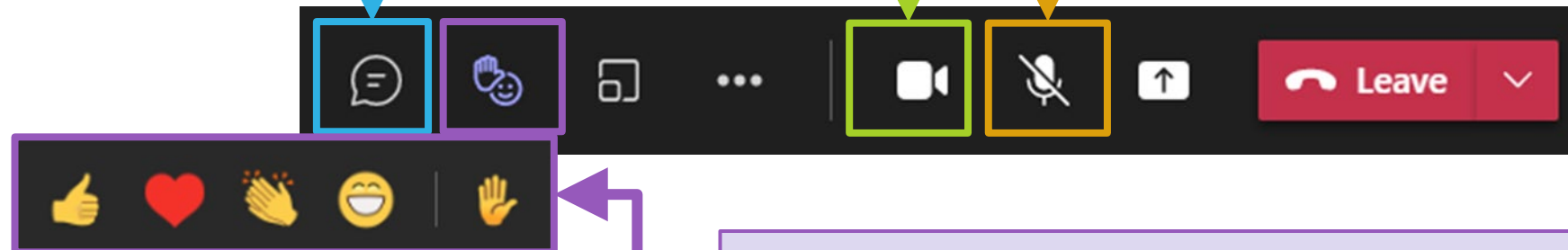
Consider turning your camera on so everyone can see you.

Mute your microphone.

Everyone should set the microphone to mute unless actively speaking.

Use the chat pane.

Enter questions here.



Use the emoticons to react to speakers during the meeting. If you have a question, please put it in the chat pane.

Help!

If you need help, please send an email to secretariat@globalmethane.org

- Welcome and Opening of the Meeting
- Update on GMI Activities
- Biogas Subcommittee Updates
- Potential Roles of GMI in Support of the Global Methane Pledge
- Examples of GMI in Action
- Panel Discussion: Roles of Collaborators in Supporting Global Methane Pledge
- Wrap Up, Next Steps, Adjourn

Biogas Subcommittee Co-Chairs



Jorge Hilbert, National Agricultural Technology Institute (INTA), Argentina



Matt Hamilton, Environment and Climate Change Canada (ECCC), Canada



Nick Elger, U.S. Environmental Protection Agency (EPA), United States



Update on GMI Activities

Monica Shimamura, Director, Secretariat

GMI Structure and Participants

Denmark has recently requested to join GMI

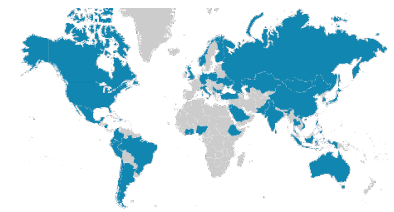


GMI is an international public-private partnership focused on reducing barriers to the recovery and use of methane as a valuable energy source.

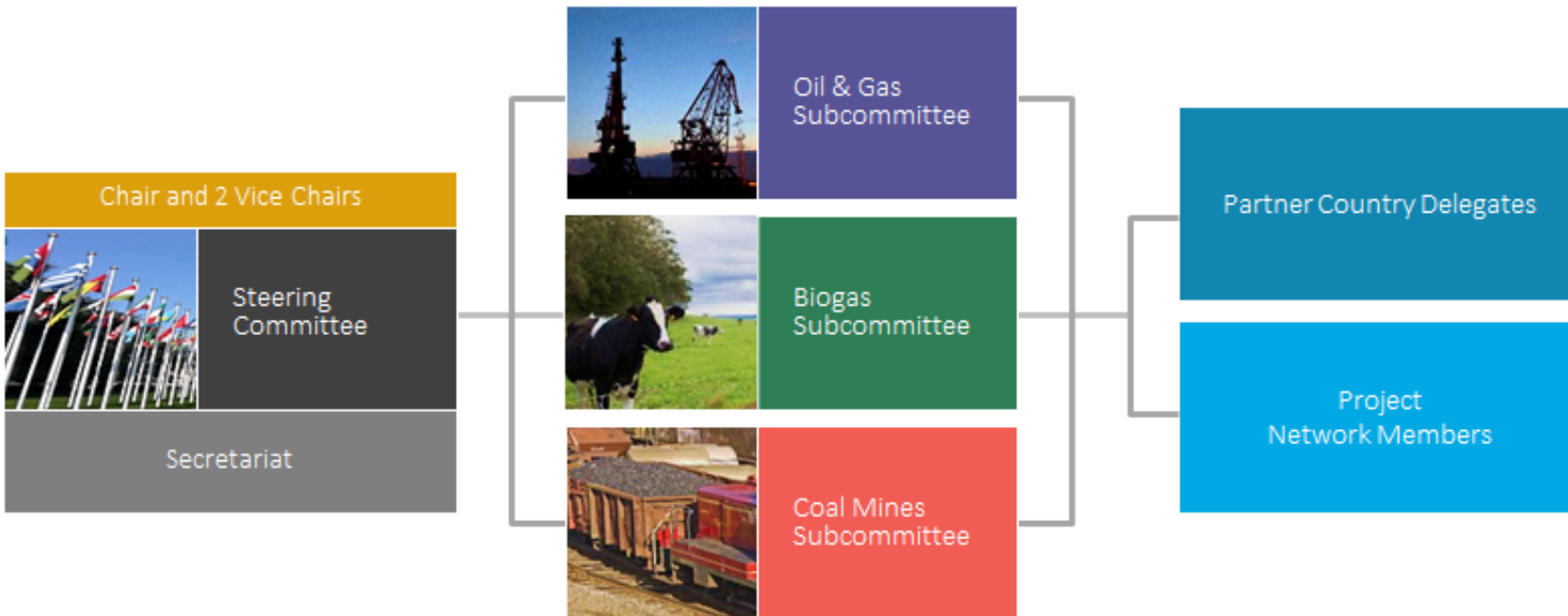


- 45 Partner Countries
- 700+ Project Network members
- Alliances with international organizations focused on methane recovery and use

GMI Partner Countries represent approximately 75% of methane emissions from human activities.



Re-chartered for 10 more years
(through May 2031)



GMI Accomplishments Since 2004



Grown from 14 to 45 Partner Countries



More than \$650 million in leveraged funding for projects and training



Approximately 750 Project Network members



Conducted hundreds of assessments, pre-feasibility studies, feasibility studies, study tours, and site visits



Provided trainings for more than 50,000 people in methane mitigation

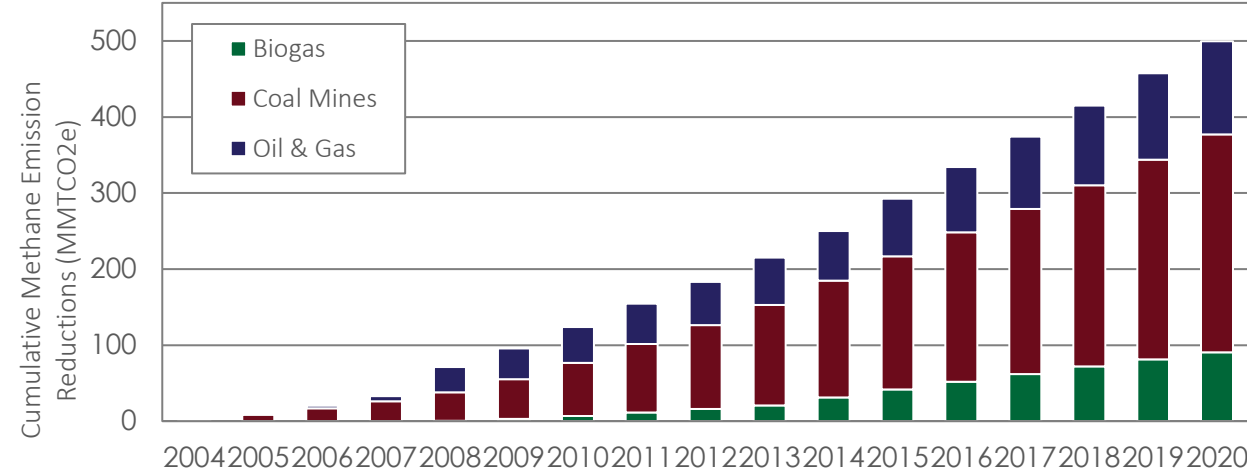


Developed more than 60 tools and resources for methane mitigation

Since 2004, GMI has reduced CH₄ by about

500 MMTCO₂e

including 42 MMTCO₂e achieved in 2020



500 MMTCO₂e is approximately equivalent* to the CO₂ emissions from any one of the following:



56 Billion

gallons of gasoline consumed



550 Billion

pounds of coal burned



60.8 Trillion

smartphones charged

* [epa.gov/energy/greenhouse-gas-equivalencies-calculator](https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator)

GMI “By the Numbers” for FY 2021

In FY 2021:

11

countries

supported activities
where more than

1,100

people

received a total of
approximately

1,000

hours

of training about
reducing methane
emissions and
capturing methane
for productive uses



Capacity Building/Information Sharing fostering best practices

3

Workshops/Trainings

European Commission, United States, Partnership-wide

9

Manuals/Websites/Other Outreach

All Partners



Assessments

identifying opportunities for emission reductions

6

Reports/Tools/Models

United States, Partnership-wide

1

Study Tours/Other Technical Assistance

India



Partnerships

building relationships to foster action

12

GMI Meetings (Steering Committee/Subcommittees)

Online

2

Conferences

Partnership-wide Online

18

Webinars, Informational Meetings, and Presentations

Colombia, Indonesia, Poland, Serbia, Ukraine, United States, Partnership-wide

- Leveraged virtual platforms to maintain and increase engagement with stakeholders
- Expanded direct communications with social media
- Promoted GMI’s technical expertise

Recent Accomplishments

- Rechartered GMI through May 2031
 - Raise ambition over next 10 years
 - Elevate international awareness of the critical need to take action now to reduce methane emissions
- Published New Terms of Reference in June 2021
- Hosted June 3 Call to Action on Methane
 - Influential global leaders on methane
 - More than 360 attendees, materials available online
- Developed new Steering Leadership model

The screenshot displays the Global Methane Initiative (GMI) website. At the top, a blue banner with white text reads "Re-chartered through May 2031". Below this is the GMI logo, which consists of a stylized flame or sunburst in blue and orange, followed by the text "Global Methane Initiative" in a bold, blue font. The website's navigation bar includes links for "About GMI", "Accomplishments", "Events & Activities", "Sectors", "Partner Countries", "Project Network", "Resources", "Participate", and "Archive", along with a search icon. A secondary navigation bar features the "Global Methane CHALLENGE" logo and the text "Tell us how you're reducing methane emissions". The main content area is titled "Terms of Reference for the Global Methane Initiative" and includes a brief description of the initiative's purpose and a "Download" link with language options (English, Chinese, Russian, Spanish). To the right of the main text is a "Contents" table of contents with links to sections like Purpose, Functions, Organization, Membership, Funding, and Appendix A. At the bottom of the page, there is a large image of the Earth with the text "A Call to Action on Methane: an international dialogue hosted by the GMI".

Refreshed Steering Committee Participation



- Chair and Vice Chairs Model
 - The Steering Committee makes appointments to each position by consensus for a 2-year term
 - Chair provides overall leadership for the Initiative
 - Vice Chairs offer additional leadership to delegate responsibilities and improve coordination with GMI Subcommittees, delegates, and strategic partners

- Current Steering Committee Members

Canada	Ghana	Serbia (NEW)
China	India	Turkey (NEW)
Colombia	Indonesia (NEW)	United States
Ecuador	Nigeria	
Finland	Saudi Arabia (NEW)	

	 <p>Chair, Ms. Helen Ryan Associate Assistant Deputy Minister, Environmental Protection Branch, Environment and Climate Change Canada</p>
	 <p>Vice Chair, Mr. Vinod Kumar Tiwari Additional Secretary, Ministry of Coal, Government of India</p>
	 <p>Vice Chair, Mr. Tomás Carbonell Deputy Assistant Administrator, Office of Air and Radiation, U.S. Environmental Protection Agency</p>

Steering Committee Priorities

- Providing support to countries that are working to aggressively reduce methane emissions, including signatories of the Global Methane Pledge
- Hosting the Global Methane Forum (planned for 2022 or 2023)
- Encouraging Subcommittees to expand their membership
- Leveraging strategic partnerships to improve collaboration – for example, with United Nations Economic Commission for Europe (UNECE) and Climate and Clean Air Coalition (CCAC)



Opportunities for the Biogas Subcommittee

- Expand Subcommittee membership
- Identify sector-specific, regional, and informal organizations to partner with



Focus on opportunities to deliver technical solutions for methane mitigation

Thank you!

Monica Shimamura

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secretariat@globalmethane.org



Biogas Subcommittee Updates

Nick Elger, Biogas Subcommittee Co-Chair, U.S.
Environmental Protection Agency (EPA), United States

Biogas Subcommittee Updates

- **Coming Soon!** *Policy Makers Handbook for Measurement, Reporting, Verification in Biogas Sector*
- Biogas Toolkit Updates
 - *Solid Waste Emissions Estimate Tool (SWEET), OrganEcs, Anaerobic Digester Screening Tool*
- Subcommittee working on developing an Action Plan
 - **June- August:** Conducted survey of Country Delegates to assess priorities and actions to mitigate methane
 - **November- December:** GMI Biogas Delegate Workshops
 - Deeper dive and identified Partner Countries' priorities
 - Plan to reconvene in new year to develop Action Plan with broader Subcommittee

Summary from Delegate Workshops

Delegates discussed area of expertise, country priorities, and national actions to mitigate methane.

Key Takeaways

- Methane measurement, verification and reporting is a key challenge for all three sectors (agriculture, waste, and wastewater)
- Delegates working in the agriculture sector highlighted additional methane issues and actions beyond biogas (e.g., alternative methods for manure management, feed additives)
- Anaerobic digester/ biogas systems are not applicable for every situation
- Sectors (Ag, MSW, WW) have different needs, challenges, and opportunities for mitigating methane



Global Biogas Opportunity

Paris Climate Agreement

- Paris Agreement set a goal to **limit global temperature increase to well below 2 degrees Celsius**, while pursuing efforts to limit the increase to 1.5 degrees.
- 195 countries have signed the agreement, including all GMI Partner Countries.

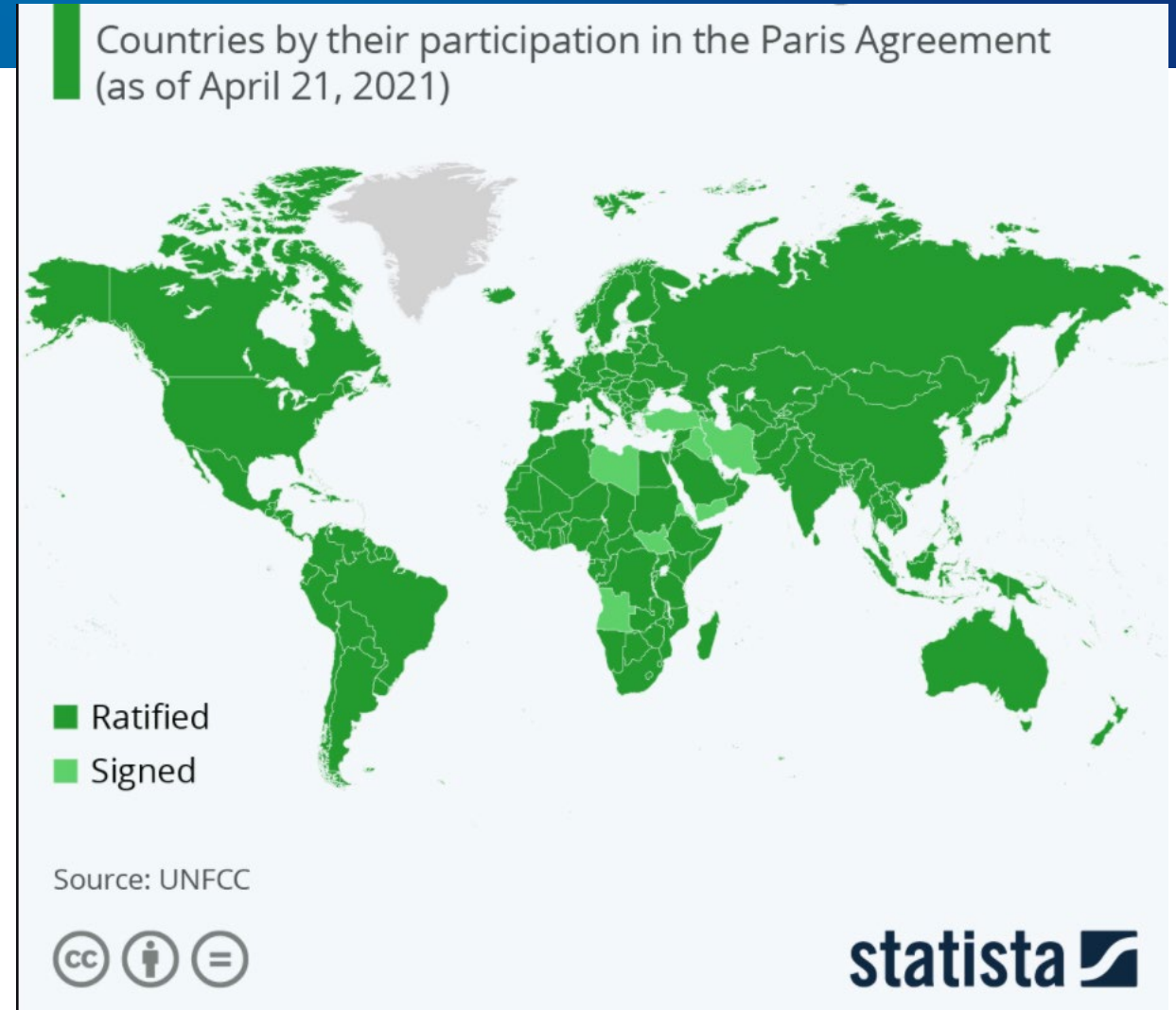


Image Source: [Martin Armstrong, Statista](#) (modified to update US ratification)

Map includes both GMI & Non-GMI countries

Global Methane Pledge (GMP)

- GMI is a key supporter of the GMP
- Countries joining the GMP commit to:
 - Work to achieve a **collective goal of reducing global methane emissions by at least 30% from 2020 levels by 2030**
 - Move towards using the highest tier good practice inventory methodologies, and to provide greater transparency in key sectors.
- **110 countries** have signed, representing over 40% of global methane emissions
 - 34 GMI Partner Countries



Global
Methane
Pledge

The logo features the text 'Global Methane Pledge' in a blue sans-serif font. To the right of the word 'Global' is a stylized graphic consisting of two curved lines, one green and one blue, forming a partial circle.

Source: <https://www.globalmethanepledge.org/>

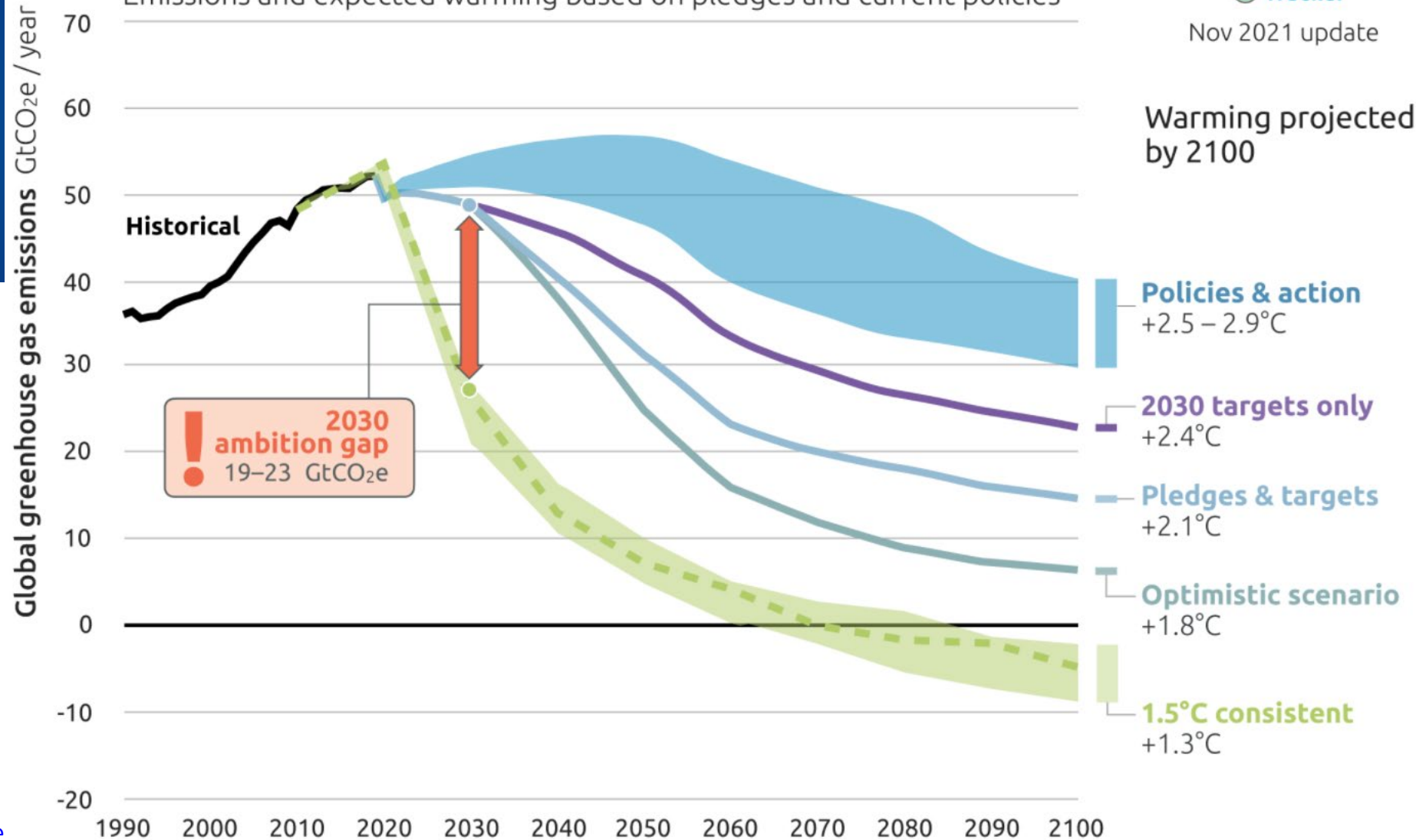
Global Decarbonization Targets

2100 WARMING PROJECTIONS

Emissions and expected warming based on pledges and current policies



Nov 2021 update



Warming projected by 2100

Policies & action
+2.5 – 2.9°C

2030 targets only
+2.4°C

Pledges & targets
+2.1°C

Optimistic scenario
+1.8°C

1.5°C consistent
+1.3°C

GMI: A Critical Role for Meeting National Commitments

- Reducing methane emissions is an **effective strategy** to achieve near-term, impactful Greenhouse Gas (GHG) emissions reductions.
- GMI can leverage network of 45 Partner Countries, private sector organizations, and multilateral partners, and unparalleled track record of **developing and disseminating technical expertise, tools, and resources**, enabling countries to reduce emissions and meet goals set out in the Paris Agreement.



Ways GMI Biogas Subcommittee Can Support the Global Methane Pledge and Methane Mitigation Efforts



- **Convene experts to exchange information**
 - For example, Subcommittee meetings, webinars
- **Share tools and resources to assist countries to develop and implement:**
 - Baseline emissions and resource assessments
 - Greenhouse gas inventories
 - Measurement, reporting and verification
- **Explore full spectrum of options for methane mitigation**
 - E.g., alternative waste treatment options, feed and manure additives, biogas to replace fossil fuels, soil carbon benefits from digestate
- **Facilitate and provide platform for training, capacity building, and advice to member countries**

Opportunities to Engage with GMI



- **Participate** in Subcommittee events and share best practices and research.
- **Connect** with countries to learn about best practices for methane mitigation.
- **Leverage GMI resources and expertise** to help craft methane mitigation policies in your country.
- **Use and Disseminate GMI tools and resources** in the [Biogas Toolkit](#) to support methane mitigation activities in your country.
- **Share relevant tools, resources, and events** that can be promoted through Biogas Toolkit and GMI's [events webpage](#) and social media.
- **Recruit and engage** relevant in-country [Project Network](#) members and Delegates who might advance methane mitigation, as appropriate.



GMI Project Network in Action

TERI Centre for Waste Management



- Over several years, TERI, a GMI Project Network Member, worked alongside U.S. EPA to support waste management projects in India
- This engagement helped build TERI's capabilities through trainings and capacity building
- TERI has since expanded work to support municipalities across India, and now houses a dedicated Centre for Waste Management Sample TERI clients:
 - Local Municipalities: East Delhi, South Delhi, North Delhi, Varanasi, Panjim, Simla
 - Central Government: MoHUA, MoEFCC
 - International: United States, Germany, Norway, United Nations
- Dr. Pandey, head of the Centre, serves on multiple national expert committees

Photo: TERI headquarters at the Habitat Centre in Delhi. Photo features EPA team members who led the waste characterization study and training in April 2019.

East Delhi Municipal Corporation



Photo: EPA team members and representatives from the East Delhi Municipal Corporation at the Geeta Colony AD facility in East Delhi.

- Baseline GHG emission estimation through SWEET runs
- Slope failure analysis for the waste disposal site post failure and suggestions for remedial measures
- Waste management regulatory audits
- Audits for road sweeping operations
- Training and capacity building for bulk waste generators

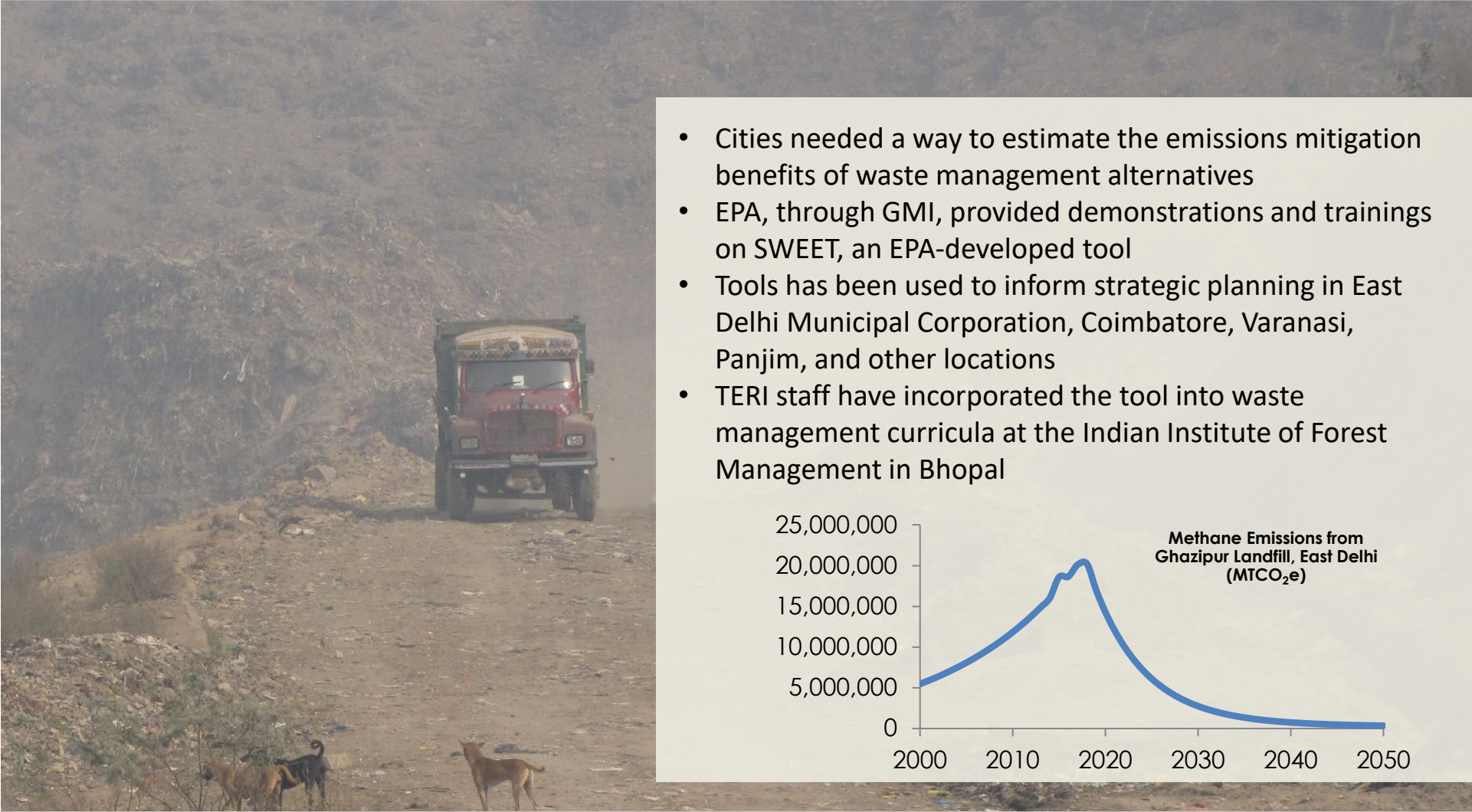
Waste Characterization Training



- Gurugram needed assistance in understanding city's waste streams
- EPA, through GMI, led a waste characterization study that helped justify the need for organic waste treatment
- The study was used as an opportunity to train TERI staff
- TERI has since conducted similar analyses in other cities
- Study formed the basis of waste characterization guidance for use by other cities across the world

Photo: TERI staff sorting waste received at the Bhandwari landfill in Gurugram. The facility receives between 1,800 and 2,000 metric tonnes of waste per day.

Solid Waste Emissions Estimation Tool



- Cities needed a way to estimate the emissions mitigation benefits of waste management alternatives
- EPA, through GMI, provided demonstrations and trainings on SWEET, an EPA-developed tool
- Tools has been used to inform strategic planning in East Delhi Municipal Corporation, Coimbatore, Varanasi, Panjim, and other locations
- TERI staff have incorporated the tool into waste management curricula at the Indian Institute of Forest Management in Bhopal

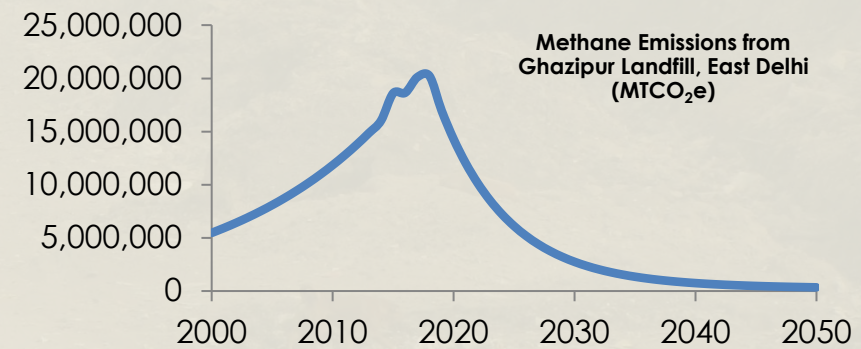


Photo: Ghazipur Landfill in East Delhi. EPA assisted East Delhi in modeling emissions scenarios as part of the city's waste management action planning process.

Biogas Project Database



- TERI, with assistance from EPA and GMI, supported MNRE in developing the framework for a national biogas database
- Data collected for three states (Punjab, Haryana, Uttar Pradesh) at first, with MNRE expected to expand the database nationally
- Benefits:
 - Standardize basic data collection across project sites
 - Track project GHG emission reductions, feedstock, and output, and link to national GHG inventory and mitigation goals
 - Promote new projects and information sharing
 - Identify “model” sites that can be used for case studies, and sites that may require targeted assistance

Photo: Biodigester facility in Hoshiarpur, Punjab. Punjab is one of the states that has been used as a pilot for the biogas project database.

Biogas Cooling to Reduce Food Loss



- Substantial post harvest food waste in India
- Potential to use biogas for cooling systems to reduce food loss and improve profitability by avoiding a supply glut
- TERI, with support from EPA and GMI, is currently conducting a prefeasibility assessment of pilot projects in two villages in Maharashtra
- If feasible, substantial impact in the agricultural sector

Photo: Group discussion with farmers for identifying the availability of commodity cooling application in Satara, Maharashtra. Maharashtra is one of the states that has been identified for conducting a prefeasibility assessment for the biogas based cooling application.

Enabling Biogas Projects Workshop



- Limited awareness in India of tools and resources for reducing financial risks of biogas project development
- TERI supported GMI in organizing a workshop to highlight GMI resources and showcase exemplary projects
- In addition, this workshop represented a first effort to bring together waste and agriculture sector stakeholders
- As a result, biogas sector stakeholders are better positioned to coordinate efforts to advance biogas projects

Photo: The EPA team, including Mr. Sunil Dhingra and Mr. Suneel Pandey, who lead TERI's work with EPA in the agriculture and MSW sectors, respectively.




THANK YOU

Dr Suneel Pandey

Director, Environment and Waste Management Division

Email: spandey@teri.res.in





Novi Sad, Serbia Composting Plant

Mira Radenović
City of Novi Sad

Background

Novi Sad is the second largest city in Serbia, with a population of approximately 340,000 as of 2011.

Novi Sad and the municipalities of Backa Palanka, Backi Petrovac, Beocin, Zabalj, Srbobran, Temerin, and Vrbas, are Waste Management Region (SBWMR), have a combined population of approximately 600,000.

The eight municipalities in the SBWMR produce approximately 204,770 tons per year (t/year) of solid waste, nearly half of which is organic waste.

Waste Management Strategy

- ▶ Serbia's obligation, within the EU accession process, is to reduce the amount of biodegradable waste from municipal waste....
- ▶ Waste management strategy for the period 2010-2019.establishes a system for reducing the disposal of biodegradable waste in landfills by 25% by 2022, 50% by 2026 and 65% by 2030.
- ▶ Serbia has not yet adopted a new strategy, but must comply with a new EU directive on sustainable development, which stipulates that only 10% of the total amount of produced waste can be disposed on landfills by 2035/40.

Pre-Feasibility Study

- ▶ Using funds from the German Corporation for International Cooperation (GIZ) and with the assistance of the U.S. Environmental Protection Agency (EPA), Global Methane Initiative (GMI) and Climate and Clean Air Coalition (CCAC), Novi Sad developed project documentation for and started construction of the first municipal composting plant in Serbia in 2020, with the projected capacity of about 5,000 t/year. When the first phase of construction finalized, current capacity of the Plant stands at around 1,500 t/year, and the potential to increase it to over 12,360 t/year once the plant is fully constructed and the operational plan optimized“. (*pre-feasibility study for composting plan of Novi Sad*)

Significance and Results

- ▶ Before the construction of the compost field, the collected green waste from urban areas was mostly taken to the landfill. This created costs for taking the waste to the landfill, and also waste produced greenhouse gas (GHG) emissions at the landfill, which has a multiple negative impact on the environment.
- ▶ In accordance with the relevant decisions from the Kyoto Protocol, the emission reductions of any of the greenhouse gases are calculated and expressed in terms of carbon dioxide equivalent. Composting 5,000 tons of green waste per year, which is about 417 tons per month, will reduce 367 tons of CO₂ emissions per month. That is equal to the pollution that 951 cars create per month.

Compost Production

- ▶ By producing compost, savings of more than half a million dinars a year are achieved, due to the elimination of the costs of transporting biowaste to the landfill.
- ▶ The planting of new greenery has been improved through the fertilization with quality compost from our own production.
- ▶ “Part of the collected green waste is also used for heating the building of PUC “ Gradsko zelenilo ” using wood chips in the heating boiler.

Future Plans and Conclusions

- ▶ The city of Novi Sad is now in the final phase of developing a modern regional center for waste management.
- ▶ Biological-waste management (green waste, food waste and organic waste) is one of the most important aspects of the project in the context of reducing greenhouse gas emissions.
- ▶ We have important steps ahead of us in terms of establishing an adequate waste management system. There are many challenges ahead of us on this path that we will surely overcome with the help of our faithful partners.

Project Photos



The role of Biogas & RNG in the future global energy system

– and opportunities for more collaboration between Denmark and GMI

Chris Voell
Head, Biogas and Waste
Danish Trade Council of North America
Ministry of Foreign Affairs of Denmark

Enabling the introduction of Danish biogas and waste solutions into the North American market.



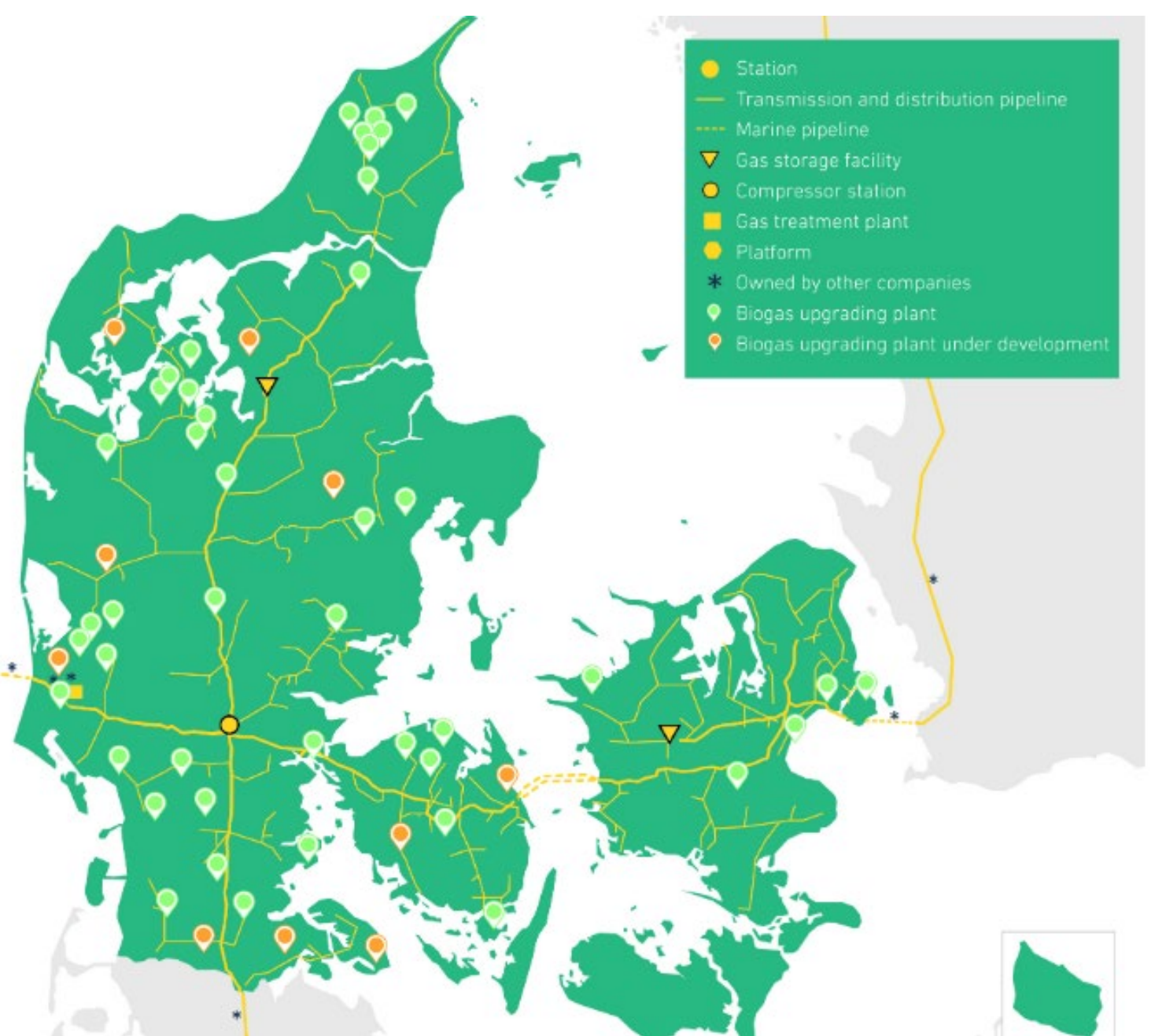
ROYAL DANISH EMBASSY
The Trade Council



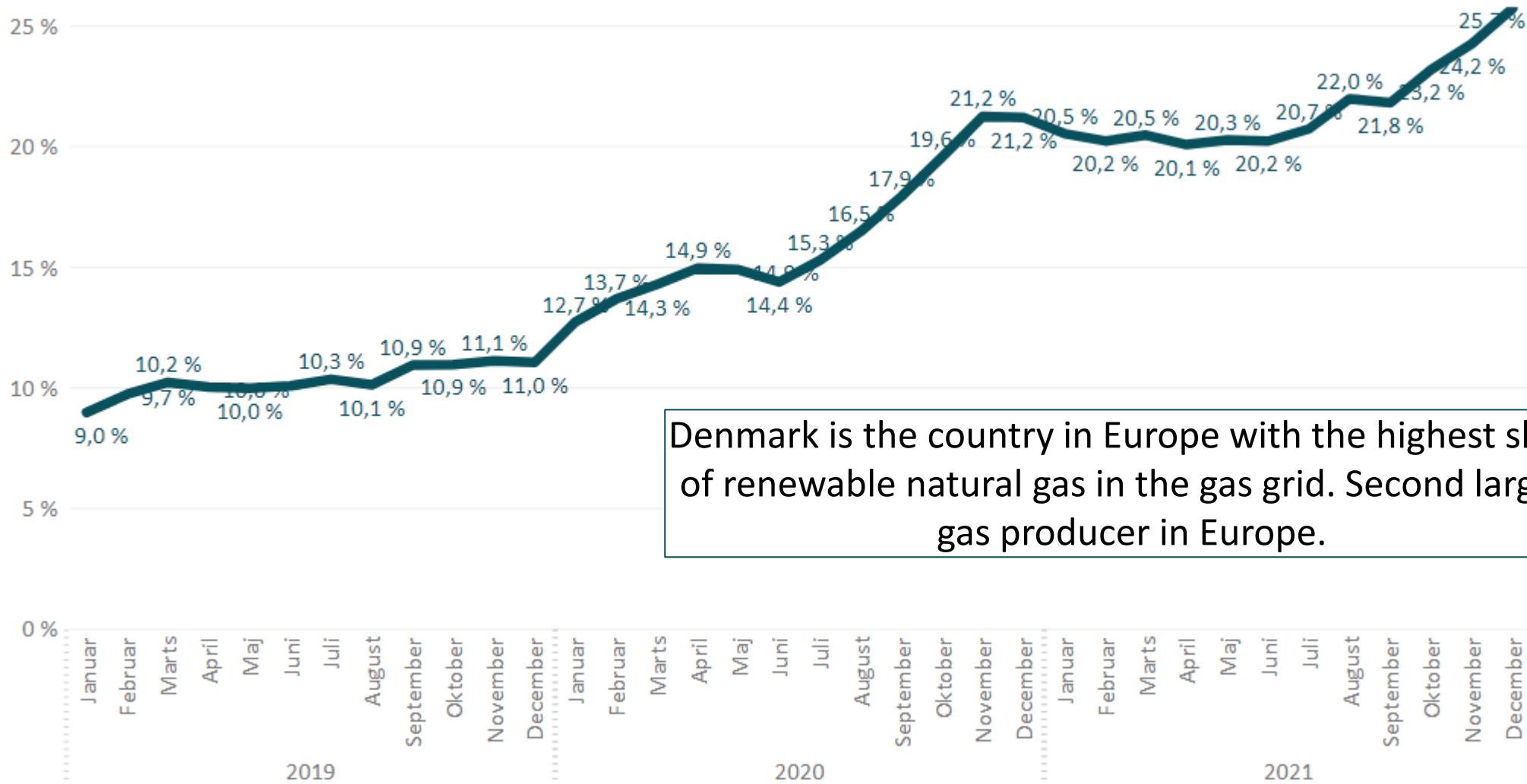


Kingdom of Denmark

- Goal: Climate neutrality by 2050 – 70% by 2030
- 2/3 of all renewable energy in Denmark is bioenergy. 35% of all energy production is renewable energy. Wind power production rapidly increasing.
- Hydrogen from wind and CO2 from biogas expected to play significant role
- Overall strong political consensus across the 10 parties in the Parliament.
- RNG is recognized as a solution to reduce energy-, environment- and resource issues from society
- Triple helix cooperation



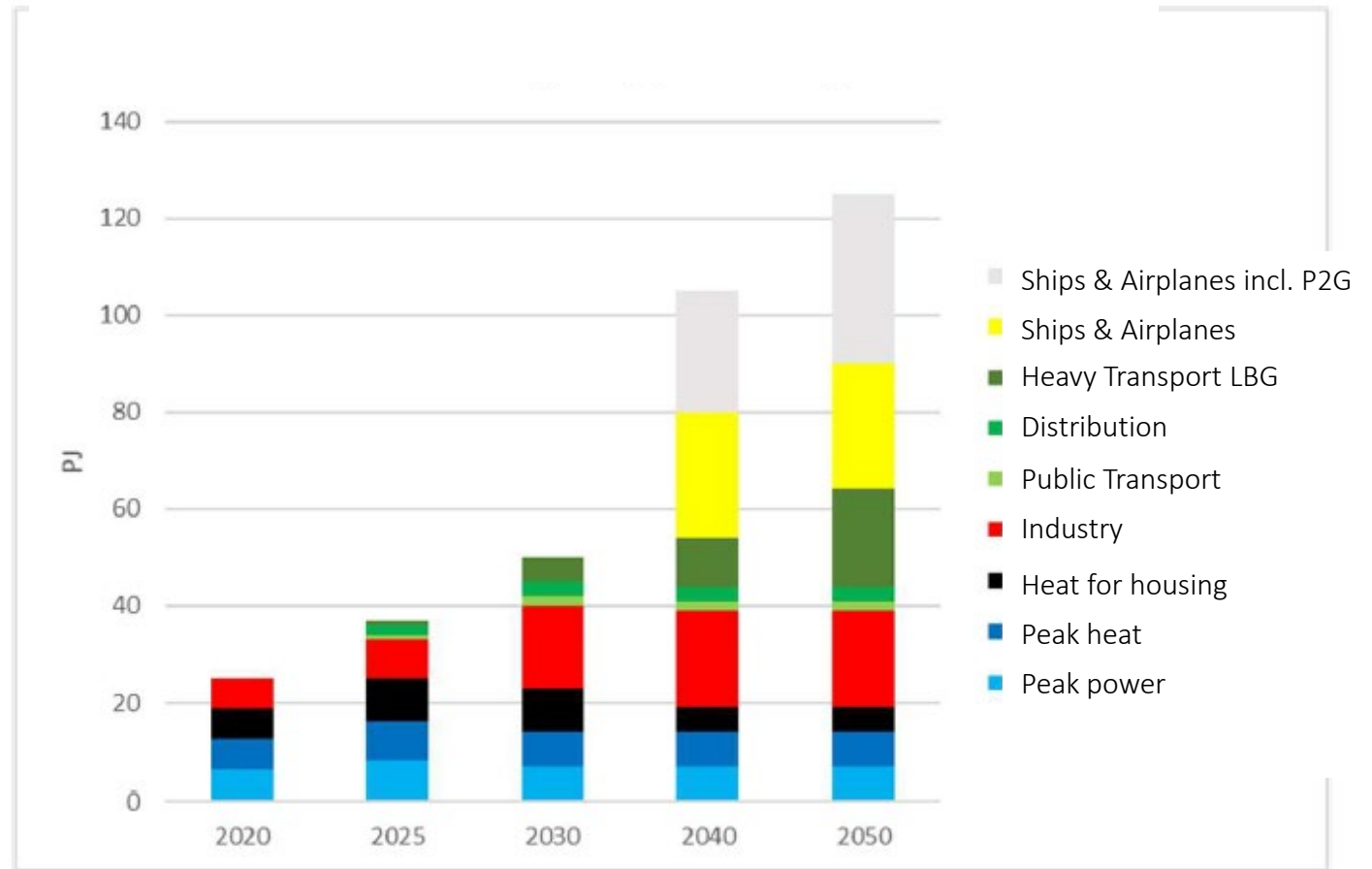
Share of RNG in the Danish gas system



Denmark is the country in Europe with the highest share of renewable natural gas in the gas grid. Second largest gas producer in Europe.

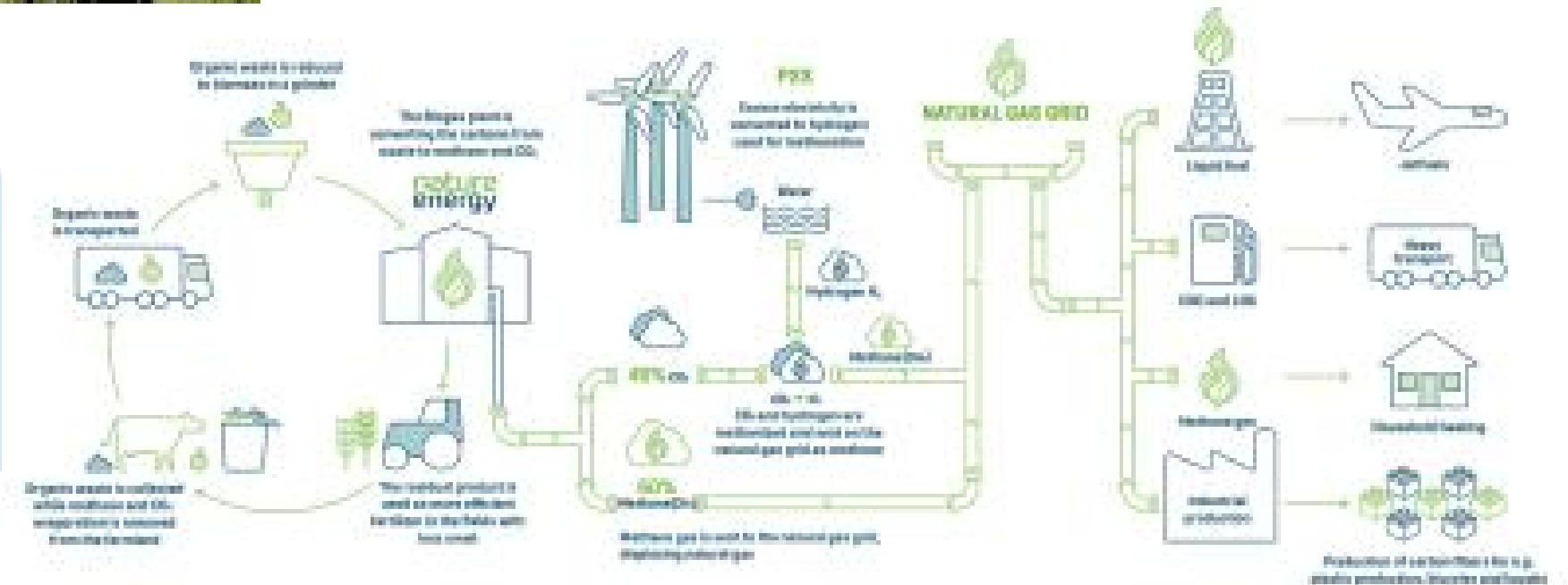
The role of RNG in heavy industry and transport sectors towards 2050

- 51 plants connected to the grid (2021). More underway. Large scale industrial co-op plants.
- Biogas produced from manure and waste products. **50% of the gas is upgraded** for the grid. Digestate is recognized as high quality fertilizer.
- In 2025 RNG is expected to make up **50% of the Danish gas consumption**. By 2030, we expect to hit 100%
- **Sector focus on:**
 - process optimization
 - methane slip reduction
 - biomass sustainability
 - power-2-X integration



Source: Danish Energy Agency

Danish Biogas Model



Biogas Alliance – Danish Technology Solutions

- Sand/grit separation from manure & biosolids
- Food waste pre-treatment to biopulp
- AD system design and optimization
- Fertilizer production
- Food waste/high solids pumping and mixing
- Enzyme use to enhance digester performance
- Hydrogen sulfide and CO2 removal from biogas for RNG
- Biogas system ownership and operation
- Power to X technology for expanded biogas benefits

- Alliance Companies active in many other GMI countries outside North America



THE WASTE, RECYCLING & BIOGAS ADVISORY PROUDLY PRESENTS
BIOGAS ALLIANCE 2021



USM • PUMPS USA Inc.



Biogas Go Global

- Biogas Go Global provides a **commercial, R&D and policy knowledge sharing platform** for the accelerated growth of the biogas industry in the United States, Denmark and other partner countries by establishing collaboration between industry, academia and the private sector.
- The goal of Biogas Go Global is to **grow the global biogas sector** through partnerships between Danish and partner country stakeholders.
- www.biogasgoglobal.com

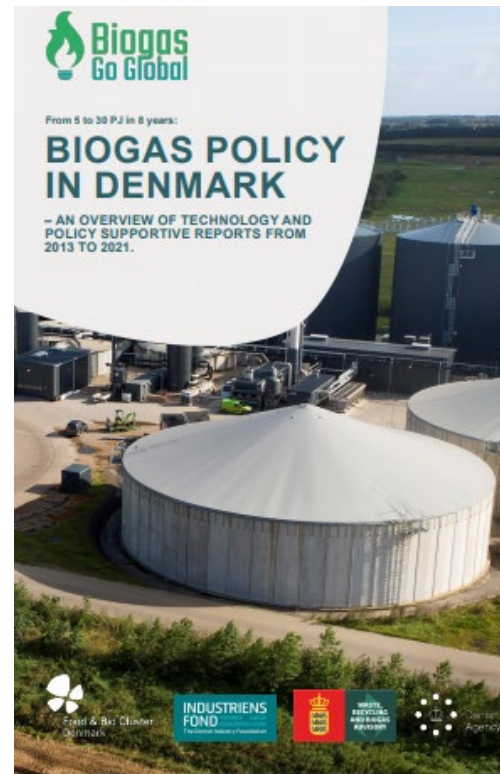


Knowledge sharing: Policy and production of RNG

- Environmental benefits via biogas
- Pretreatment of biomass: Straw, grass, food waste
- Good use of digestate
- Upgrade of biogas to natural gas quality
- Power-2-X: Wind & Solar power integration to gas grid
- Biogas policy in Denmark

Download for free [here](https://www.biogasglobal.com) via www.biogasglobal.com

Written by The Danish Energy Agency, Food & Bio Cluster Denmark et.al.



Methane leakages from biogas plant: How much and how can we reduce them?



27. september 2021

Get insights into a brand new study from the Danish Energy Agency

A Celebration of Biogas' Role in the Danish and US Energy & Agrifood Sectors



Webinar

Sted
Online - brought to you from State of Green in the center of Copenhagen, Denmark, Online

Pris
Gratis / Free

Fra
23. august 2021 kl. 15:00

Til
23. august 2021 kl. 17:15

Informationsmode

Sted
Zoom

Pris
Gratis / Free

Fra
27. september 2021 kl. 16:00

Til
27. september 2021 kl. 17:00

Webinars and partners



Agriculture and Agri-Food Canada



RENEWABLE THERMAL COLLABORATIVE

CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE



Institute of Gas Innovation and Technology



WORLD BIOGAS ASSOCIATION

Circular City Week New York: Food Waste & Biogas - Driving the Circular Economy in Denmark



24. marts 2021

Webinar

Sted
Webinar via Zoom

Pris
Gratis / Free

Fra
24. marts 2021 kl. 16:00

Til
24. marts 2021 kl. 17:00

Kontakt

Sustainable Biogas – Climate and Environmental Effects of Biogas Production



16. marts 2021

Examples of Denmark/US ties energy and sustainability...

California and Denmark Sign MOU on Climate Smart Dairy Collaboration

Posted on January 22, 2021 by Office of Public Affairs

CDFA Secretary Karen Ross and Minister Rasmus Prehn of Denmark's Ministry of Food, Agriculture and Fisheries have signed a Memorandum of Understanding (MOU) focusing on dairy innovations and technologies addressing climate change. The signing event, which was held virtually, included agricultural stakeholders from California and Denmark, and featured a presentation from the Center for Policy Research on Energy and the Environment at Princeton University.



US and EU pledge 30% cut in methane emissions to limit global heating

Major commitment with deadline of 2030 is big advance towards reaching 1.5C goal set out in Paris agreement



Department of Energy


Secretary Granholm, Danish Climate, Energy, and Utilities Minister Jørgensen Establish Historic Agreement Focused on Clean Energy Research, Science Collaboration

JUNE 7, 2021

[Energy.gov](#)

Secretary Granholm, Danish Climate, Energy, and Utilities Minister Jørgensen Establish Historic Agreement Focused on Clean Energy Research, Science Collaboration

Today, the U.S. Secretary of Energy Jennifer M. Granholm and Denmark Minister of Climate, Energy and Utilities Dan Jørgensen held a virtual signing ceremony for a Memorandum of Understanding (MOU) that, for the first time ever, outlines areas of planned cooperation in the fields of clean energy research, science and technology. This historic agreement establishes a strong framework for the two countries to enhance international collaboration around clean energy innovation ranging from the physical sciences to technological advancement to create the solutions



Minister of Climate, Energy and Utilities, Denmark established a historic agreement during a virtual ceremony

Areas where GMI and Denmark can benefit from each other

- Benefits of biogas – building a sustainable RNG sector with true green impact
- R&D&D within energy storage and power-2-X
- Knowledge sharing on pretreatment of biomass: Straw, grass, food waste etc.
- Gov2Gov policy development and implementation

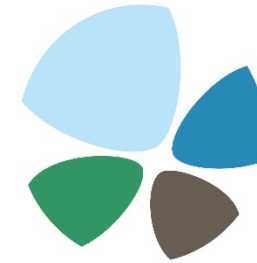
Thank you for your attention



**MINISTRY OF FOREIGN AFFAIRS
OF DENMARK**

The Trade Council

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Food & Bio Cluster
Denmark

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Copenhagen, Denmark





Roles of Collaborators to Support Global Methane Pledge



WORLD BIOGAS
ASSOCIATION

GMI Biogas Annual Meeting

Charlotte Morton, Chief Executive World Biogas Association

15 December 2021

WHO ARE WE?



- Founded in 2016 by national associations from the UK, USA and Italy and 20 founding company members
- Now represent ~ 100 organisations from around the world, including national associations from Latin America, Asia, Africa and Europe
- Observer with UNFCCC, member of CTCN, CCAC, GMI, and a partner of C40 Cities Network
- Cooperating with FAO, EU, UNEP, IEA among others



WHY ARE ORGANIC WASTES A PROBLEM?

- ✓ Over 105 billion tonnes of organic wastes globally
- ✓ If not recycled, these emit methane and other GHG emissions
- ✓ Global Methane Assessment by CCAC demonstrated tackling methane is most 'immediate and cost-effective' way to keep global warming below 2C
- ✓ Organic wastes from food production, food waste itself, farming, landfill and wastewater treatment are responsible for about 25% of global methane emissions
- ✓ Only 2% are treated and recycled

AD AND GLOBAL METHANE PLEDGE

- ✓ Anaerobic Digestion (AD) recycles organic wastes into
 - i. Biogas
 - ii. bio-CO₂
 - iii. natural fertilisers
 - iv. and other valuable bio-products

- ✓ Over 100 countries signed up to Global Methane Pledge
- ✓ AD can deliver ~50% of this

How does WBA support countries?

➤ Raising awareness

- Flagship report *Biogas: Pathways to 2030* highlights the importance of recycling methane emitting organic wastes
- Joint letters with national associations to national ministers
- Hosted an official side event at COP26
- Presenting at Third Party Events
- WBA will publish a report on methane emissions from organic wastes next year

How does WBA support countries?

➤ Knowledge transfer

- Global Food Waste Management
- The Global Potential of Biogas
- Biogas: Pathways to 2030
- Country Profiles (Indonesia country profile will be published in 2022)
- Policy Briefings
- Operational Guidance Notes
- Monthly newsletter
- Regular Technical Webinars

How does WBA support countries?

➤ **Facilitating partnerships opportunities**

- The annual World Biogas Summit and Expo
- Members' Meetings
- Roundtables

➤ **Training and Standards**

- WBA is in the process of establishing an International AD Certification Scheme
- A virtual learning management platform covering all aspects of AD processes is also set to go live in Spring 2022

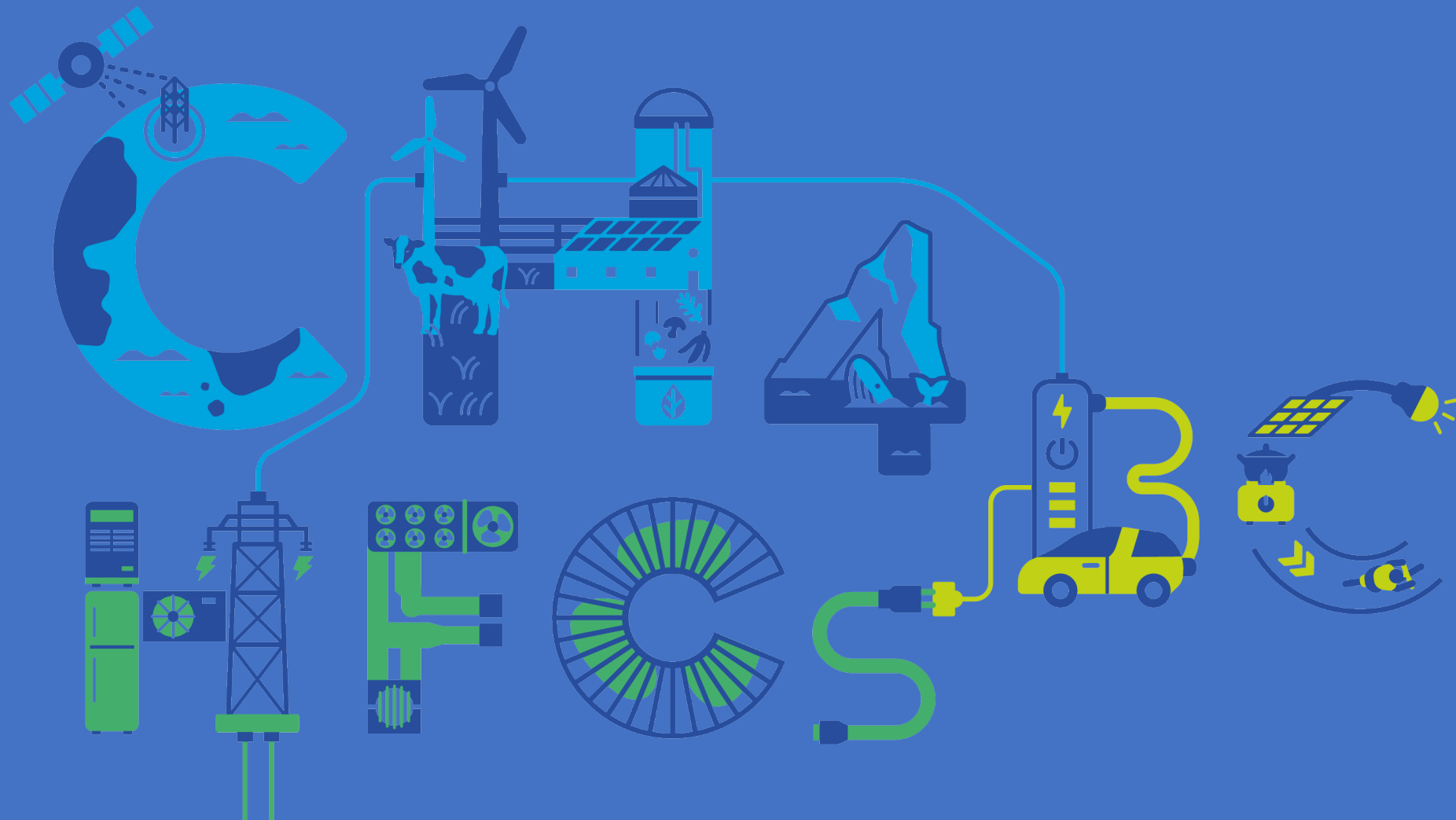
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Our support to countries & to the GMP

15 December 2021



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

ABOUT

Supporting climate and clean air solutions by:

- Enhancing capacity in national institutions
- Supporting science-based policies
- Catalysing action in key sectors



GLOBAL METHANE ASSESSMENT

The atmospheric concentration of methane is increasing faster now than at any time in the observational record.

- Methane emissions are projected to continue rising through at least 2040
- Likely in part due to fossil fuels - surge in gas extraction - in part due to tropical biogenic flux (perhaps climate driven)
- Need 45% by 2030 for the 1.5C target. Regardless of exact fraction of total or growth from specific sectors, we know the big ones and can reduce them!



GLOBAL METHANE ASSESSMENT

Benefits and Costs of Mitigating Methane Emissions

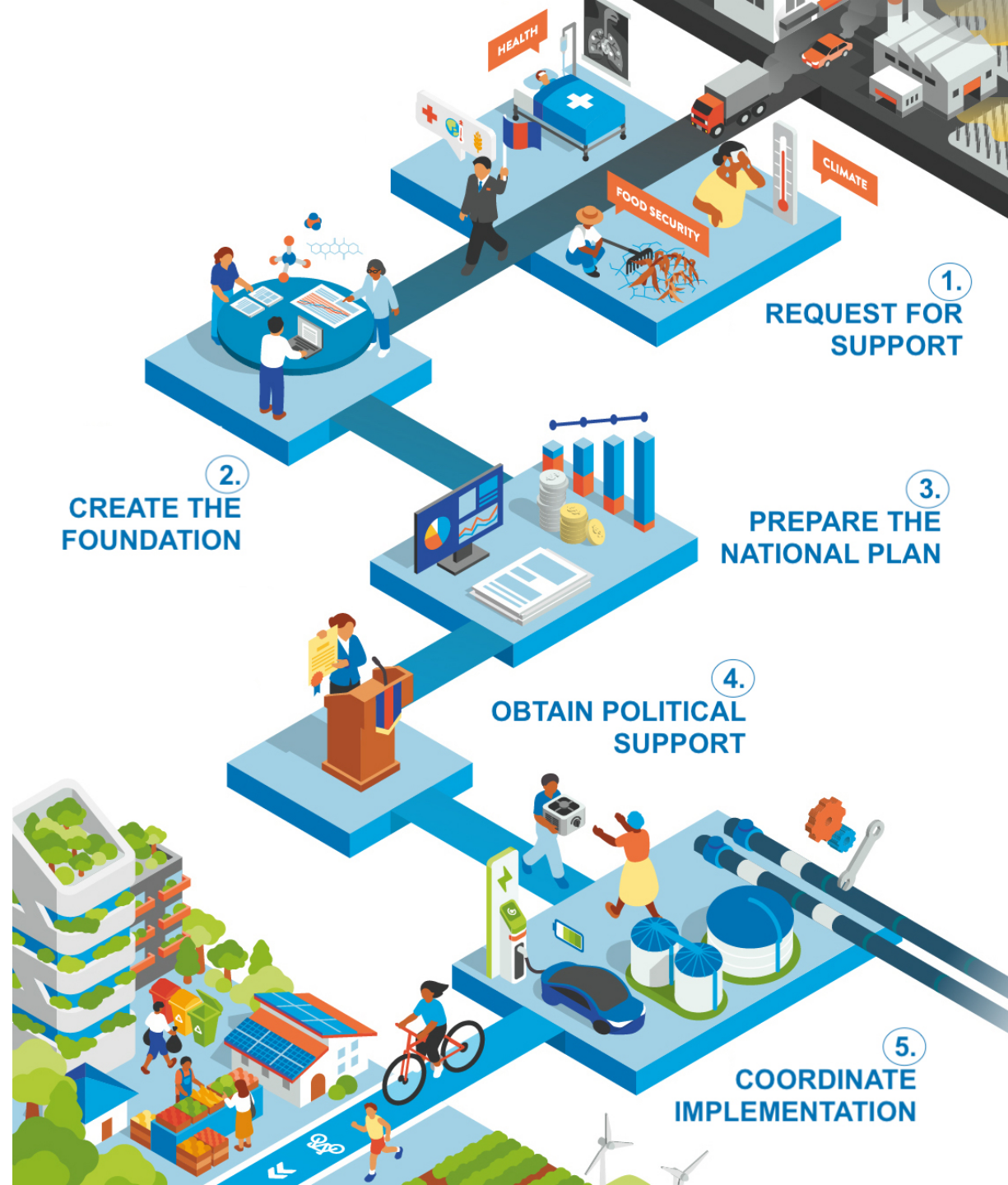
Limiting Warming to 1.5°C at the Lowest Cost

By  **2030**

methane emissions need to be reduced in each of the three main emitting sectors:



PLANNING



SUPPORT



ENGAGEMENT STRATEGY WASTE SECTOR

CH₄ reductions

- Preventing organic waste, as well as diverting it *from landfills and open dumps*
- Collecting and using/flaring of gas from existing landfills *to mitigate the methane already generated*
- Developing economic uses and facilities for organics, *such as composting or waste-to-energy*

REDUCING SHORT-LIVED CLIMATE POLLUTANT EMISSIONS FROM WASTE

Many common waste disposal methods generate short-lived climate pollutants like methane and black carbon - powerful climate forcers that damage our environment and health. Changing our consumption habits and managing waste differently are important steps in the fight against climate change and air pollution.

Without action, global waste could grow by **70%** by 2050



WE CAN STOP EMISSIONS WITH

OPEN BURNING ALTERNATIVES
Improved waste management services reduce the need to burn waste

WASTE PREVENTION AND SEPARATION
Diverting organic waste from landfills prevents emissions

LANDFILL GAS CAPTURE
Existing technology can cut emissions **by +60%** by 2030

ENGAGEMENT STRATEGY AGRICULTURE SECTOR

- All CCAC countries have agriculture SLCP actions in climate policy plans, with a sufficient number to contribute to 20-25% CH₄ reduction
- Commitments/plans from top 10 agricultural burning nations to eliminate unnecessary agricultural burning
- Foster enabling frameworks
- Forge cross-linkages to net-zero climate mitigation strategies by piggy backing on existing efforts
- Enteric: Advance market-readiness of products to reduce enteric CH₄ + promote emissions intensity reductions



RESOURCES & TOOLS



Available At:
<http://shindellgroup.rc.duke.edu/apps/methane/>

SUPPORT TO GMP

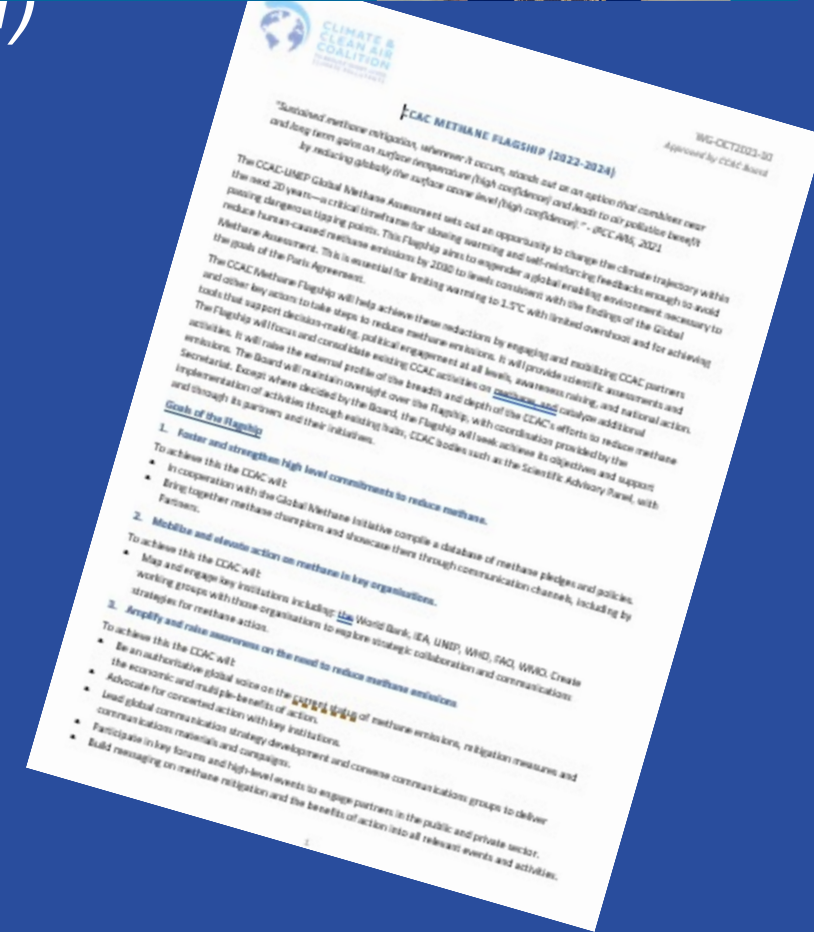
- Projects on planning and sectoral action
- National consultants to build capacity and coordinate response
- Engagement of key players under sectoral hubs
- Additional advocacy tools under the CCAC Methane Flagship
- Supporting GMP communication and events



METHANE FLAGSHIP

Goals:

1. Support high level commitments *(with Givvi)*
2. Foster action in key organisations *(e.g. IGOs, philanthropy)*
3. Raise awareness
4. Showcase action in sectors + planning
5. Develop policy tracker
6. Encourage scaled-up financing



Katie Ross,
Senior Associate,
World Resources Institute





Panel Discussion

Next Steps

- Tentative plans to meet in the new year to develop Subcommittee Action Plan
- Encourage participation of additional Partner Country delegates across the three subsectors (agriculture, municipal solid waste, municipal wastewater)
 - Country Delegates and Project Network members are encouraged to join
- Share relevant tools, resources, and events that can be promoted through Biogas Toolkit and GMI's events webpage and social media.
- Meeting materials will be sent out via the GMI mailing list in the coming weeks

Thank you!



Questions? Please email
secretariat@globalmethane.org