



Analysis tool for GAINS Scenarios Technical support to EECCA countries

Presented by Tiziano Pignatelli
Co-Chairman of EGTEI

tiziano.pignatelli@enea.it

TFTEI - 1st Meeting, Brussels, June 25, 2015



Presentation Outline

- Introduction
- Objectives of the tool
- Methodology
- Other possible applications
- GAINS EECCA Countries
- Deliverables and deadlines

TFTEI - 1st Meeting, Brussels, June 25, 2015



Introduction

The activity here described refers to the 2014–2015 workplan for the implementation of the Convention, action 2.2.7:

“Analyze the available Gothenburg GAINS scenarios to estimate the technical upgrade to be implemented by countries of Eastern Europe, the Caucasus and Central Asia in order to comply with the Gothenburg Protocol. Organize workshop/bilateral consultations for verification of the analysis and estimates with countries of the sub-region”

TFTEI - 1st Meeting, Brussels, June 25, 2015



Objectives of the Tool



1. Establish a link between the ELVs, as in the Annexes to the Gothenburg Protocol Emission Scenarios developed by the GAINS Model (CIAM/IIASA).
2. Estimate the “technological gap” between the Emission Scenario under analysis and the Upgraded Scenario (ELVs consistent). Estimate the (additional) Emission Reductions and Costs, in the new Upgraded Scenario.
3. Provide the EECCA Experts with analytical information on the potential technological improvement in some key sectors (e.g. Power Plants).
4. Provide the EECCA experts, who have their National Gains Model, with a tool for analyses of their own scenarios.

TFTEI - 1st Meeting, Brussels, June 25, 2015



Assumptions and caviats



The EF (mg/m³) calculated by GAINS, refers to annual emissions and is an average value for that specific plant category and abatement technology. The ELVs in GP are referred to a single plant in standard operating conditions.

Main Assumption: As first approximation it is assumed that EF is *comparable* with ELV

When more technologies are implemented in a given plan category the *average* EF (mg/m³) is calculated, from GAINS EF data, as weighted average, (where the technology implementation rates are taken as weight factors).

Not always the combinations of technologies, suitable for satisfying the ELV constraints, is found. The fuel quality is also affecting the results.

TFTEI - 1st Meeting, Brussels, June 25, 2015



Methodology



The methodology has been already described in details in previous meeting of EGTEI and can be here summarized as:

1. Analysis of the Emission Scenario under analysis
2. Identification of source categories NOT consistent with the reference ELVs (in the GP Annexes).
3. Improving the penetration rates, where possible, or alternatively, introduce more efficient abatement technologies, such as the average EF is consistent with the corresponding ELV.
4. Introduce such rates/technologies into the new Upgraded Scenario.
5. Re-calculate, by the GAINS Model, the emissions of the Upgraded Scenario, for the concerned sectors, to estimate on emission reductions (and additional costs from GAINS), at the target year (e.g. 2020).

Proper TOOL, in form of Excel Macro, have been developed to accomplish the above tasks (1-4).

TFTEI - 1st Meeting, Brussels, June 25, 2015



Other possible applications



The same methodology is applicable to other sectors for which GAINS calculates EF in mg/m³, e.g. Industrial Boilers.

The methodology, with proper adjustments, can be applied to the GAINS_Europe Model New Version for the scenarios available (e.g. for other EECCA Countries) in the next future.

The methodology and the TOOL, with minor adjustments, can be applied to test scenarios versus different ELVs established by other international and/on national legislation.

TFTEI - 1st Meeting, Brussels, June 25, 2015



GAINS EECCA Countries



IIASA has developed on a new portal for EECCA countries :

<http://gains.iiasa.ac.at/gains/ECA/index.login?logout=1>

Free registration.

The EECCA experts are invited to cooperate to improve the quality of the data (energy, technology etc.) in this GAINS version. Interested users are allowed and encouraged to register (however with limited support from IIASA).

The interested experts may contact Wolfgang Schoepp (IIASA, schoepp@iiasa.ac.at)

TFTEI - 1st Meeting, Brussels, June 25, 2015



Deliverables and deadlines



According to the task 2.2.7 the following deliverables are expected :

Report on the methodology and results of the analyses
(delivery to TFTEI members for review **31st of July, 2015**)
(deadline for return comments to TFTEI, **15th of September, 2015**)
(delivery to UN Secretariat **30th of September, 2015**)

The TOOL (testing version for Belarus and RF) delivered by
31st of July, 2015 (including test cases and how to use)

Joint workshop EECCA Coordinating Group – TFTEI, in
Saint Petersburg .

TFTEI - 1st Meeting, Brussels, June 25, 2015