MRV of Transport NAMAs

Sudhir Sharma

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Sudr@dtu.dk

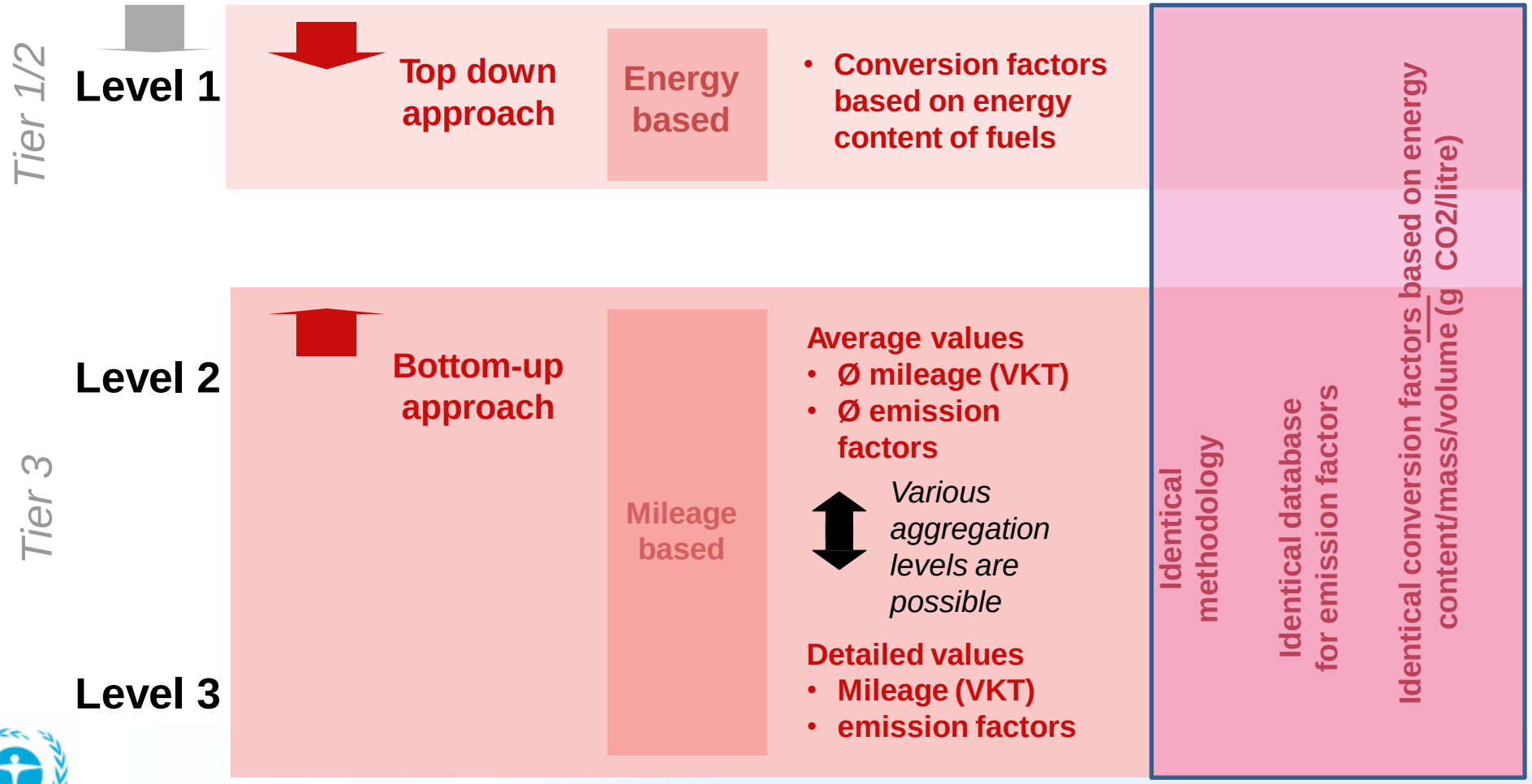
Avoid - Shift - Improve

- Reducing Emissions in Transport Sector involves three broad approaches
  - **Avoid**/reduce need for travel - In the realm of human settlement planning.
  - **Shift/**Maintain share of environmentally friendly (low GHG emission) modes of transport - public transport, non-motorized transport, long distance rail, etc.
  - **Improve** the energy efficiency of the transport modes and vehicle technology.

MRV of Transport sector NAMAs

- MRV a management tool to evaluate and assess the effectiveness and success of interventions to achieve a defined objective.
- In context of transport sector (or any sector) the data collection has multiple benefits
  - Helps better planning for delivery of transport services - Urban/long distance;
  - Evaluation of local environmental impacts (air pollution) and thus management of the issue;, and
  - Off course, the assessment of GHG impacts.
- Thus MRV system for Transport can serve multiple benefits - assessing SD and GHG impacts.

Different levels of calculation of transport-related GHG emissions and air pollutants



Source: INFRAS.

Dependency of traffic activities and emission factors (bottom-up)

Emission = Traffic Activity (vkm) x Emission Factor (g/vkm)

- emission factors have to fit to the traffic activity data and vice versa

- traffic data should ideally be given for:
  - vehicle category (LDV, HDV, bus, train, etc.)
  - vehicle size
  - fuel type
  - technology (emission legislation classes) or vehicle age
  - load factor (trucks)
  - road gradient
  - traffic situation / driving cycles

- **Tier 3 approach (*customisation*):** bottom-up logic for policy accounting (country-specific conditions)

→ as policies and measures have an impact on either
  - *travel demand* (destination and mode choice),
  - *technology used*, or
  - *fleet composition*

Mexico's Road Freight Transport NAMA

Objective: Reduce emissions in Mexico's Road Freight Transport sector with a focus on small and medium-sized enterprises.

Cooperation between the Ministry of Communication and Transport (SCT), the Ministry of Environment and Natural Resources (SEMARNAT) and GIZ.

In order to modernise the fleet and promote efficient usage, various activities are being supported:

1. Scrappage scheme to renew the fleet
2. "Transporte Limpio" to make the existing fleet more efficient

MRV approach for road freight transport NAMA Mexico

- **Mitigation effect = baseline – NAMA scenario**
- Baseline / NAMA scenario = activity x emissions factor

  Indicators:

  - GHG: (reduced) t CO2
  - Transport: number of scrapped vehicles, vehicle age, remaining lifespan, emissions factors, distances traveled (tkm), fuel consumption, …
  - Sustainable development benefits: PM, CO, NOx, accidents, jobs, …
- Difficulties for road freight
  - Multitude of small non-homogeneous sources
  - Direct and indirect impacts
  - Many factors to be taken into account: condition of streets, driver behaviour, …

Information requirement

Old truck	• Fuel consumption • Distance traveled annually • Remaining lifespan at the time of
New truck	• Fuel consumption • Distance traveled annually
Country-specific situation	• EF: Av. in the country (tCO2/tkm) • Penetration of eco-technologies and efficiency without scrappage scheme

- Grouping of the fleet (vehicle type): C2, C3, T2, T3
- GHG reductions during remaining lifespan (of old vehicle)
  - Direct: $tkm_{old\_per\ year} \times (EF_{old} - EF_{new})$
  - Indirect: $(tkm_{new\_per\ year} - tkm_{old\_per\ year}) \times (EF_{fleet} - EF_{new})$
- GHG reductions after remaining lifespan (of old vehicle)
  - $tkm_{new\_per\ year} \times (EF_{new\ without\ NAMA} - EF_{new})$
- Data requirements:
  - $tkm_{annually}$ for each group
  - Emissions Factor (EF) for each group
  - Age and remaining lifespan of scrapped vehicles

GIZ MRV Roadmap process

Aim of this undertaking:

- lower the barriers to establish MRV
- contribute to a common understanding of elements of MRV
- facilitate developing and implementing transport NAMAs

- Establishment of an interdisciplinary expert group
- Reference document on "*How to develop a roadmap for MRV systems in the transport sector?*"
- Set of peer-reviewed *MRV Blueprints for Transport NAMAs*
- *Country Case Studies*