



**International Partnership
on Mitigation and MRV**

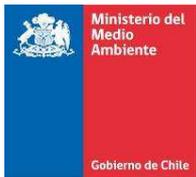
Technical workshop

**Bottom-up approach to the MRV of policies, measures and
actions in the Chilean energy sector**

24 and 25 July 2012 – Santiago, Chile

Summary report





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National context and workshop background

In Copenhagen in 2010, Chile pledged that by 2020 it will take nationally appropriate mitigation actions to achieve a 20% deviation below the “business-as-usual” emissions growth trajectory by 2020, as projected from the year 2007. The Chilean Government also indicated that energy efficiency, renewable energy, and Land Use Land Use Change and Forestry measures will be the main focus of the country’s nationally appropriate mitigation actions

To achieve this target, numerous mitigation actions are already under implementation at the national level, most of them being carried out in cooperation with the private sector. Chile is currently developing a national registry of mitigation actions. .

In the energy sector, Chile is currently working on the development of various nationally appropriate mitigation actions: two of them, which the workshop looked at in more detail (self-supply/price stabilisation fund) focus on the expansion of **renewable energy**. It is for these activities, in particular, that Chile intends to seek international support. The mitigation actions being carried out in the field of **energy efficiency** are for the greatest part financed from the national budget. Despite the different sources of funding, the MRV systems for all actions in the energy sector should nevertheless have to meet similar high standards; a deliberate decision has been taken to work to develop a robust MRV system for both domestically and internationally financed NAMAs.

The **International Partnership on Mitigation and MRV** supports ambitious member states in achieving their mitigation targets by planning and implementing low-emission development strategies (LEDS), Nationally Appropriate Mitigation Actions (NAMAs) and measurement, reporting and verification (MRV) systems, and promotes sharing of experience among developing and developed countries. This workshop is the second technical workshop within the partnership’s capacity building programme. The first was held in Hazyview, South Africa, in June 2010 and looked at MRV from implementer’s perspective.

Organisers

- Ministerio del Medio Ambiente de Chile (MMA)
- Centro de Energías Renovables (CER)
- Agencia Chilena de Eficiencia Energética (AChEE)

Participants

About 40 representatives from a range of public and private institutions in Chile, including the environment and energy ministries, consultancy firms, NGOs and universities (see list of participants in Annex 2).

Objectives

- Identify feasible methods for standardising and upscaling information relating to the measurement, reporting and verification (MRV) of emission reduction and co-benefits of policies and actions in the Chilean energy sector.
- Draft proposals for the application of MRV, including developing appropriate indicators for four mitigation actions in Chile.



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Methodology

The workshop concentrated on Nationally Appropriate Mitigation Actions (NAMAs) in the energy sector, making a distinction in structure between actions aimed at improving **energy efficiency**, on the one hand, and on using **renewable energy**, on the other. The Chilean Energy Efficiency Agency (Agencia Chilena de Eficiencia Energética – AchEE) is responsible for energy efficiency at national level and the Centre for Renewable Energy (Centro de Energías Renovables – CER) for renewable energy.

At the input session on the first day, during which a range of presentations by experts gave an initial overview of MRV at national and international level, representatives from the two above-mentioned institutions presented two mitigation actions in their particular sub-sector. Four groups, each with a different focus, then worked on these four NAMAs throughout the entire workshop. For each mitigation action, they:

- identified potential indicators and the data needed to calculate them (**step 1**);
- established who has this information and identified processes and procedures for acquiring data (**step 2**);
- discussed methods of validating and aggregating this data (**step 3**); and finally
- explored options for structuring and communicating the information on a national MRV platform (**step 4**).

The charts below illustrate the process described.

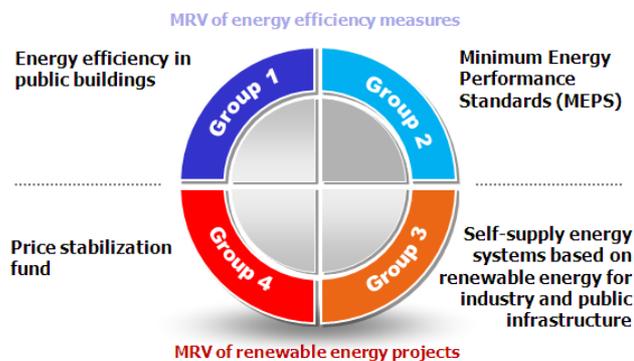


Chart 1: Thematic working groups focusing on the four mitigation actions in the Chilean energy sector

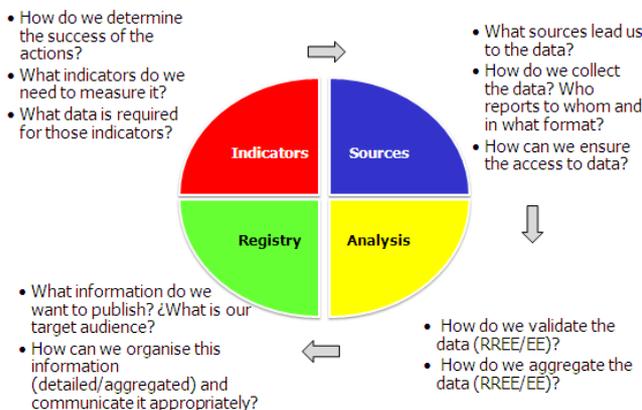


Chart 2: Methodological sequence



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Inputs

(1) Opening

Andrea Rudnick, Environment Ministry, Chile (MMA)

Dr Annette Weerth, German Embassy in Chile



The workshop opened with a welcoming speech by the head of the Chilean delegation Andrea Rudnick, in which she outlined the five strategic priorities of Chile's national climate change plan (*Plan Nacional de Cambio Climático*) for 2012–2014:

- 1) greenhouse gas (GHG) inventories;
- 2) GHG reduction and low-emission development strategies;
- 3) vulnerability and adaptation;
- 4) capacity building;
- 5) negotiations and participation in international processes; and
- 6) institutional structures.



Andrea Rudnick stressed the fact that the event is firmly embedded in the International Partnership on Mitigation and MRV and expressed her thanks for its support for the workshop and the coordination work it put in. The new Head of Economic Cooperation & Development at the German embassy, Dr Annette Weerth, then gave a welcoming address in which she highlighted the many years of positive cooperation between Germany and Chile.

(2) National MRV context in Chile

Alexa Kleysteuber, Ministerio del Medio Ambiente (MMA)



'You can't manage what you don't measure'

Alexa Kleysteuber, responsible for international negotiations and the coordination of NAMA development at the Chilean environment ministry, gave an overview of how MRV had developed in the rounds of negotiations in recent years and of Chile's current position in this process. Chile is highly ambitious, strives to be a frontrunner and would like to be a role model for other countries to follow. As part of this, it would like to play a proactive part in shaping these negotiation processes.

She outlined a number of ongoing and proposed mitigation actions, including seven NAMA proposals in the energy, transport, forest and waste management sectors for which Chile is seeking international support. Two of the three NAMAs in the field of renewable

energy were then explored in greater depth in the workshop, one being self-supply energy systems based on renewable energy for industry and public infrastructure, and the other a price stabilisation fund for renewable energy projects. The Ministry of Environment has also already identified a number of national policies, measures and actions that are already contributing to the reduction of greenhouse gases.



(3) International experience with MRV systems

Sina Wartmann, Ecofys

'MRV systems are dynamic systems'

Sina Wartmann from Ecofys gave an overview of the topic at international level and presented a range of experience gained in practice, including the European emissions trading scheme and national GHG inventories and their typical characteristics.

The following points were highlighted as lessons learnt and conclusions drawn from the different systems:

- there is already an extensive pool of international experience with different MRV systems;
- it is reasonable to start with a simple but consistent MRV system, which can then be further developed and upgraded over time on the base of experience;
- MRV systems must be specifically adapted to the objectives of a measure or policy;
- stringent implementation is a key component of MRV systems;



- using standardised formats and guidelines contributes to effective and consistent implementation;
- communication among all actors involved is an important success factor, promoting a common understanding of the issue and making it possible to identify possible improvements;
- each answer opens up new questions!

(4) Top-down approach: experience, methods and approaches to data collection in the energy sector

Verena Graichen, Öko-Institut



'Top-down indicators are important for getting the big picture'

Verena Graichen from the Öko-Institut gave an introduction to indicators in the energy sector at sector level, along with the data acquisition and analysis required. The advantages and disadvantages of this approach were critically explored: The advantages include the possibility of gaining a panoramic view of the situation as a whole within the sector and the opportunity to use it to identify factors that have an impact on trends in the medium and long term. She mentioned the possible disadvantage that by their very nature these indicators do not have a high level of detail and that different effects are aggregated in a single indicator. To achieve comparability, data often has to be converted, something which has to be taken into account when

interpreting it. Verena Graichen also stressed that top-down and bottom-up data analyses are always carried out in parallel and complement each other.

(5) Bottom-up approach: experience and methodological approaches to MRV in the field of renewable energy

Ramazan Aslan, future camp

'Negative impact indicators should be considered'

In his presentation, Ramazan Aslan of Future Camp Türkiye gave an insight into the indicator systems of various CDM projects in Turkey in the field of renewable energy. The focus was on measuring both positive and negative development impacts (sustainable development assessment/'do no harm' assessment), and he stressed how important they both are. In Turkey, local actors were involved in carrying out these analyses (participatory stakeholder consultations) and, as a result of these consultations, draft projects were adapted accordingly.

As success factors, Ramazan Aslan mentioned a good combination of different incentives to use renewable energy. He stressed that it is important to avoid duplicating efforts and that this can be achieved using standardised baselines and positive lists, thus speeding up the implementation of NAMAs and MRV. He also recommended the regulations of the CDM Gold Standard, which were developed and certified on the basis of over 700 projects worldwide. Although they are rigid, they can provide good guidance when developing indicators for measuring co-benefits.



(6) Bottom-up approach: experience and methodological approaches for MRV for energy efficiency measures
Alberto Galante, Perspectives

'A functional MRV system needs data consistency and a cost/benefit balance'



Alberto Galante of Perspectives gave an overview of trends in GHG reduction, ranging from individual activities (CDM/PoA) through to sector-wide targets and measures (NAMAs) and the resulting changes with regard to mitigation potential, MRV requirements and barriers. He used two examples of energy efficiency to illustrate the bottom-up approach: a case study on MRV in the cement industry, and the MRV system used in the NAMA for the Mexican housing sector. He stressed the importance of availability and consistency of data as being primary success factors, yet at the same time the major methodological challenge. The CDM and other existing mechanisms can provide a good basis for developing MRV standards in the field of energy efficiency. However, it is important to ensure that transaction costs are always taken into consideration and calculated, since they can present an obstacle to implementation. An integrated MRV system with an

appropriate mix of methods and the simplest possible procedures promises the best cost/benefit ratio.

(7) Case study 1 from Chile: promoting renewable energy to reduce GHGs
Gerardo Canales (Centro de Energías Renovables - CER)



'Chile is a fertile ground for renewable energy NAMAs'

The objective of the Renewable Energy Centre (*Centro de Energías Renovables – CER*) is to increase the share of renewables in the national energy matrix as a way of contributing to the country's sustainable development. Currently the involvement of RREE in the matrix of power generation in Chile is around 2.9% (0.5% wind, 0.9% water, and 1.5% bio), with a great challenge being to comply with the statutory requirement and meet the 10% goal by 2023. Gerardo Canales presented Chile's two NAMA proposals in the field of renewable energy:

a. Self-supply energy systems based on renewable energy for industry and public infrastructure

This NAMA aims to meet a substantial proportion of the energy demand from industry and public infrastructure from renewable sources. A second objective is to reduce greenhouse gas emitted by selected public enterprises and infrastructure. Finally, a leverage of private investment by other companies is expected. The time scale for achieving the objectives is three years.



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To this end, the NAMA is looking to create a market for biogas and photovoltaic projects, among others, supported by the necessary technology transfer and capacity building measures. The industrial sectors with the biggest potential or infrastructure to implement such projects are the following: agribusiness, tourism, health care networks, educational establishments and public buildings, including social housing.

The development of the NAMA is supported by Ecofys, ECN and Fundación Chile (financed by BMU). The NAMA proposal is scheduled to be completed and presented to potential donors for implementation by June 2013. Estimated costs amount to about USD 60 million, and the Government of Chile has already committed USD 10 million to this initiative. The anticipated GHG reduction is 1,700,000 tonnes of CO₂ per year.

Renewable energy price stabilisation fund

Large-scale renewable energy projects are considered to be high risk: they involve a high degree of cost variability and few finance options and experience with developing complex projects is limited. The aim of this NAMA is to increase and accelerate the implementation of renewable energy projects and create a market by establishing a fund, called the Price Stabilization Fund.

The fund would be designed as an exchange mechanism that executes long-term power purchase agreements with projects (10-15 years), receiving the marginal cost as an income and paying a fixed predetermined price to the project owner.

It aims to guarantee price stability for energy producers in order to provide a cushion against market risk and price volatility and create the structural conditions needed to attract investment. The fund is intended to be an independent for-profit entity. Early estimates suggest that USD 100 million of capitalization could support the development of 2,000 GWh (equivalent to approximately 400 MW of NCRE). To implement this fund, an initial investment of at least USD 50 million will be required from national and international sources. Subsequently, the fund will gradually be financed through private investment. The anticipated GHG reduction is 1,654,400 tonnes of CO₂ per year.

Furthermore, work is currently ongoing with financial support from the British Embassy on a monitoring platform for all CER projects. It is to be structured in such a way that it can be used as an MRV platform for NAMAs in the field of renewable energy.

(8) Case study 2 from Chile: GHG reduction through energy efficiency activities Marcelo Godoy (Agencia Chilena de Eficiencia Energética – AChEE)

'The information exists. How do we gather it?'



Marcelo Godoy of the Chilean Energy Efficiency Agency (Agencia Chilena de Eficiencia Energética – AChEE) presented two national mitigation actions in the field of energy efficiency. In line with Chile's international GHG reduction commitment, AChEE's goal is to reduce national energy demand by 2020 by achieving an increase in energy efficiency of 12% compared with the BAU scenario.

a. Energy efficiency in public buildings

A presidential mandate set a target of reducing electricity consumption in public buildings by 5%. In 2011, energy consumption in public buildings was recorded in a registry managed by the Chilean Energy Efficiency Agency to verify compliance with this target. This platform makes it possible to centralise relevant information, as well as carrying out automatic data analysis on the basis of specific predetermined cross-effects.

With this tool it is possible to identify building complexes that

have particularly high and/or constantly rising energy consumption, introduce appropriate energy efficiency activities and measure their effectiveness.

Several types of energy sources are included in the platform (grid electricity, oil, natural gas, LPG and firewood). The platform makes it possible to monitor the energy performance of buildings before and after the implementation of energy efficiency measures, and to assess if the savings are maintained over time.

b. MRV for MEPS

Minimum energy performance standards (MEPS) define a set of specific performance requirements that energy consuming appliances (e.g. washing machines, air conditioning systems) have to meet, while at the same time limiting their maximum energy consumption for specified tasks. In this way, they ensure a minimum standard for energy efficiency of appliances sold in a certain country. The objectives of the NAMA for MEPS in Chile include reducing energy consumption, improving the standard of equipment sold in the country and contributing to meeting the target set out by the Ministry of Energy's Energy Strategy to reduce energy demand by 12% by 2020 through energy efficiency. MEPS will be implemented through a policy framework, in which the target setting, standards, policies and regulations for artifacts entering the country or produced in the country are in line with the requirements of the Ministry of Energy.

In some countries, such as Australia, New Zealand, Brazil and Argentina, MEPS are already legally binding; usually specific tests are required to verify the methods for measuring. Chile is currently



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working on implementing the standards and on developing the indicators needed to measure performance in refrigerators and lighting for the 2012-2013 period.

(9) Case study from Mexico: methods and developing indicators

José Antonio Urteaga, mgminnova

'MRV is an instrument, not the purpose – it should serve to gain benefit'



José Antonio Urteaga of mgminnova presented Mexico's experience with developing an MRV system in the housing sector as part of its *Programa Especial de Cambio Climático (PECC)*¹ or Special Climate Change Programme. Its focus was on developing energy efficiency indicators and acquiring the necessary data. He stressed the importance of developing a national MRV platform, which promotes a culture of transparency and raises the level of ambition. The system's functionality should take precedence over 100% certainty of data. In this context, he emphasised the importance of simplifying processes and using existing information. He pointed out some factors that had contributed to the successful implementation of Mexico's climate change programme, such as the fact that it enjoyed the political support of the office of the Mexican president and that it managed to get many high-ranking decision-makers on board. A total of 11 ministries had

been integrated into the mitigation initiatives within the PECC and there is a fine-mesh system of three-monthly reports to the president's office. Mexico is the only NA1 country to date to have already submitted its fourth National Communication and it is currently working on its fifth.

(10) Developing a national web platform to register GHG emissions and energy efficiency activities

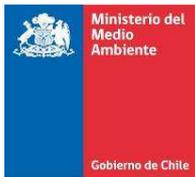
Robert Milnes, AEA

'Design is not everything'



During the final session of the workshop, Robert Milnes of AEA Technology presented a number of different monitoring platforms for GHG reduction projects (e.g.: Voluntary Carbon Standard, Carbon Reduction Commitment) and explained their structures and functions, as well as some of the pros and cons, regarding comparability of the information fed in, for example, or the question of users' trust in the quality of data and its informative value for political decision-makers. He stressed that the design of a platform of this kind is not static. Platforms need to be constantly refined to match the activities to be fed in to avoid the danger of only those activities that are easy to register being included.

¹ 2009–2012; reduction target to be achieved by 2012: 51 Mt of CO₂e/year. Current level: 45 Mt of CO₂e.



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Conclusions

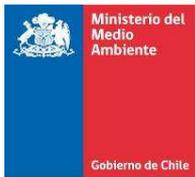
- **Keep it simple:** Less is more when it comes to setting up an MRV system. It is better to step things up gradually, rather than making processes too complicated from the outset. MRV systems are dynamic, i.e. they can and should always be in a process of evolution and improvement based on lessons learned.
- **Identify what's already there:** There is already a great deal of data available, in a variety of public institutions, for example, which is of value when developing a national MRV system and could be used. Evaluating what information and sources already exist is therefore an important initial step to avoid unnecessary extra work.
- **Create cooperation maps:** Systematisation and centralisation of data is a challenge that has to be tackled through good coordination between the institutions involved. Mapping sources and responsibilities could be a good place to begin. → Who has what kind of data? What is the best way to organise the information? Who plays what role in that?
- **Incentives for access:** To achieve access to data, especially sensitive data, clear and appropriate incentives must be established, and regulations and responsibilities (possibly enshrined in law) should be defined.
- **Measure sustainability impacts:** Co-benefits, development impact assessments and cost-benefit indicators were stressed as important measurement parameters, in addition to emissions reduction.
- **Identify interrelations:** The diverse ways in which data is used should be recognised as added value: certain data can be used in transversal calculations and can be valuable for different indicators (change of data use); other indicators are interrelated and should be interpreted accordingly.
- **Create "showrooms" for good practice:** The existence of a national MRV platform raises the level of ambition. At the same time, it promotes a culture of transparency and can be useful in attracting investors. These "showrooms" might be useful on different scales: one possibility would be to create national registries, e.g. at sector level, and link them to the UNFCCC registry.
- **Start right away:** An MRV system can be developed in parallel with a NAMA; it does not need to be based on a clearly defined pre-existing NAMA. Nevertheless: it is crucial to first clearly define the objectives of the NAMA.
- **Be open-minded:** It is important to bear in mind that MRV for NAMAs can and should be a more flexible process than monitoring CDM projects. The level of detail and complexity of the MRV systems may differ enormously from one NAMA to another.
- **Keep sharing and exchanging experience and information:** There is great demand for further international communication, for example with experts who were involved in implementing voluntary registry systems and can share their experience.



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Next steps/What will we do on Monday?:

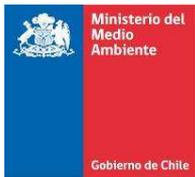
- ➔ use newly created professional networks to share experience;
- ➔ continue the strategic planning for work on a national information platform, paying particular attention to identifying the potential for integrating existing systems;
- ➔ clearly define detailed objectives of the two NAMA proposals in the field of renewable energy so that the concrete work on developing indicators can begin;
- ➔ further develop the MRV systems for activities in the field of energy efficiency and renewable energy projects based on the findings of the workshop and on comparisons with other international experience;
- ➔ present and discuss the workshop's findings at the next Partnership meeting in Bangkok in September.



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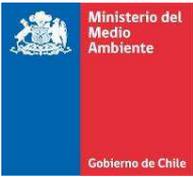
Annex 1: Agenda

24 July 2012		
Morning	<i>Introduction and overview on MRV at national and international level</i>	
9:00 - 9:15 am	<ul style="list-style-type: none"> Opening, presentation of workshop objectives and agenda 	Martin Rapp (facilitator)
9:15 - 9:45 am	<ul style="list-style-type: none"> Welcome remarks & introduction 	Andrea Rudnick, MMA Dr Annette Weerth, German Embassy
9:45 - 10:15 am	<ul style="list-style-type: none"> General context for MRV in Chile (Why MRV? Where do we stand today?) 	Alexa Kleysteuber, MMA
10:15 - 10:45 am	Coffee break	
10:45 - 11:05 am	<ul style="list-style-type: none"> International experience with MRV systems 	Sina Wartmann, Ecofys
11:05 - 11:30 am	<ul style="list-style-type: none"> Top-down: experience, methodologies and approaches to data inquiry in the energy sector 	Verena Graichen, Oeko-Institut
11:30 - 12:30 pm	<ul style="list-style-type: none"> Bottom-up: experience and methodological approaches for MRV of emission reduction and co-benefits in energy efficiency and RREE measures 	Ramazan Aslan, future camp/ Alberto Galante, Perspectives
12:30 - 1:00 pm	<ul style="list-style-type: none"> Q&A, discussion 	Martin Rapp
1:00 - 2:00 pm	Lunch Break	
Afternoon	<i>MRV in the energy sector: what information do we need?</i>	
2:00 - 3:00 pm	Chilean emission reduction activities in the energy sector: Centro de Energías Renovables: <ul style="list-style-type: none"> Self-supply energy systems based on renewable energy for industry and public infrastructure Price stabilisation fund Agencia Chilena para la Eficiencia Energética: <ul style="list-style-type: none"> Energy efficiency in public buildings MRV for MEPS 	Gerardo Canales, CER Marcelo Godoy, AChEE
3:00 - 3:30 pm	Coffee break	
3:30 - 3:50 pm	Experience from Mexico: methodologies and development of indicators	José Antonio Urteaga, mgminnova
3:50 - 5:00 pm	Working groups (four parallel groups): Identification of data needed for MRV of policies, measures and actions of the four mitigation actions and development of appropriate indicators for MRV of emission reductions and co-benefits: <ul style="list-style-type: none"> ➔ How do we determine the success of the actions? ➔ What indicators do we need to measure the success? ➔ What data is required for those indicators? 	Facilitators: - EE: Robert Milnes; Verena Graichen; Sina Wartmann - RREE: José Urteaga, Ramazan Aslan, Alberto Galante
5:00 - 5:45 pm	Presentation of the results of working groups & discussion	Working groups
5:45 pm	Welcome cocktail	



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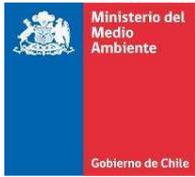
25 July 2012		
<i>How do we gather the required information?</i>		
9:00 - 9:15 am	Opening, brief summary of the first day, expected outputs for the second day	Martin Rapp Maricel Gibbs
9:15 - 11:15 am (including coffee break)	<p>Working groups (four parallel groups on the following topics):</p> <p>Reviewing existing information and institutional arrangements (emission reduction, co-benefits) for MRV of energy efficiency measures and RREE projects.</p> <p>Analysing Chile's institutional capacity for gathering, analysing and upscaling information.</p> <p>Development of a cooperation map.</p> <ul style="list-style-type: none"> ➔ What sources lead us to the data? ➔ How do we collect the data? Who reports to whom and in what format? ➔ How can we ensure access to data? 	<p>Facilitators:</p> <ul style="list-style-type: none"> - EE: Verena Graichen; Robert Milnes; Sina Wartmann - ERNC: José Urteaga, Ramazan Aslan, Alberto Galante
11:15 - 12:30 pm	Presentation of results, discussion	Working groups
12:30 - 1:30 pm	<i>Lunch break</i>	
<i>How do we analyse and upscale the information?</i>		
1:30 - 2:30 pm	<p>Working groups (four parallel groups):</p> <p>Discussion of concrete methodologies to upscale the information gathered for a national MRV system</p> <ul style="list-style-type: none"> ➔ How do we validate the data? ➔ How do we aggregate the data? 	<p>Facilitators:</p> <ul style="list-style-type: none"> - Data validation: Verena Graichen, Sina Wartmann; Alberto Galante - Data aggregation: Robert Milnes; José Urteaga, Ramazan Aslan
1:30 - 2:30 pm	Presentation of the results & discussion	Working groups
<i>How do we systematise and communicate the information?</i>		
3:00 - 3:30 pm	Creation of a national web system for the registration of emissions and energy efficiency measures	Robert Milnes, AEA
3:30 - 4:30 pm	<p>Working groups:</p> <p>Upscaling data to develop an information platform on MRV of energy projects</p> <p>What information do we want to publish? What is our target audience?</p> <p>How can we organise this information (detailed/aggregated) and communicate it appropriately?</p>	<p>Facilitators:</p> <ul style="list-style-type: none"> - EE: Verena Graichen; Robert Milnes; Sina Wartmann - ERNC: José Urteaga, Ramazan Aslan, Alberto Galante
4:30 - 5:00 pm	Presentation of the results & discussion	Working groups
5:00 - 5:30 pm	Wrap-up & workshop conclusions	Martin Rapp Maricel Gibbs



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Annex 2: List of participants

	Name	Institution	Division
1	Alvarez, Daniela	PWC	SBS
2	Aslan, Ramazan	Future Camp	
3	Argomedo, Rosa María	Ministerio de Energía	Energía
4	Bayer, Sebastian	GIZ	
5	Bergmann, Johanna	GIZ	Competence Centre for Climate Change
6	Bernaldo, Paz	Centro de Energías Renovables	Gestión Proyectos
7	Bruer, Verena	GIZ	Competence Centre for Climate Change
8	Canales, Gerardo	Centro de Energías Renovables	Gerencia Gestión de Programa
9	Canessa, Silvana	Fundación Chile	Energía y Cambio Climático
10	Carrasco, David	Sistemas Sustentables	Sistemas Sustentables
11	Coz, Fernando	Fundación Chile	Energía y Cambio Climático
12	Del Rio, Alejandro	PWC	Sustentabilidad y Cambio Climático
13	Diaz, Manuel	Universidad de Chile	PROGEA
14	Duran, Sergio	Universidad Mayor	
15	Dörflinger, Kerstin	GIZ	Practicante GIZ Chile
16	Farías, Fernando	Ministerio del Medio Ambiente	Oficina Cambio Climático
17	Franzen, Karin	GIZ	Proyecto Estrategia de Expansión
18	Galante, Alberto	Perspectives GmbH	
19	Gibbs, Maricel	Consultora	
20	Godoy, Marcelo	Agencia Chilena de Eficiencia Energética	Área CPR
21	Görner, Marlen	GIZ	
22	Graichen, Verena	Instituto de Ecología Aplicada de Alemania	Energía & Clima



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	Name	Institution	Division
23	Herrera, Sebastian	Sistemas Sustentables	Energía
24	Huerta, Viviana	Centro de Energías Renovables	CER
25	Hildebrandt, Vinka	SN Power	Cambio Climático
26	Hinojosa, Luis	Poch	Gestión Energía
27	Jara, Gabriel	Agencia Chilena de Eficiencia Energética	
28	Jiménez H., Ricardo	KPMG	CC and S
29	Kleysteuber, Alexa	Ministerio del Medio Ambiente	Oficina de Cambio Climático
30	Mager, Jenny	Ministerio del Medio Ambiente	Cambio Climático MMA
31	Milnes, Robert	Asociación Electrotécnica Argentina	
32	Morín Nenoff, Jenny	GIZ	
33	Padilla V., Marcelo	Ministerio de Energía	División Eficiencia Energética
34	Palma, Soledad	Poch	
35	Pirazzolo, Andrés	Ministerio del Medio Ambiente	
36	Rapp, Martin	Consultant	
37	Rebolledo, Ignacio	Poch	Consultant
38	Riascos, Ivan	Sistemas Sustentables	
39	Rudnick, Andrea	Ministerio del Medio Ambiente	Oficina de Cambio Climático
40	Sanhueza, Manuel	CCyD	Mindsal SBMU
41	Santelices, Ignacio	CCAP	CCAP
42	Schmidt-Holtmann, Christina	German Embassy	
43	Soto, Alvaro	Agencia Chilena de Eficiencia Energética	
44	Timmermann, Jonas	GIZ	Practicante, GIZ Chile
45	Urmeneta, María Carolina	Poch	



**International Partnership
on Mitigation and MRV**

	Name	Institution	Division
46	Urteaga, José Antonio	MGM Innova	MGM Innova
47	Vidal ,William	Sistemas Sustentables	
48	Wartmann, Sina	Ecofys	Ecofys
49	Weerth, Annette	German Embassy	
50	Yañez, Christian	CChC	Eficiencia energética