



Energy research Centre of the Netherlands

## MRV-ability of actions: case studies

Alessia De Vita ([devita@ecn.nl](mailto:devita@ecn.nl)) and Stefan Bakker ([bakker@ecn.nl](mailto:bakker@ecn.nl))  
Parallel Event AWG-LCA 7, Bangkok 29 September 2009



## Contents

- Differentiated MRV requirements
- MRV metrics
- MRV-ability
- Case Studies
  - Lighting efficiency
  - Biofuels
- Conclusion

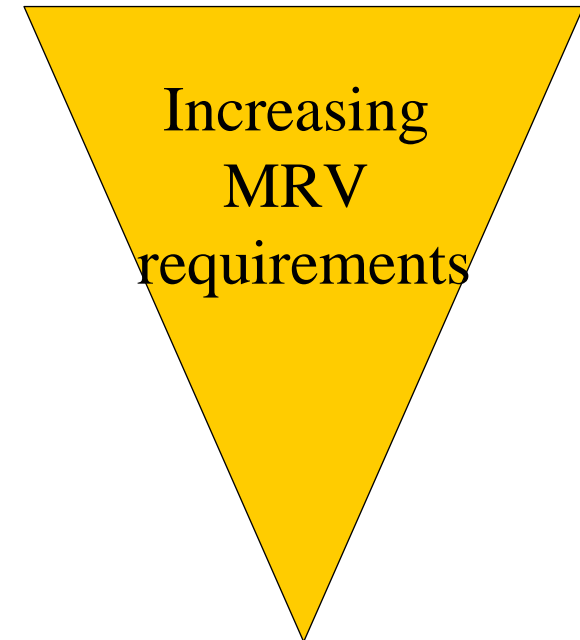
## Differentiated MRV requirements

- Three levels of proposed NAMAs:

- Carbon Market NAMAs

- Supported NAMAs

- Unilateral NAMAs



# What can be MRV-ed, by which indicators?

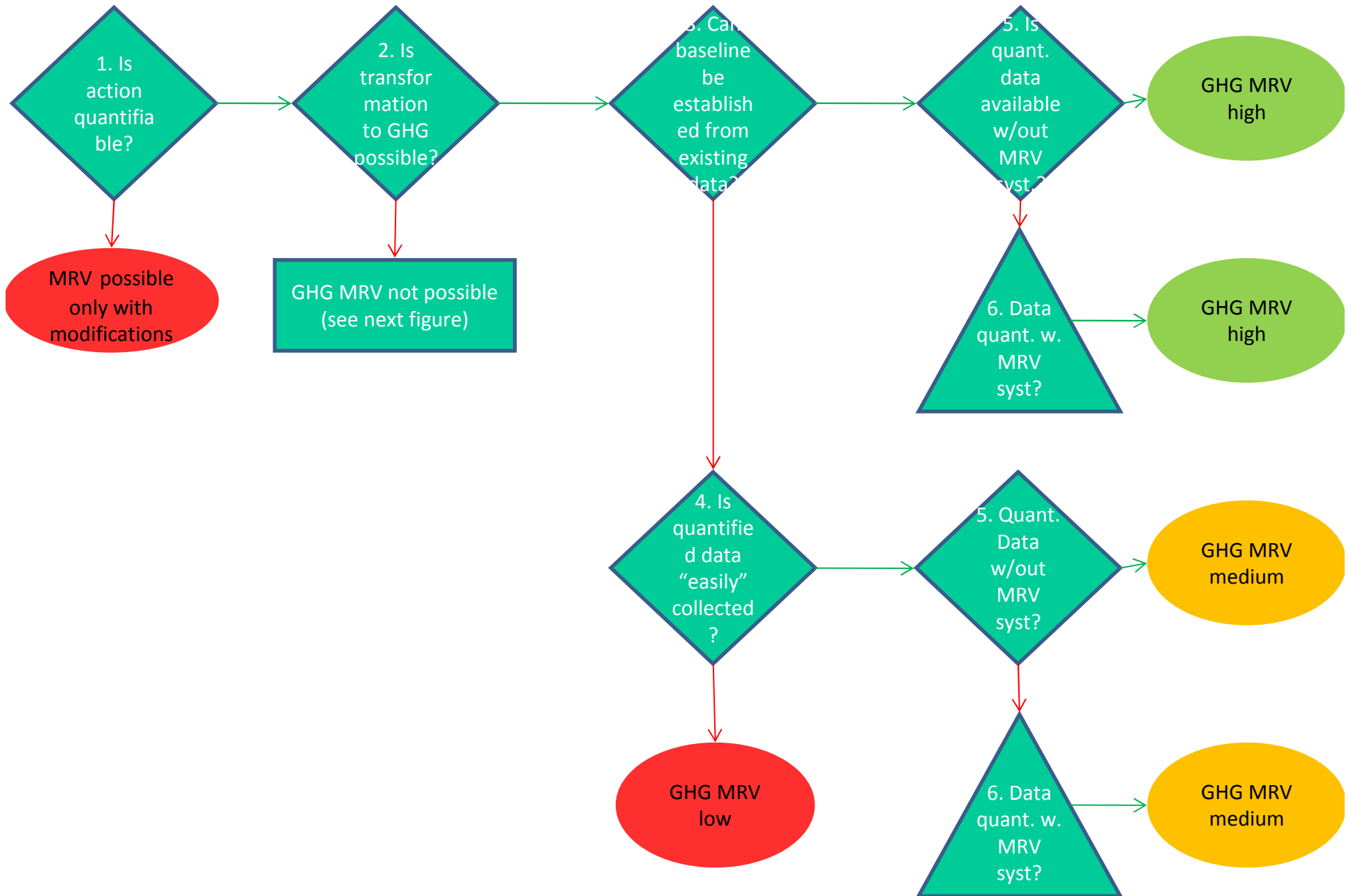
## Policy Process

- |   |                                 |   |
|---|---------------------------------|---|
| <ul style="list-style-type: none"> <li>• Policy plan</li> <li>• Instrumentation/ policy measure</li> <li>• Resources</li> </ul> | <p>Implementation of action</p> | <ul style="list-style-type: none"> <li>• Greater carbon stock</li> <li>• Reduced energy consumption</li> <li>• GHG reduced</li> </ul> |
|---|---------------------------------|---|

INPUT	PROCESS	OUTPUT	OUTCOME
<ul style="list-style-type: none"> <li>• Provides information on resources spent on activities</li> <li>• Easy to measure</li> <li>• Available on short timeframes</li> </ul>	<ul style="list-style-type: none"> <li>• Early warning signals for barriers</li> <li>• Facilitates tailored responses</li> <li>• Improves accountability of programmes</li> </ul>	<ul style="list-style-type: none"> <li>• Used to report success / failure of programmes</li> <li>• Creates clear linkages with inputs</li> </ul>	<ul style="list-style-type: none"> <li>• Illustrates whether a programme is achieving its long-term goals</li> <li>• Useful for international comparability and mutual accountability</li> <li>• Create flexibility for countries to pursue 'own' solutions</li> </ul>

## MRV-ability criteria for output indicators

- Is action quantifiable?
- Is transformation into GHG emissions reduced or avoided possible?
- Can a baseline be established from existing data?
- Can quantified data be collected “easily”?
- Is quantified data available in the absence of a MRV system?
- Is quantified data available if an MRV system is in place?



## Case study: Efficient lighting

**Aim:** Reduction of electricity consumption to:  
increase security of supply, reduce power  
shortages, etc.

**Co-aim:** Reduction of GHG emissions

**How:** Change from incandescent light bulbs to CFLs

## Policy Instruments

### Substitution Programmes:

- CFLs given in exchange for old appliances, free or for a small charge
- CDM and non-CDM projects

### Bans:

- Ban of inefficient lighting
- Phase out of inefficient lighting

## GHG Related Issues

	Substitution programmes			Bans
	Non-CDM	CDM small scale	CDM large scale	Non-CDM
Estimate of GHG reductions	No estimate	Consumption * grid emission factor		Scenario analysis
Main effort needed for estimate	Counting of exchanged devices		Metering	Surveys, trend analysis
		Survey for correct functioning of devices		

## Lessons learnt

### Substitution programmes:

- Extensive metering and onsite checks
- Only CDM determines emission reductions
- Scope: national/regional

### Bans:

- Initial surveys and desk work for scenario development
- Model estimates of emission reductions
- Scope: national

## Case Study: Biofuels

- Objectives: supply security, GHG reduction, employment?
- Mandatory blends common in AI and NAI
- AI: part of climate policy package
  - EU Directive: detailed guidelines on emission savings
  - No explicit consideration of baseline biofuel use

## Biofuel MRV in non-Annex I



- Unclear if monitoring on national level
- 3 CDM methodologies approved, limited applicability
- Key issues
  - Upstream emissions
  - Emission factors
  - Baseline scenario
- Requirements high (offsetting)
- Valuable experience, but progress needed for NAMAs

# MRV-ability Assessment

low MRViability  
 medium MRViability  
 high MRViability

SECTOR	INPUT		PROCESS	OUTPUT other metric	OUTCOME GHG emissions reduced
	Action	Input			
Building	Appliance switch (CFLs): Substitution Programme	\$	Substitution process	number of appliances exchanged	-GHG
	Appliance switch (CFLs): Ban	Legislation	Implementation of legislation	Change in stock / reduced energy use	-GHG
Transport	Biofuel incentives	norm/\$	% blend in fuel	increase in % of blend in fuel	-GHG

## Conclusions / discussion

- Indicators for different policy stages could be helpful
- Policy monitoring currently limited – insufficient?
- CDM methodologies valuable experience
- Key challenges for output indicators
  - baselines for policies with multiple objectives
  - emission factors
- What level of ‘additionality’ is required for different types of NAMAs?

## Example of Evaluation

INPUT		PROCESS	OUTPUT	
Action	Input		other metric	GHG emissions reduced or avoided
<b>Building sector</b>				
Appliance switch (CFLs)	\$		number of appliances exchanged	-GHG
Solar water heating programmes	norm/\$		increase in m2 solar collectors sold incentives given	-GHG
financial incentives for energy efficient appliances	\$		amount of incentives given increase in number of appliances sold	-GHG
Building codes	norm		reduced energy consumption in buildings	- GHG
Energy Audits in buildings/companies		auditing of buildings	classification of audited buildings	