ADDRESSING ADDITIONALITY IN THE TRANSPORT SECTOR:

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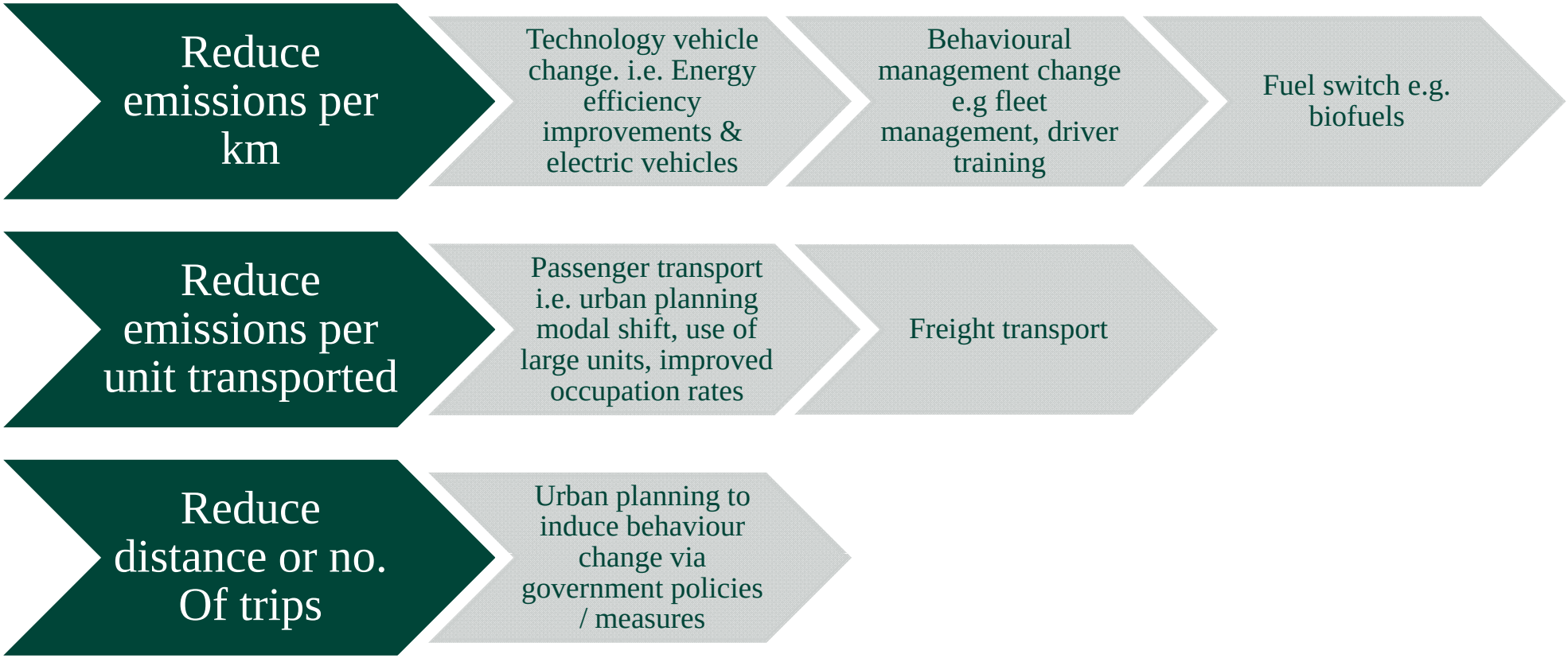
Why should we be worried about the transport sector?

- Transport contributes to approximately ¼ of the worlds energy related GHG emissions (source: IPCC report)
- Total transport energy use and carbon emissions is projected to be about 80% higher than current levels by 2030 (source IPCC report).
- Of 3014 CDM projects only 6 (0.2%) are in transport sector.There are no transport PoAs.
- Climate change is a minor factor in transport sector decision making and policy. Common goals are to achieve energy security and/or sustainable development benefits that include improvements in air pollution, congestion, access to transport facilities and recovery of expenditure on infrastructure development.
- Problem is that some transport policies can result in an increase in GHG – thus the time is ripe to target transport .

Projects that can reduce GHG emissions in transport sector



Existing methodologies for transport sector

Reduce emissions per km

- AMS III. AA – EE through retrofit
- AMS III .C – EE through retrofit (2 reg projects), 13 in validation. All use version older than version 11.
- AMS III. S – Fuel switch via retrofit

Reduce emissions per unit transported

- AM0031 – bus system (2 reg projects, 13 in validation)
- ACM0016 – mass rapid transit system
- AMS III.U – mass rapid transit system
- AM0090 – Cargo transportation

Reduce distance or no. Of trips

- No methodologies yet due to complexity of establishing baseline and leakage.

Of many obstacles for transport additionality is a critical one

- **Problem 1**: Additionality assessment has been reduced by the EB to IRR assessment. Is an obstacle for complex sectors such as transport.

- **Problem 2**: Common practice definition of LUZ in IN ACM0016 requires less than 50% of cities > 1 million (or 0.5-1 mio) LUZ definition. Most countries in the world only have 1 city of this size. Excluded projects in Latin American, Asian and African countries. Compare number of cities but instead ask how are urban trips made.

- **Problem 3**. Mandatory transporation policies. Meths not clear on how any program that is helping to achieve the greater compliance of the mandatory law should be treated when calculating the baseline.

- **Problem 4**. Non mandatory transportation policies Transport projects that are part of policy and planning interventions – integrated land use and transport planning, congestion charging, improved public transit connectivity, upgraded non-motorized transport networks –impact CO2 reductions but additionality difficult to prove.

Standardised approaches – can they ease additionality assessment in the transport sector?

New approaches	Additionality	Baseline	Boundary	Features	PoA	Transport activity benefitting
Bench-marks (BM)	There is no additionality test required for a benchmark because in beating the benchmark, the activity is acting beyond BAU	Performance benchmark expressed in t CO2 per unit of activity / output. In order to motivate action it must be set below existing performance (i.e. act to improve performance) *	Applies to a defined population which has been used to establish benchmark– similar scale, technology, environment	A benchmark does not restrict activity to a single technology A benchmark requires data from peers – plants of similar scale / technology / social / environmental setting	Suitable for PoA approach applied to other members of the benchmark population	Poss for technological interventions e.g. better engines, a variety of fuel-efficiency retrofits, vehicel or fleet energy efficiency benchmarks
Deemed savings (DS)	No impact on additionality assessment unless deemed sabing benchmark established.	Assumed rate of utilization of appliance based on survey data or expert opinion eg 3 hours per CFL	Within the geographic scope of the DS meth (national or regional)	Ex ante determination of emission reductions per unit installed with much simpler monitoring requirements**	The geographic scope of boundary suggests PoA not necessary	electric vehicles and hybrids

**Could combine multiple technologies with a matrix identifying technologies which interact & a percentage adjustment in DS where appropriate.

Slide adapted from G.Phillips presentation 2011 Sindicatum

Standardised approaches – can they ease additionality assessment in the transport sector? (cont…)

Alternative approach	Additionality	Baseline	Boundary	Features	PoA	Transport activity
Additional Technologies (AT)	Positive list of types of technologies / activities that are automatically additional – for example EE and RE at a household level. All technologies that are not common practice would be included.	Qualitatively defined in meth. Quantitatively defined based on literature or local research data	As defined in the applicability criteria of the baseline and additionality decisions	Automated additionality test and baseline determination greatly reduce transaction burden. Well suited to single technologies installed in high numbers	Not required as the positive additionality status and quantified baseline removes barriers to scalability	Use of biodiesel; transport types in least developed countries that are not common practice
Modeled baselines (MB)	Models could be used to establish a benchmark for transport sector at city level.	Modeled using approved model design combined with industry standards (	As defined in applicability criteria of model and standards (	A theoretical baseline constructed on the basis of a combination of historic data and statistically significant variables, achieving a desired level of statistical performance ()	Applicable . sophisticated models exist, but lack of baseline data from LIRs	Applied when implementing City wide PoA for transport sector

Slide adapted from G.Phillips presentation 2011 Sindicatum

Proposal 1: vehicle benchmarks: defined at city level not project level due to economics.

For a given vehicle type in country A:

1

$$\frac{\text{Tons CO2e}}{\text{kJ}} \times \frac{\text{kJ}}{\text{kg}} \times \frac{\text{kg}}{\text{Liter (kg)}} = \frac{\text{Tons } CO_2e}{\text{Liter (kg)}}$$

IPCC Guidelines | IEA National Heating Values | Fuel Volume | CO_2e Content of Fuel

2

$$\frac{\text{Tons } CO_2e}{\text{Liter (kg)}} \times \frac{\text{Liter (kg)}}{\text{km}} \times \text{km} = \text{Tons } CO_2e$$

CO_2e Content of Fuel | Average Annual Fuel Efficiency | Activity Level | Greenhouse Gas Emissions

We want to know:

3

- Vehicle Inventory
- Fuel Efficiency
- Activity Level

Questions on how to establish needed define default values for transport

- For many parameters it would be difficult to determine default values due to their high variability even within one country (e.g., occupancy rates can differ from one city to another for the same transportation mode), however certain parameters such as specific fuel consumption could be given as a default.
- Key assumptions that need to be made in defining default values - Vehicle fuel efficiencies, Reasonable classification of vehicle types, Load on main and return trips, Topography (e.g. slope), Traffic conditions (e.g. speed) , Fuel types used Define reasonably conservative assumptions (Source:L. Schneider from tool on freight)
- **Way forward ?-** Establish a global data base of transportation system defaults at regional and international level. i.e. vehicle populations and usage modes, efficiencies and emissions factors and etc.) transport projects.

Questions re. environmental integrity of benchmark

- Should an additionality threshold be established above the baseline level to ensure conservativeness?
- How often will the baseline data need to be updated?
- Should the baseline level be dynamic or fixed and periodically updated?
- How to ensure consistency between approaches applied by different countries?
- How can we account for **suppressed mobility demand or induced demand (AM31)?**
- How to account for **new transportation demand** which will occur when cities have better transport connectivity i.e. urbanization leads to increasing size of urban areas.

2: Develop new tool for to support implementation of transport policy CDM projects/PoAs

- A new tool could be introduced to ensure that levels of national support for transport projects are not reduced in ways that would undermine environmental integrity of the CDM

- This tool would be relevant for projects implementing transport technologies that rely on subsidies/fiscal incentives, such as tariffs or premiums for certain technology types or measures.

Step 1 – Automatic additionality eligibility

- If policy/measure/technology is first of its kind, then is additional.
- If simplified additionality tool is applicable it should be applied.
  - NB – recommend that the simplified additionality tool should also cover transport projects that are not in LDC or SIC provided it achieves emission reductions at a scale of no more than 20kt per year.
- If these critieria do not apply then move to step 2 for transport policy projects and step 3 for technologies.

Step 2 – for transport policy projects

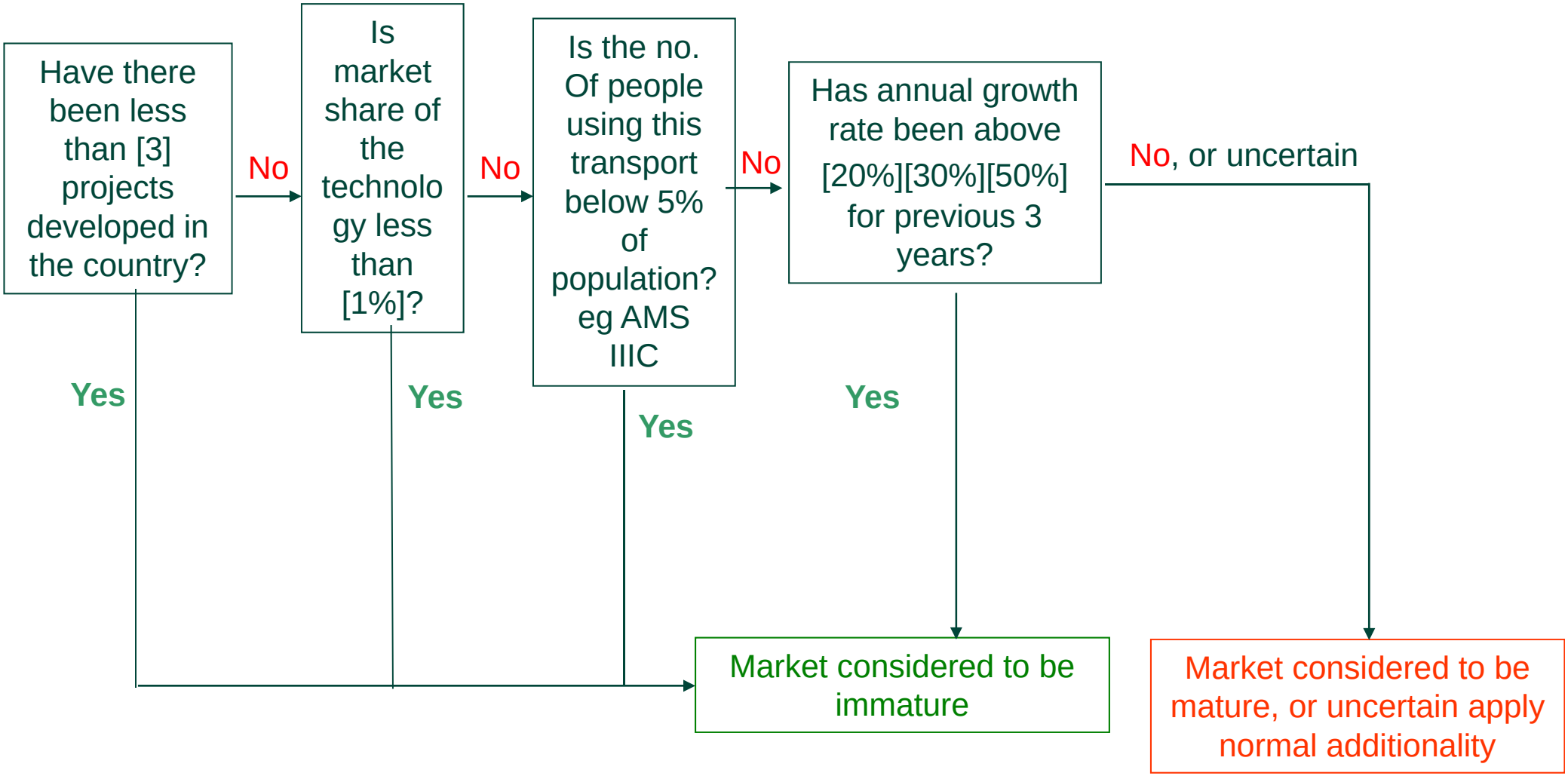
- For projects which help to better enforce a host country mandatory law/ regulation: it shall be considered as additional if the enforcement rate of the law/ regulation is below X% .
- For projects which help to better enforce a host country mandatory law/ regulation: as long as the baseline scenario does not involve government backed financial incentives to the end user, any carbon finance programs that do so should be considered additional as eventually the financial additionality of any such compliance with the mandatory regulations falls at the level of the end user.

Step 3. Technology penetration – assessment of market.

- Is the transport technology implemented in a immature country? If yes then automatically additional.
- NB – market for a technology is growing at a high rate indicates an immature market. Subsidies and tariffs to support these technologies can also be ignored.

Determining whether market is mature and assessing level of penetration in the country

How to decide if the market for a technology type in the host country is mature. When market is mature, project not automatically additional



Adapted from presentation made by J.Green Caron Resource Management

Carbon Finance AT THE WORLD BANK

Thanks for listening

Improving SSC Transport Methodologies in General

1. • **Standards/methodologies should be a one stop shop**, with clear references to all aspects or project implementation i.e. leakage para in Modalities and procedures etc.

2. • **Monitoring requirements** must be adjusted based on a consideration of the resource costs relative to the level of accuracy achieved. Monitoring of mobile sources can not be accomplished in the same way fixed sources are

3. • The **differentiation between small and large scale** types appears arbitrary. Recommend small scale & large scale meth. versions for each approved project type

4. • **Additionality requirements** are difficult to satisfy in transport projects, yet, CDM funding can genuinely affect the likelihood of a project's proceeding. Define additionality test specifically for transport projects? Additionality of programs that "improve enforcement of mandatory regulation" – definitions of enforcement & mandatory unclear.

5. • **Baseline setting** for a dispersed source of emissions. Actual emissions can be monitored for a small sample but in order to achieve scale up and the reduction in transaction costs, would be useful to consider manufacture values (deemed values) or discount factors etc.