

Memorandum of Understanding on Zero-Emission Medium- and Heavy-Duty Vehicles

The signatories to this Memorandum of Understanding (MOU), hereinafter referred to as the “Participants”, in their collective ambition to accelerate zero-emission medium- and heavy-duty vehicles (ZE-MHDVs),¹ recognizing that:

- Transport is a large and fast growing source of greenhouse gas (GHG) emissions globally, and that MHDVs are a large source of transport sector GHG emissions;
- Current MHDVs are a major source of local air pollutants, including nitrogen oxides, particulate matter, and toxic air emissions, and that these pollutants negatively impact urban air quality and human health, disproportionately affecting disadvantaged communities located near freight corridors, ports and distribution centers;
- ZE-MHDVs offer a viable pathway to decarbonize the road transport sector as technology has advanced greatly over the last decade and can deliver its full potential through aligned global ambition, enabling implementation action, and market incentives;
- ZE-MHDVs are essential to reducing transport emissions, mitigating climate change, improving air quality, reducing the use of fossil fuels and energy costs;
- Commercial deployment of ZE-MHDVs remains limited, and further advancements in the state of technology and deployment stand to benefit from global collaboration and coordination, which can also result in accelerated private sector investment in the ZE-MHDV sector;
- Investments in ZE-MHDVs could help to stimulate economic growth by creating new jobs in the zero-emission vehicle and charging/fueling equipment manufacturing, supply chain, energy and service sectors;
- It is strategically important to decarbonize MHDVs and urgently begin the adoption of ZE-MHDVs given long fleet turn-over times;
- Clean mobility solutions aspire to improve public health and work toward meeting our shared climate goals by providing clean, reliable, safe, and affordable mobility solutions to everyone; and
- The adoption of ZE-MHDVs might require different approaches and enabling conditions in different parts of the world.

Have reached the following understanding:

1. OVERALL AMBITION

The Participants intend to work together to identify viable pathways and supportive implementation action for deployment of ZE-MHDVs and related infrastructure that enable ZE-MHDVs to reach 30% of sales of new MHDVs by 2030, as well as enable a full transition to ZE-MHDVs in new fleets by 2040 to facilitate achievement of net-zero carbon emissions by 2050. The Participants are invited to publicly share a higher ambition when signing this MOU where applicable.

¹ For purposes of this MOU, MHDVs are vehicles with gross vehicle weight above 3,500 kilograms used for freight and passenger transport. ZE-MHDVs are MHDVs with zero tailpipe emissions.

2. MOU IMPLEMENTATION

2.1 The Participants plan to meet annually to discuss progress and share experiences to accelerate the deployment of ZE-MDHVs.

2.2 The Participants intend to share plans with current and potential actions to support the ambitions described in Section 1 of this MOU, and to share MHDV registration data annually, within available capabilities.

2.3 The Participants plan to participate in the Global Commercial Vehicle Drive to Zero program and campaign of the Clean Energy Ministerial's Electric Vehicle Initiative, which serves as a forum for coordination, collaboration and information sharing on ZE-MHDVs. Through their participation in the Global Commercial Vehicle Drive to Zero forum, the Participants intend to facilitate the development of plans and consolidate Participants' annually reported MHDV registration data to understand progress made and discuss ways to accelerate progress where needed.

3. ADDITIONAL PROVISIONS

3.1 This MOU becomes effective for each Participant upon its signature.

3.2 This MOU is not an international agreement and does not create any legally binding rights or obligations between or among the Participants. In addition, implementation of the ambitions stated in this MOU is within the discretion of each Participant and is not conditioned upon reciprocal actions by other Participants.

3.3 Each Participant intends to conduct any cooperative activities under this MOU in accordance with applicable laws, regulations and policies to which it is subject.

3.4 The Participants may discontinue participation in this MOU at any time by providing six months advance written notice to the other Participants.

3.5 This MOU may be modified by mutual written decision of all Participants.

3.6 Additional Participants may join this MOU after its announcement at COP26.

Finalized and open for signature by each Representative on the 15th of November of 2022, in the English language.

Representing the Government of Aruba:

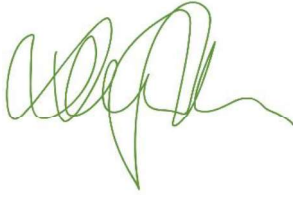


Ursell Arends
Minister of Transport, Integrity, Nature
and Senior Affairs



Geoffrey Wever
Minister of Economic Affairs, Communication
and Sustainable Development

For AUSTRIA:



Leonore Gewessler

Federal Minister for Climate Action, Environment, Energy, Mobility, Innovation and
Technology

27th of October 2021

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For Zakia Khattabi:



Federal Minister of Climate, Environment,
Sustainable Development and Green Deal

For Canada:

A handwritten signature in blue ink, appearing to read 'Jonathan Wilkinson', is written over a horizontal line.

Jonathan Wilkinson - Minister of Natural Resources

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For the Government of Cabo Verde:



Alexandre Monteiro

Ministério da Indústria, Comércio e Energia
Cabinete do Ministro

Minister of Industry, Trade and Energy

21 september 2023

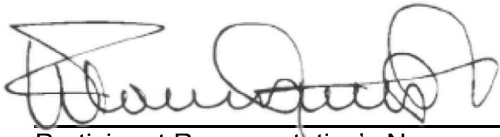
For Ministry of Energy, Chile:



Juan Carlos Jobet
Bi-minister of Energy and Mining

October 28th, 2021

For [NAME OF PARTICIPANT]: WILLIAM FERNANDO CAMARGO TRIANA

A handwritten signature in black ink, appearing to read 'William Camargo Triana', written over a horizontal line.

Participant Representative's Name and Title

Date 5th of december of 2023
Minister of Transport

For Costa Rica:



Franz Tattenbach
Minister of Environment and Energy
April 12, 2024



CÔTE D'IVOIRE :

M. ABOU BAMBA

Ministre de l'Environnement et de la Transition Ecologique

Abidjan, le 17 Avril 2026

¹ For purposes of this MOU, MHDVs are vehicles with gross vehicle weight above 3,500 kilograms used for freight and passenger transport. ZE-MHDVs are MHDVs with zero tailpipe emissions.

For [NAME OF PARTICIPANT]:



Participant Representative's Name and Title
Date

Curaçao

Charles Cooper
Minister of Traffic, Transportation
and Urban Planning
15 November 2022

For Denmark:

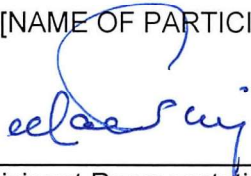
A handwritten signature in blue ink, appearing to be 'Benny Engelbrecht', is written over the printed name.

Benny Engelbrecht – Minister for Transport of the Kingdom of Denmark

31 October 2021

For [NAME OF PARTICIPANT]:

DOMINICAN REPUBLIC



Participant Representative's Name and Title
Date

MAX PUIG

VICEPRESIDENTE EJECUTIVO
CONSEJO NACIONAL PARA EL
CAMBIO CLIMÁTICO

15 NOVEMBER 2022

For Ethiopia



Dhenge Boru Kosi
State Minister



For [NAME OF PARTICIPANT]:

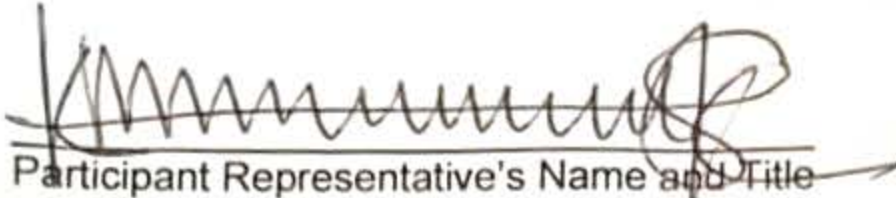
A handwritten signature in black ink, appearing to read 'T. Harakka', written in a cursive style.

Timo Harakka
Minister of Transport and Communications, Finland

28 October 2021

Ofori Asigumah
Hon. Transport Minister.
Ghana

For [NAME OF PARTICIPANT]:


Participant Representative's Name and Title
Date

For ICELAND:



Sigurður Ingi Jóhannsson
Minister of Infrastructure
21. November 2023

For [NAME OF PARTICIPANT]:



Participant Representative's Name and Title

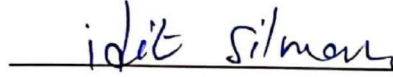
Date 08/11/2022

MINISTER OF
TRANSPORT
EAMON RYAN

For Israel:



Brigadier General (Res.) Miri Regev
Minister of Transport and Road Safety
November 27th, 2023



Idit Silman
Minister of Environmental Protection
November 27, 2023

For the Principality of Liechtenstein:



Dr. Graziella Marok-Wachter, Minister of
Infrastructure

Vaduz, November 16th 2022

For the Republic of Lithuania:



Marius Skuodis
Minister of Transport and Communications
of the Republic of Lithuania
17 November 2022

For the Grand-Duchy of Luxembourg:



François BAUSCH
Deputy Prime Minister,
Minister for Mobility and Public Works,
8th November, 2021

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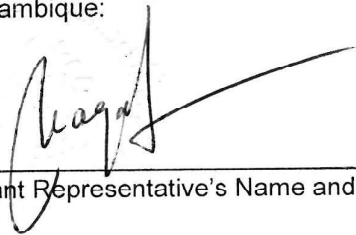
Finalized and open for signature by each Participant on the 5th of October of 2021, in the English language.

• For the Government of Montenegro:



Minister of Transport, Maja Vukićević
24.02.2025

For Mozambique:

A handwritten signature in black ink, appearing to read 'Magala', is written over a horizontal line.

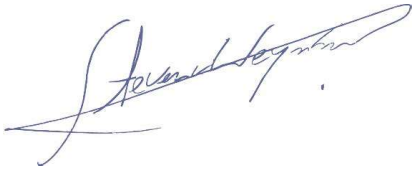
Participant Representative's Name and Title

Date

Mateus Magala

Minister of Transports and Communications of Mozambique

For the Netherlands:

A handwritten signature in blue ink, appearing to read 'Steven van Weyenberg', is written above a horizontal line.

Steven van Weyenberg, Secretary of State of Infrastructure and Water Management
November 3, 2021

For NEW ZEALAND:

A handwritten signature in blue ink, appearing to read 'M. Woods', with a stylized flourish at the end.

Hon Dr Megan Woods
Minister of Energy and Resources
4 November 2021

For Norway:

A handwritten signature in black ink, reading "Jon-Ivar Nygård". The signature is written in a cursive style with a large initial 'J' and 'N'.

Minister of Transport, Jon-Ivar Nygård

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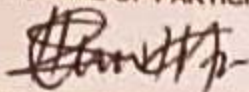
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For Peru:



Raúl Ricardo Pérez-Reyes Espejo
Minister of Transport and Communications
April 08, 2025

For [NAME OF PARTICIPANT]



Participant Representative's Name and Title
Date

HON. SIMO KILEPA, MP
MINISTER FOR ENVIRONMENT,
CONSERVATION AND CLIMATE CHANGE

For PORTUGAL:

Jorge Moreno Delgado

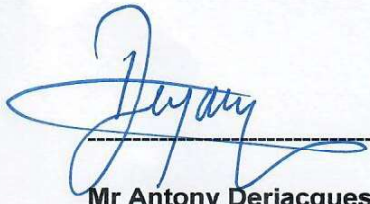
Secretary of State for Urban Mobility

18 May 2022

For Scottish Government:

A handwritten signature in black ink, appearing to read 'Stuart Greig', written in a cursive style.

Stuart Greig, Director of Low Carbon Economy, Transport Scotland, Scottish Government,
2 November 2021



**Mr Antony Derjacques
Minister for Transport
Republic of Seychelles**



Participant Representative's Name and Title
Date: 12th April 2024

For [NAME OF PARTICIPANT]:

Participant Representative's Name and Title
Date



063

For [NAME OF PARTICIPANT]:

Bern 19. November 2021

S. Sommar

Participant Representative's Name and Title
Date

Eidg. Departement für Umwelt
Verkehr, Energie und Kommunikation
Bundeshaus Nord
3003 Bern

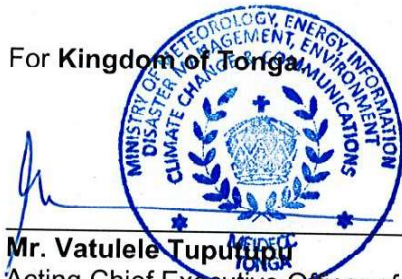
For Ministry of Environment, Forest Resources,
Coastal Protection and Climate Change of Togo :



Prof. Komla Dodzi KOKOROKO, Minister of
Environment, Forest Resources, Coastal Protection
and Climate Change

DATE 04 DEC 2025

For Kingdom of Tonga



Mr. Vatulele Tuputupu

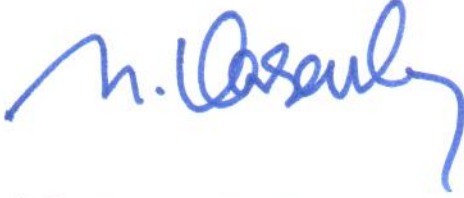
Acting Chief Executive Officer of Meteorology, Energy, Information, Disaster Risk Management, Environment, Climate Change and Communication

Date:

09/05/24

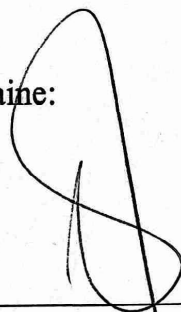
For [NAME OF PARTICIPANT]:

Ministry of Industry and Technology
Republic of Turkey



H.E. Mr. Mustafa VARANK
Minister of Industry and Technology
05.11.2021

For Ukraine:

A handwritten signature in black ink, consisting of a large loop and a vertical stroke, positioned above a horizontal line.

Oleksandr Kubrakov
Minister of infrastructure of Ukraine
November 01, 2022

For the United Kingdom of Great Britain and Northern Ireland

A handwritten signature in dark ink, appearing to be 'Trudy Harrison', written over a horizontal line.

02/11/2021

Trudy Harrison MP, Parliamentary Under Secretary of State for Transport, UK

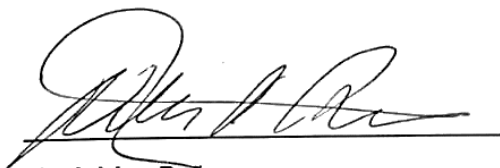
FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA



Jennifer Granholm
Secretary
U.S. Department of Energy

11/16/2022

Date

A handwritten signature in black ink, appearing to read 'Adrian Peña', is written over a horizontal line.

Mr. Adrian Peña
Minister of Environment
República Oriental del Uruguay

November 8th 2021

For Welsh Government:

A handwritten signature in black ink, appearing to read 'Lee', is centered within a light gray rectangular box.

Lee Waters MS
Deputy Minister for Climate Change
Welsh Government
8 November 2021



MINISTÉRIO DO MEIO AMBIENTE E MUDANÇA DO CLIMA
GABINETE DA MINISTRA

MEMORANDO DE ENTENDIMENTO

**MEMORANDO DE ENTENDIMENTO
SOBRE VEÍCULOS MÉDIOS E PESADOS
DE EMISSÃO ZERO.**

PREÂMBULO

Os signatários deste Memorando de Entendimento - MoU, doravante referidos como os “Participantes”, em sua ambição coletiva de acelerar a adoção de Veículos Médios e Pesados de Emissão Zero - ZE-MHDVs, reconhecem que:

O transporte é grande e crescente fonte de emissões de Gases de Efeito Estufa - GEE globalmente, e os Veículos Médios e Pesados - MHDVs são uma grande fonte de emissões de GEE no setor de transporte;

Atualmente, os MHDVs são fontes significativas de poluentes do ar locais, inclusive óxidos de nitrogênio, material particulado e emissões tóxicas, os quais impactam negativamente a qualidade do ar urbano e a saúde humana, afetando desproporcionalmente comunidades vulneráveis situadas próximas a corredores de carga, portos e centros de distribuição;

Os ZE-MHDVs oferecem caminho viável para descarbonização do setor de transporte rodoviário, à medida que a tecnologia avançou consideravelmente na última década e pode alcançar seu pleno potencial por meio de ambição global alinhada, ação de implementação e incentivos de mercado;

Os ZE-MHDVs são essenciais para reduzir as emissões do transporte, mitigar a mudança do clima, melhorar a qualidade do ar, além de reduzir o uso de combustíveis fósseis e de custos de energia;

O uso comercial de ZE-MHDVs ainda é limitado, e avanços adicionais no estado da tecnologia e na implementação podem se beneficiar da colaboração e coordenação global, o que também pode resultar em investimentos acelerados do setor privado no setor ZE-MHDV;

Investimentos em ZE-MHDVs podem ajudar a estimular o crescimento econômico por meio da criação de novos empregos na fabricação de veículos de emissão zero e equipamentos de carregamento/abastecimento, na cadeia de suprimentos, no setor de energia e de serviços;

É estrategicamente importante descarbonizar os MHDVs e iniciar urgentemente a adoção de ZE-MHDVs, em razão do longo tempo de rotatividade da frota;

Soluções de mobilidade limpa visam a melhorar a saúde pública e a trabalhar para alcançar nossas metas climáticas compartilhadas, oferecendo soluções de mobilidade limpas, confiáveis, seguras e acessíveis a todos; e

A adoção de ZE-MHDVs pode exigir abordagens e condições habilitadoras diferentes em várias partes do mundo.

Chegaram ao seguinte entendimento:

**Cláusula 1ª
Ambição Geral**

1. Os Participantes pretendem trabalhar juntos para identificar caminhos viáveis e ações de implementação de apoio à adoção de ZE-MHDVs e de infraestrutura relacionada, permitindo que os ZE-MHDVs alcancem 30% (trinta por cento) das vendas de novos MHDVs até 2030, além de possibilitar transição total para ZE-MHDVs nas novas frotas até 2040, facilitando a realização de emissões líquidas de

carbono zero até 2050. Os Participantes são convidados a compartilhar publicamente ambição maior ao assinar este MoU, quando aplicável.

Cláusula 2ª **Implementação do MoU**

2.1 Os Participantes planejam reunir-se anualmente para discutir o progresso e compartilhar experiências para acelerar a adoção de ZE-MHDVs.

2.2 Os Participantes pretendem compartilhar planos com ações atuais e potenciais para apoiar as ambições descritas na Cláusula 1ª deste MoU, bem como compartilhar dados de registro de MHDVs anualmente, dentro das capacidades disponíveis.

2.3 Os Participantes planejam participar do Programa “*Global Commercial Vehicle Drive to Zero*” e da campanha “*Clean Energy Ministerial’s Electric Vehicle Initiative*”, que serve como fórum de coordenação, colaboração e informação sobre ZE-MHDVs. Por meio de sua participação no fórum “*Global Commercial Vehicle Drive to Zero*”, os Participantes pretendem facilitar o desenvolvimento de planos e consolidar os dados de registro de MHDVs relatados anualmente pelos Participantes para entender o progresso realizado e discutir maneiras de acelerar o progresso quando necessário.

Cláusula 3ª **Disposições Adicionais**

3.1 Este MoU entra em vigor para cada Participante a partir da sua assinatura.

3.2 Este MoU não é um acordo internacional e não cria direitos ou obrigações legalmente vinculativos entre os Participantes. Além disso, a implementação das ambições declaradas neste MoU é discricionária para cada Participante e não está condicionada a ações recíprocas por outros Participantes.

3.3 Cada Participante pretende conduzir quaisquer atividades cooperativas sob este MoU de acordo com as leis, regulamentos e políticas aplicáveis referentes ao assunto.

3.4 Os Participantes podem descontinuar a participação neste MoU a qualquer momento, mediante notificação escrita com seis meses de antecedência aos outros Participantes.

3.5 Este MoU pode ser modificado por decisão mútua por escrito de todos os Participantes.

3.6 Participantes adicionais podem aderir a este MoU após seu anúncio na COP26.

Finalizado e aberto para assinatura para cada Participante em 5 de outubro de 2021, na língua inglesa.

MARINA SILVA

Ministra de Estado do Meio Ambiente e Mudança do Clima



Documento assinado eletronicamente por **Marina Silva, Ministra de Estado do Meio Ambiente e Mudança do Clima**, em 05/03/2026, às 14:53, conforme horário oficial de Brasília, com fundamento no [Decreto nº 10.543, de 13 de novembro de 2020](#).



A autenticidade deste documento pode ser conferida no site http://sei.mma.gov.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0, informando o código verificador **2238014** e o código CRC **58B76345**.



REPUBLIC OF CROATIA
Ministry of the Sea,
Transport and Infrastructure
Class: 910-01/22-01/137
Sig.No.: 530-08-1-2-22-2
Zagreb 15 November 2022.



Kingdom of the Netherlands
Ministry of the Infrastructure and Water Management
Mrs. Vivien Heijnen, Minister for the Environment

SUBJECT: Memorandum of Understanding on Zero-Emission Medium and Heavy Duty Vehicles

Following your initiative to accelerate the global decarbonisation of road transport, we would like to inform you that Ministry of the Sea, Transport and Infrastructure supports the overall ambition of the Memorandum of Understanding on Zero-Emission Medium and Heavy Duty Vehicles concerning the identification of the most appropriate model for the deployment of zero-emission medium- and heavy duty vehicles (ZE-MHDVs) and related infrastructure that enable ZE-MHDVs to reach 30% of sales of new MHDVs by 2030, as well as to enable a full transition to ZE-MHDVs in new fleets by 2040 in order to facilitate achievement of net-zero carbon emissions by 2050.

We are open for the coordination, collaboration and information sharing under MoU in order to ensure global sustainable roads with ZE-MHDVs. Herewith, we confirm signature of the MoU.

Yours sincerely,

DEPUTY PRIME MINISTER AND MINISTER

Oleg Butković



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- Current MHDVs are a major source of local air pollutants, including nitrogen oxides, particulate matter, and toxic air emissions, and that these pollutants negatively impact urban air quality and human health, disproportionately affecting disadvantaged communities located near freight corridors, ports and distribution centers;
- ZE-MHDVs offer a viable pathway to decarbonize the road transport sector as technology has advanced greatly over the last decade and can deliver its full potential through aligned global ambition, enabling implementation action, and market incentives;
- ZE-MHDVs are essential to reducing transport emissions, mitigating climate change, improving air quality, reducing the use of fossil fuels and energy costs;
- Commercial deployment of ZE-MHDVs remains limited, and further advancements in the state of technology and deployment stand to benefit from global collaboration and coordination, which can also result in accelerated private sector investment in the ZE-MHDV sector;
- Investments in ZE-MHDVs could help to stimulate economic growth by creating new jobs in the zero-emission vehicle and charging/fueling equipment manufacturing, supply chain, energy and service sectors;
- It is strategically important to decarbonize MHDVs and urgently begin the adoption of ZE-MHDVs given long fleet turn-over times;
- Clean mobility solutions aspire to improve public health and work toward meeting our shared climate goals by providing clean, reliable, safe, and affordable mobility solutions to everyone; and
- The adoption of ZE-MHDVs might require different approaches and enabling conditions in different parts of the world.

Have reached the following understanding:

1. OVERALL AMBITION

The Participants intend to work together to identify viable pathways and supportive implementation action for deployment of ZE-MHDVs and related infrastructure that enable ZE-MHDVs to reach 30% of sales of new MHDVs by 2030, as well as enable a full transition to ZE-MHDVs in new fleets by 2040 to facilitate achievement of net-zero carbon emissions by 2050. The Participants are invited to publicly share a higher ambition when signing this MOU where applicable.





2. MOU IMPLEMENTATION

- 2.1 The Participants plan to meet annually to discuss progress and share experiences to accelerate the deployment of ZE-MDHVs.
- 2.2 The Participants intend to share plans with current and potential actions to support the ambitions described in Section 1 of this MOU, and to share MHDV registration data annually, within available capabilities.
- 2.3 The Participants plan to participate in the Global Commercial Vehicle Drive to Zero program and campaign of the Clean Energy Ministerial's Electric Vehicle Initiative, which serves as a forum for coordination, collaboration and information sharing on ZE-MHDVs. Through their participation in the Global Commercial Vehicle Drive to Zero forum, the Participants intend to facilitate the development of plans and consolidate Participants' annually reported MHDV registration data to understand progress made and discuss ways to accelerate progress where needed.

3. ADDITIONAL PROVISIONS

- 3.1 This MOU becomes effective for each Participant upon its signature.
- 3.2 This MOU is not an international agreement and does not create any legally binding rights or obligations between or among the Participants. In addition, implementation of the ambitions stated in this MOU is within the discretion of each Participant and is not conditioned upon reciprocal actions by other Participants.
- 3.3 Each Participant intends to conduct any cooperative activities under this MOU in accordance with applicable laws, regulations and policies to which it is subject.
- 3.4 The Participants may discontinue participation in this MOU at any time by providing six months advance written notice to the other Participants.
- 3.5 This MOU may be modified by mutual written decision of all Participants.
- 3.6 Additional Participants may join this MOU after its announcement at COP26.

Finalized and open for signature by each Participant on the 5th of October of 2021, in the English language.

For México:

José Luis Samaniego Leyva

Deputy Minister for Sustainable Development and Circular Economy

Ministry of Environment and Natural Resources

September 10, 2025

