Innovative MRV approaches in Transport Sector
Climate-KIC / PMR Workshop
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Supported by
South Pole Group – developing solutions worldwide

- 2006: Incorporation in Zurich / Switzerland
- 2012: present on all continents
- About 100 carbon professionals from 22 countries
- 2011, 2012 & 2013: Best Project Developer
- 2013: Runner-up Best Advisory Service
- Strong focus on NAMAs, MRV and design of new carbon markets

as of Sept 2013
Selected advisory references

- NAMA design targeting energy-efficiency in the Mexican SME sector
- Macro-economic assessment and modeling of price-based GHG instruments in Brazil
- Market-based Instrument design for the transport sector in Colombia
- NAMA design for power generation and end-use in Peru
- NAMA design in the agricultural and forestry sectors in Tunisia
- Summer School on Tracking progress and MRV for GHG Emission Reductions in Viet Nam
- Carbon Pricing Policy Options and Pilot Case Study for the Cement Sector in Indonesia
- Low Carbon Support to the Ministry of Finance (MoF) in Indonesia
- Carbon Farming Initiative (CFI) Knowledge Platform in Australia
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South Pole’s work package

• Identification of 2-3 business cases for innovative MRV approaches
• Builds upon previous work packages
• Looks into climate economy as a whole:
  – UNFCCC framework
    • CDM/JI
    • NAMAs
    • NMM? / FVA?
  – Other schemes
    • Emission trading schemes (e.g. EU, China)
    • Offset schemes (e.g. Gold Standard, VCS, California, Switzerland)
    • Carbon tax schemes
    • Other market-based and non-market based instruments
• Current carbon prices was the most limiting factor in the selection of the business cases
• Presentation focuses on one of the two identified cases studies in the transport sector
In the U.S. GHG emissions from transportation account for about 28% of total emissions, making it the second largest after the electricity sector.

The majority of GHG emissions from transportation are CO2 emissions resulting from the combustion of fossil fuels.

The largest sources of transportation related GHG emissions include passenger cars which account for over half of the emissions from the sector.
Main types of mitigation action in transport sector

**Improve**
- Improve the energy efficiency of transport modes and vehicle technology
- Vehicle Efficiency

**Shift**
- Shift to more environmental friendly transportation mode
- Trip Efficiency

**Avoid**
- Reduce or avoid the need for travel
- System Efficiency
### Status Quo of Climate Change Mitigation Programs

A table showing the status of various climate change mitigation programs by type and action:

<table>
<thead>
<tr>
<th>Type of climate action</th>
<th>Improve</th>
<th>Shift</th>
<th>Avoid</th>
<th>Shift and Improve</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDM projects</td>
<td>7</td>
<td>8</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>VCS projects</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>NAMAs</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>14</td>
<td>1</td>
<td>16</td>
</tr>
</tbody>
</table>

Several PMR countries are implementing or considering climate change mitigation programs in the transport sector.
Common MRV elements and challenges

To define baseline and project scenarios, followings parameters are typically needed:

**Focus of proposed solution**

<table>
<thead>
<tr>
<th>MRV Parameter</th>
<th>MRV approach</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of passengers</td>
<td>Survey, sample measurements</td>
<td>Time consuming and expensive</td>
</tr>
<tr>
<td>Occupation rate per vehicle category</td>
<td>Sample measurements (visual observation, ticketing, etc.)</td>
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<tr>
<td>Mode switch</td>
<td>Surveys or specific studies on a local, national or international level</td>
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<tr>
<td>Share of fuels used per vehicle category</td>
<td>National or regional vehicle registration statistics</td>
<td>Publicly available data, however can be inaccurate sometimes</td>
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<tr>
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<td>Emission factors per fuel</td>
<td>IPCC, studies on a local or national level</td>
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Technological possibilities

- **Real time traffic monitoring**
  - Trains
  - Cars
  - Relative

- **Dynamic heat map of presence**

- **Mobility segmentation per origin and destination**
Case Study: MRV costs for large-scale transport programs

Cost reductions are potentially very significant whilst increasing precision.
Conclusion & next steps

This innovation offers:

• Easier (and cheaper) ways of MRV in the transport sector
• More accurate, complete and transparent dataset
• Higher rate of frequency for data collection (up to real-time monitoring)
• Scalable, reproducible and comparable solution

Moreover, it can be implemented in any country where mobile signals exist!

Next steps:

• Further assessment of technical and financial feasibility together with leading telecom company
• Potential pilot project in Paris with demonstration at COP21 in 2015
• Assessment of possible application of the approach in the context of national/sub-national GHG inventories, NAMAs, market-based instruments, etc.
THANK YOU

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