CALGARY 2022 CANADA

FEBRUARY 7–11 | 7–11 FÉVRIER | 7–11 DE FEBRERO

The Sustainable Future for HDM-4

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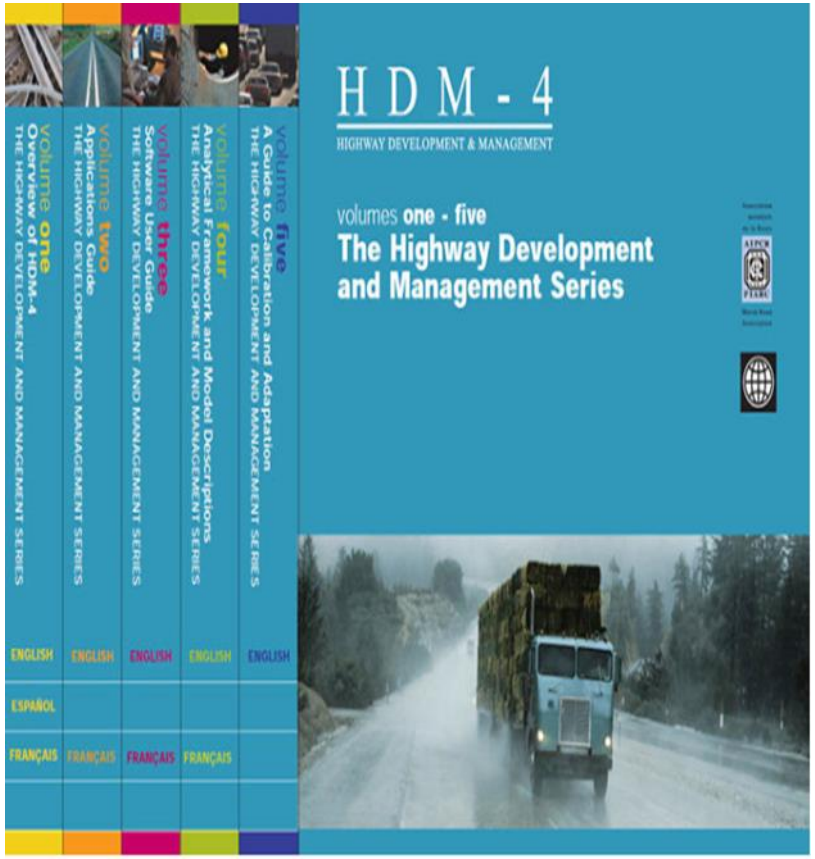
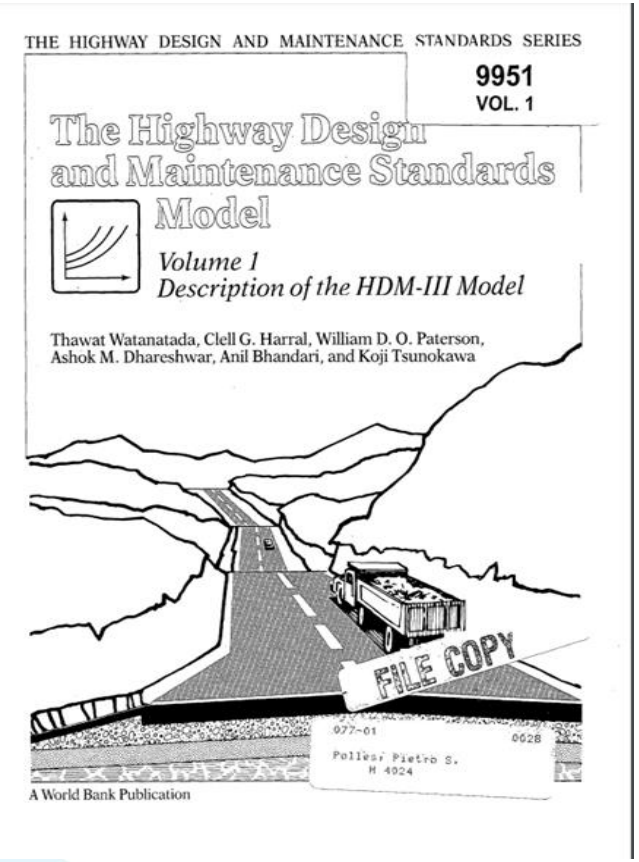
OUTLINE OF THE PRESENTATION

- The Need for Change
- The Adopted Approach
- The First Steps



1. The Need for Change



The first move towards producing a road project appraisal model was made in 1968 by the World Bank, in conjunction with the Transport and Road Research Laboratory (TRRL);

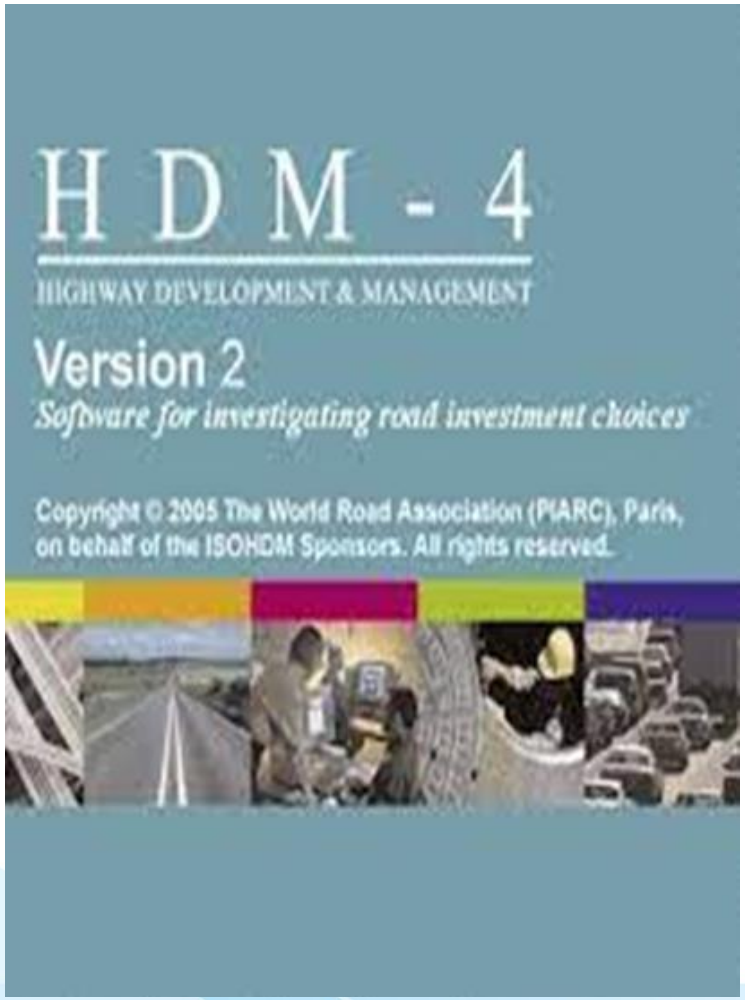
Resulting Highway Cost Model (HCM) in 1971 was a considerable advance over other models used for examining the interactions between road work costs and vehicle operation costs;

A major field study was undertaken in Kenya (1971-75) by the same partners led to the Road Transport Investment Model (RTIM) for developing countries in 1977, and the HCM model to become Highway Design and Maintenance Standards model in 1979 (HDM-I) – Both based on a mainframe;

Further work in a number of countries (Caribbean, India, Brazil) to extend the geographic scope of the models, led to the RTIM2 model and HDM-III in 1987 – both PC based;

Further development led to HDM-PC (1989), HDM-Q (1993) and HDM-Manager (1994).

1. The Need for Change



By 1993, the models had been extensively used, but there was a need to incorporate the extensive research that had been undertaken over the previous ten years.

Moreover, whilst the models had been mostly used in developing countries, industrialized countries had started to make use of the models. This resulted in the need for additional capabilities to be introduced.

The International Study of Highway Development and Management Tools (ISOHDM) was set up in 1993 to extend the scope of HDM-III.

This led to the development of HDM-4 version 1 in 1999, and HDM-4 Version 2 in 2005.

1. The Need for Change

Since 2005, the functional demands required of the HDMM have grown including *inter alia*:

- The model does not allow for the Value of Time (VoT) parameters to grow in real terms;
- The model does not allow for the Value of Mortality and Morbidity to grow in real terms;
- No consideration of the resilience of the road network;

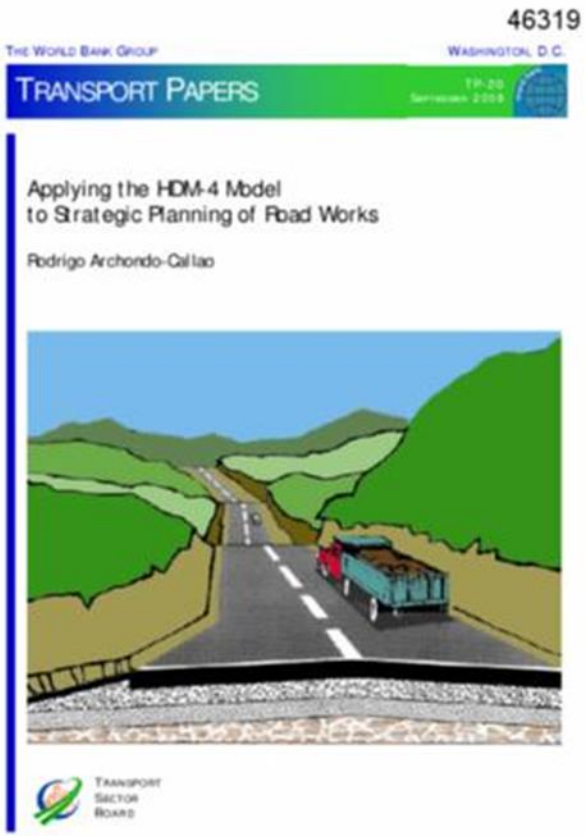
1. The Need for Change

Difficult to calculate an estimate of the change in emissions of Greenhouse Gases (GHG) from an intervention;

No equal consideration of road safety benefits, or NMT/pedestrianization interventions;

No possibility of using the software for tertiary roads; and

No estimation of the wider economic benefits of projects/programs.



1. The Need for Change

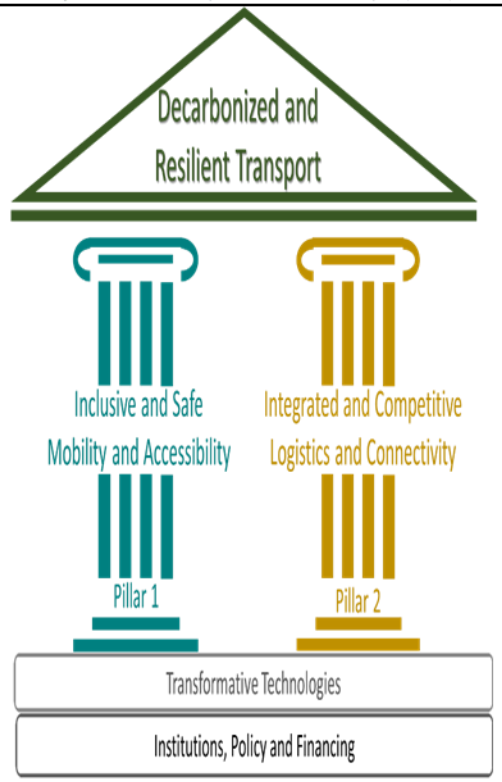
In addition to the change in functional demands, there are other reasons why an update is timely:

- The current license arrangement ends in July of 2022;
- The IP rights are not entirely clear;
- The model is currently written in C++, for a PC based platform; and
- Some possible revenue streams are being missed.

2. The Adopted Approach

2. The Adopted Approach : ‘The Vehicle’

Figure 1. Global Facility to Decarbonize Transport (GFDT)



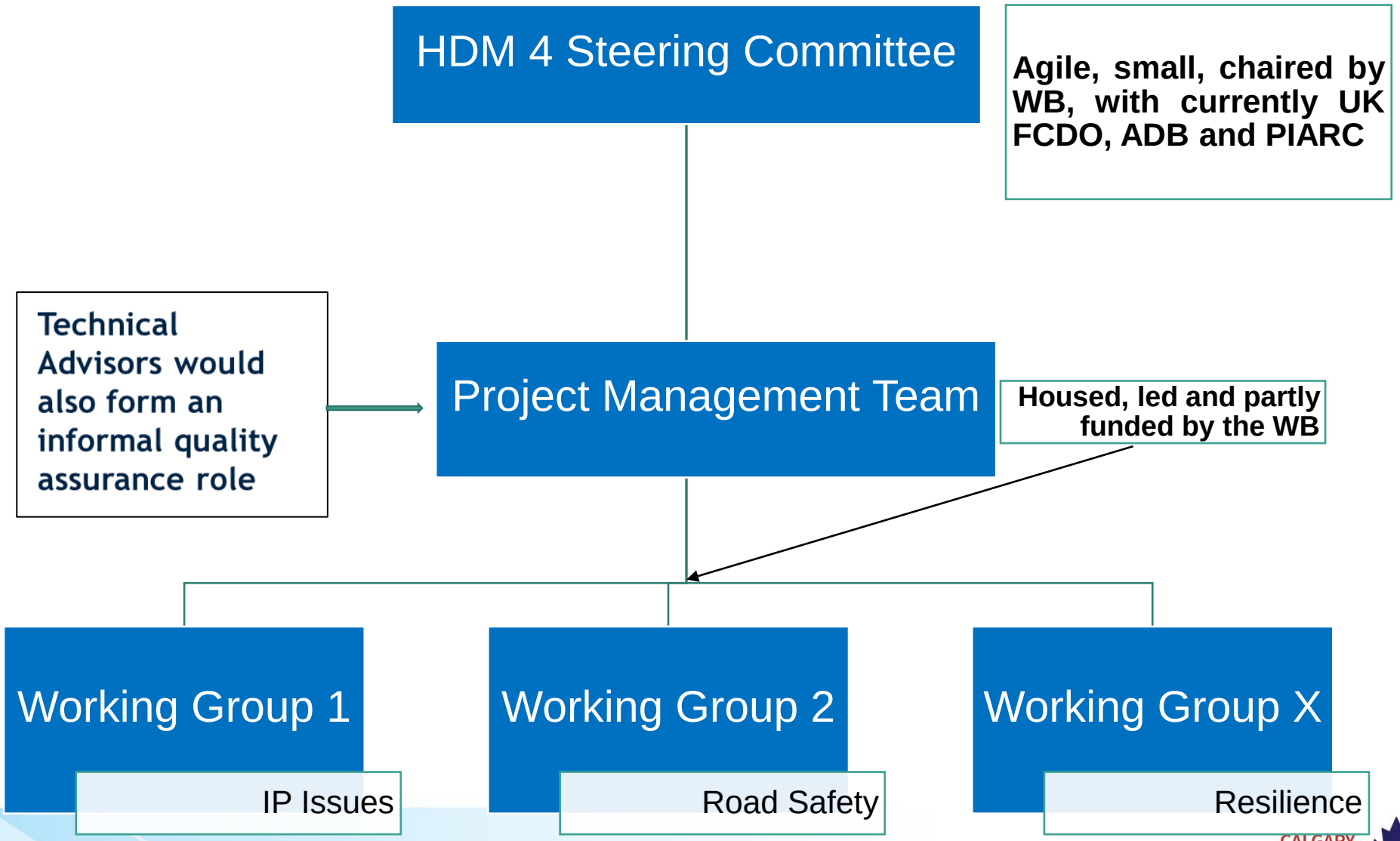
The Global Facility to Decarbonize Transport (GFDT) –a new Multi donor Trust Fund (MDTF);

Provides the World Bank with a delivery modality for catalytic funding to formulate, innovate, and scale up support to client countries to decarbonize transport and build resilience, whilst meeting growing mobility needs;

Improving the management, planning, sustainability and resilience of the road network is central to a low-carbon transport system; and

The GFDT is the ‘vehicle’ that we will use to handle the funding of the upgrading/extending/piloting and rolling out of ‘HDMM- Version 5’.

2. The Adopted Approach : Governance



3. The First Steps

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Initial work funded by the UK FCDO under the HVT program (IMC WorldWide and Hodos Media);

Work included *inter alia* a review of need, the perspective of the clients, potential improvements, outline business case;

Estimated Cost of upgrade approx. US$3-5 million including technical improvements, platform changes, piloting, training and roll-out;

WB, FCDO, PIARC have committed funding to commence the process;

Other commitments have been made to provide contributions in parallel, or in kind (e.g. ADB, CCG, SANRAL).

3. The First Steps

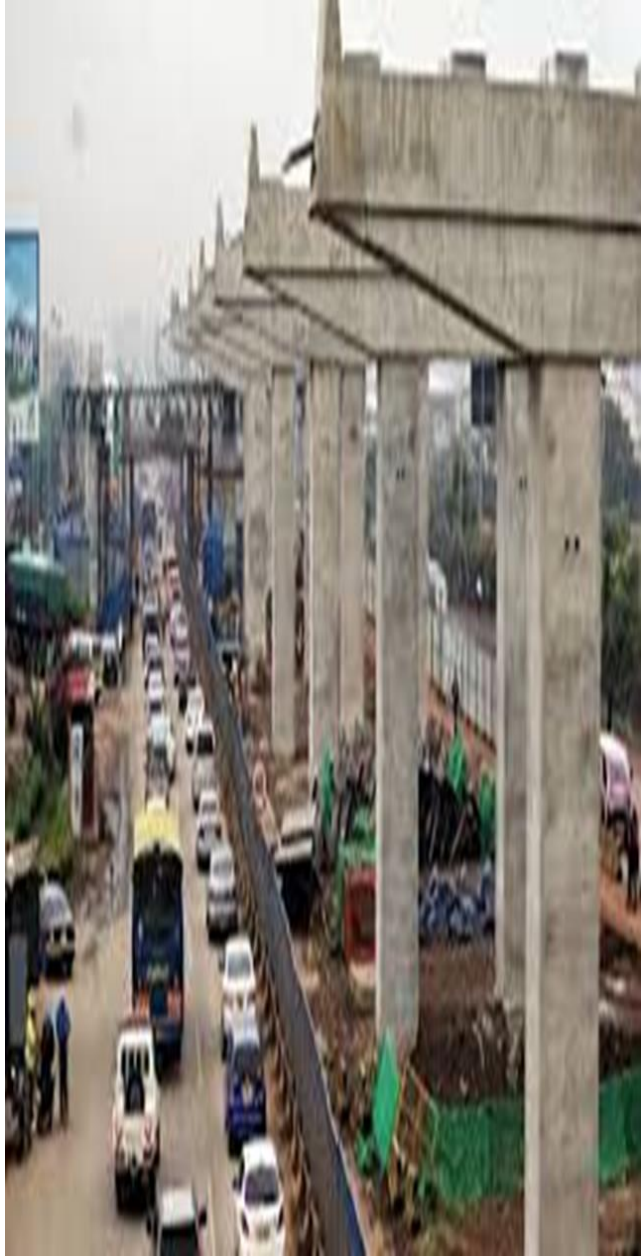
The following tasks have already started:

a. Partners have agreed no break of service in the transitional period between the end of the current licence period and going live with the new institutional model and the updated HDM-4 model;

b. Initial discussions over scoping and costing of the legal review to clarify the IP rights of HDM-4 now, and ensure that there are no issues in the transfer of those rights to the prospective new body;

c. Work to inform a major upgrade of the Economic Appraisal of Transport Projects guidelines has started (funded entirely by the WB):

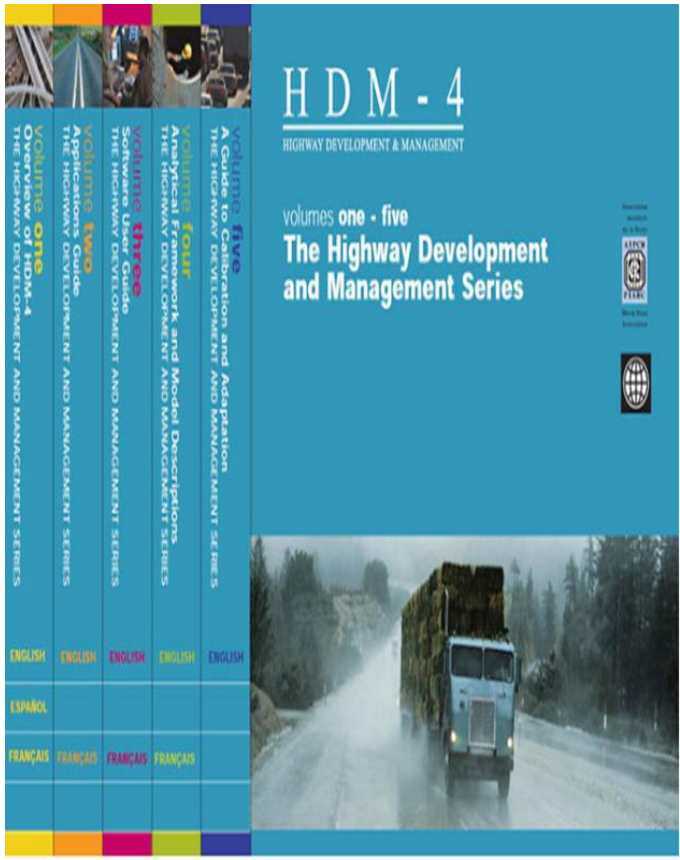
- A meta-analysis of the Value of Time studies globally, has started (so if anyone has undertaken any recent work (last 10-15 years please share get in touch); and
- Similar review and guidance on Wider Economic Benefits in LDCs under discussion.



3. The First Steps

The first Annual Workplan has been prepared in draft, and will be sent to SC members shortly for approval;

- Conduct a comprehensive review of improvements and end of tailpipe developments already undertaken by RAs (e.g. SANRAL) and MDBs (on GHGs and safety) as inputs into the next stage;
- Identify the IT needs, costs and timelines to convert the architecture of the model, as viable, to a new software platform hosted as a Software as a Service (SaaS) proposition within the cloud; and
- Identify and confirm the priority technical work and funding resources available in all the technical areas.
- Establish technical committees for each of the key priority work areas (scope, resilience, safety, GHG emissions etc.) consistent with the agreed work program and funding availability.



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