



## Green Investment Schemes:

### *Maximizing their benefits for climate and society*

### *Executive Summary*

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<sup>1</sup> The views expressed are purely those of the authors and may not in any circumstances be regarded as stating an official position of the European Commission



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## **Executive summary**

Green Investment Schemes (GIS) are a new carbon finance mechanism that complement presently existing ones in Central and Eastern Europe (CEE). GIS could serve as an alternative mechanism for funding projects and programmes that other international instruments (such as Joint Implementation) have not been able to deliver, and as a testing ground for the development of future flexible mechanisms for mitigating global climate change. But the window of opportunity is closing fast: architectural design, legal framework, negotiations, completed transactions, revenue disbursed and subsequent investments, all have to be completed by 2012.

Green Investment Schemes have been introduced to enhance the climate effectiveness of International Emission Trading (IET), a system undermined by the excessive number of Assigned Amount Units (AAUs) allocated to former communist countries in the first round of Kyoto commitments. GIS is thus a “hybrid” of two mechanisms: IET of the AAUs as defined by the KP’s Article 17, plus greening activities using the revenue from their sale. Whilst IET is regulated by the Kyoto Protocol, the Marrakesh Accords and the COP/MOP decisions, domestic greening activities are not covered by international regulation.

Development in GIS has been extremely rapid during the past 2-3 years, progressing from initial consideration to completion of the first transactions in the Autumn of 2008. In June 2007, the Hungarian parliament approved the pioneer national law on GIS implementation and had secondary legislation in place by the end of 2007. As of October 2008, Latvia had established the legal framework and institutional system, the Czech Republic, Ukraine and Romania have adopted general legislation on GIS, and Bulgaria and Poland have demonstrated strong interest in the scheme. Hungary also announced the first two AAU transactions with Belgium and Spain for the sale of 8 million AAUs in total, jump-starting competition among CEE countries. Ukrainian and Romanian officials expect their first AAU deals to take place by the end of 2008 or early 2009.

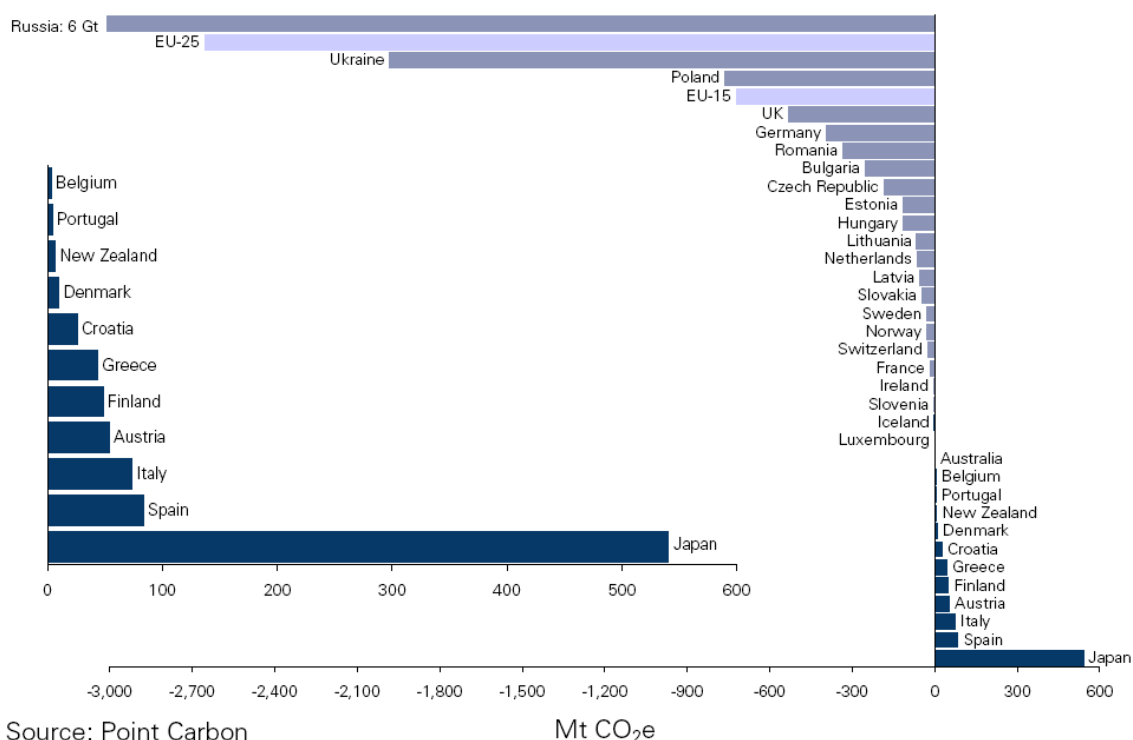
From a legal perspective, GIS is a self-imposed, binding commitment by potential seller countries to fulfill conditions set by potential buyers. As there is no international regulation on GIS, countries have great flexibility in drawing up their schemes. This offers major new opportunities: it could potentially “correct” the shortcomings of other carbon finance mechanisms. However, this flexibility also poses significant risks: environmental integrity is harder to assure without robust international legal and institutional frameworks. The purpose of this report, therefore, was to investigate how this flexibility can be best utilized for maximizing GIS’s benefits to climate and society, whilst ensuring that environmental integrity is not compromised at the expense of simplicity and flexibility. This purpose is reached through two main processes: an investigation of the shortcomings of existing carbon finance mechanisms (mainly JI and CDM) and drawing lessons on how GIS could overcome them, and applying

these lessons and other criteria to an investigation of how such schemes can be designed to ensure environmental integrity and to maximize benefits for the climate in the long-term.

Due to a very short window of opportunity, as well as lessons that could be learned for future climate regimes and carbon mechanisms, it is essential to understand the potential implications of various decisions related to the design of a GIS. So far, the body of research and preparatory work on GIS is dwarfed by that on other carbon mechanisms. Because of the significant risks and opportunities resulting from a lack of international regulation, cooperation and careful planning are required to unlock the real benefits for the climate and for societies in both selling and buying countries.

The overall potentially available AAU's from Central and Eastern-European (CEE) countries, together with Russia and Ukraine, is app. 6.5 Gt over the first commitment period, whilst net demand is estimated at 900 Mt, as illustrated in Figure 1.

**Figure 1. Net demand and supply, after taking into account sink provisions under Annex Z in the Kyoto Protocol, planned purchases of CERs and ERUs, and domestic reduction measures, such as direct control regulations and the EU ETS.**



If demand of 900Mt was met through AAU purchase at €10/ton (which is lower than that of transactions completed before the current financial crisis developed) the expected value of AAUs transaction could be in the range of € 9 billion. Table 1 shows estimated amounts of

AAU supply through GIS by major selling countries and the potentially achievable respective GIS revenues, assuming an AAU price of € 10.

**Table 1. GIS-based AAU supply by major selling countries during first commitment period and the potential respective revenues**

Country	Czech Rep.	Hungary	Latvia	Poland	Romania	Russia	Ukraine
<b>MtCO2-eq</b>	up to 100	50	30	up to 100	up to 100	0	100-1200 <sup>2</sup>
<b>Billion EUR</b>	Up to 1	0.5	0.3	Up to 1	Up to 1	0	1 - 12

Based on a review of GIS developments in the region, as of October 2008, Hungary and Latvia are the GIS front-runners. However, the situation has been changing dynamically over the past few years, and hesitant countries may still generate sudden progress. It seems likely that the GIS/AAU market will grow at a modest pace and, at least for the next couple of years, will constitute a relatively small share of the global carbon market, being characterized by low liquidity and hampered by institutional constraints. Nevertheless, it is still an important market for the sellers. For instance, total EU investment into AAUs is likely to run in the order of EUR3.8-4.0 billion, and the EU might consider the adoption of guidelines that preference the purchasing of AAUs from another member state instead of non MSs. If these funds are invested in climate mitigation in other EU member states, this will help the EU to comply with its post 2012 CC commitments<sup>3</sup>, thus avoiding significant investment in the next commitment period.

Revenues received by the selling countries could dwarf most other funds or budget items devoted to climate change mitigation or sustainable energy promotion. This represents a unique opportunity to address key climate change mitigation priorities that could not, or only with difficulty, be financed through other carbon market mechanisms.

This fact, combined with other characteristics of first generation GIS, influences the choice of priority target areas for GIS spending e.g. first generation GIS is likely to be a unique source of carbon finance, not likely to continue after 2012, and at the same time, there is likely to be a significant oversupply of (greened) AAUs on the market. In addition, due to environmental integrity concerns, monitoring and verification of emissions reductions are important for most types of GIS. Finally, the window of opportunity is very short for disbursing and effectively investing these funds.

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<sup>2</sup> Estimate by The Carbon Trust

<sup>3</sup> Assuming that mitigation-related investments will be in long-lifetime projects, such as infrastructure or other long-lifetime capital stock.

In determining priority target areas, a guarantee of environmental and climate integrity must be pivotal, followed by maximization of climate benefits. Environmental integrity is assured through the additionality of investments; maximizing gains for national social, political and regional development priorities can be achieved through a careful choice of target areas. Due to this unique window of opportunity, the report argues that it is important to channel the funds towards greenhouse gas (GHG) reduction needs that are difficult to foster by business-as-usual policies or available/foreseeable support schemes, and that satisfying additionality should be a key criterion for target area selection and modality design. This is especially important in EU member states, or other countries with ambitious GHG reduction targets, where many policies and mechanisms are already in place. In addition, it is important to ensure the practical feasibility, dispensability and transaction costs of the given GIS model in the chosen target sector, as well as transparency and accountability in operation.

Since GIS revenues represent a potentially significant opportunity for mitigation finance- and potentially a one-off opportunity for some CEE countries, this report argues that it is advisable to direct this to GHG reduction priorities that are important but cannot easily be tackled by other means in the near future, rather than towards lowest-cost measures. Such areas include low-carbon infrastructure that determines emissions in the long term but is difficult to finance through other mechanisms, and where emission reduction monitoring and verification are feasible. In addition, if political, social and development gains are considered as key factors of selection, societal benefits from the utilization of GIS revenues will be maximized.

The report identifies the low-energy retrofit of old, inefficient building stock as a high priority target area that is associated with especially important and numerous co-benefits, e. g. health and comfort improvements, an increase in social welfare and a reduction of fuel poverty, employment creation and new business opportunities, higher energy security, increased value for real estate, and reduced social pressures from energy tariff increases. Within this particular target area it is pivotal that GIS spurs investments to *very low energy* construction and retrofit, potentially nearing passive solar standard levels. This is because the lifetime of the building stock is one of the longest of all carbon-related capital stock, and suboptimal retrofits not only lock these buildings into a GHG-wasting future for many decades to come, but also make subsequent later efficiency retrofits prohibitively expensive due to eroded future savings with comparably high costs. Other priority areas identified by the report are biomass-based heating, with due consideration of its potential impact on local air quality, as well as land-use activities in certain countries such as Russia, Ukraine, Romania, Bulgaria and Poland. Land-use projects may create significant co-benefits, such as income creation for the rural population, increased biodiversity, avoidance of forests fires, and in some cases, synergies with adaptation, for example when carrying out afforestation in areas where climate change increases the risk of erosion or droughts.

Assessment of the experience of Joint Implementation (JI) and Clean Development Mechanism (CDM) reveals a few important lessons. Firstly, they have largely failed to deliver in those

mitigation areas with the highest sustainability benefits which are also especially important priority areas in CEE, such as building energy efficiency, small- and medium-scale bioenergy utilisation. Because of this, the study concluded that it would be detrimental for GIS to “copy-paste” CDM/JI<sup>4</sup> architectures in its modality design. The report found that while ensuring additionality (e.g. through monitoring and verification) is fundamental for the environmental and financial integrity of GIS, applying simpler approaches to M&V and additionality enforcement than in CDM are essential. Whilst the model of programmatic CDM may be partially applied, it is important that some restrictions of pCDM are not transferred, such as limiting a programme to one type of emission reduction. This can make energy efficiency (EE) projects impossible as most of them involve multiple procedures or multiple projects.

The study analysed the different modalities of GIS architectures and their impact on climate effectiveness: selected recommendations are summarized in Table 2.

The following paragraphs highlight a few recommendations that have particular importance for climate effectiveness.

First, in order to ensure environmental integrity through additionality, but avoiding the pitfalls of CDM, simpler and innovative approaches are needed, e. g. the Hungarian GIS is set up in a way that provides finance only for investment types that would not take place in its absence but are important for the climate; building retrofits are supported to efficiency levels that are not attractive under other financing schemes but that lay the foundations of a low-carbon building stock.

On the other hand, *lenience towards additionality* by many host countries is a worrying trend. So far no CEE GIS legislation ensures that revenues are spent on investment that is additional (although EU member states are subject to certain additionality requirements by EU law, these are insufficient to ensure climate additionality). Some countries even announced that additionality is not an important criterion in their GIS. Such trends raise significant environmental concerns about the system.

Since priority GIS target areas typically have long payback times, it is crucial that the combination of allowable crediting period, greening ratio and AAU sales price ensure adequate bankability for long-term projects. If the crediting period does not account for emission reductions earned beyond the end of the first commitment period, and a strict 1:1 (or close) greening ratio is required, with current ranges of AAU prices, investment types will be severely limited to very low hanging fruits – that is investment already taking place through JI or other policies/mechanisms. Therefore, a realistic post-2012 crediting period (say up to 2020) is important for accommodating investments that determine long-term emissions and that would not take place without GIS.

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<sup>4</sup> Track 2

In addition to the crediting period, one other important time-frame decision remains. If greening activities cover more complex areas than other mechanisms of carbon finance, fund disbursement and administration can present serious bottle-necks for the magnitude and effectiveness of GIS schemes in general. This is compounded by the challenge of initiating and starting up a new scheme and financing mechanism that require time to reach full-volume operation. This means that if all aspects of GIS need to be completed by the end of the first commitment period, i.e. including the disbursement of revenues, this substantially elevates the risk that the revenues cannot be spent in an otherwise optimal way. Therefore, it would be important to allow post-2012 disbursement with necessary safeguards for fund management.

The report concluded that GIS, if well designed and operated, can offer significant advantages over JI in many applications. GIS accommodates longer-term horizons and allows governments to place emphasis on areas where early investment is crucial for the transition to a de-carbonized economy in the long-term. In addition, GIS offers an opportunity for implementing small projects, such as those involving buildings. Whilst programmatic approaches can also be implemented under JI, it is unlikely that they will play a role in CEE countries, as JI is developed by the private sector which has little incentive to carry out complex project types whilst there are simpler ones available. Finally, GIS has specific advantages for land-use projects since CDM and JI restrict eligible land-use project types, whilst under a GIS any land-use activity is potentially eligible.

The report also conducted in-depth GIS case studies on energy efficiency in Hungary's building sector, on biomass in Bulgaria and land-use in Romania, and found that it could play a major role in greenhouse gas reduction, over and above that achieved by existing instruments. A special strength of GIS is flexibility regarding project types and implementation.

Finally, the significance of GIS runs beyond the first commitment period. If the experiences prove to be positive, GIS could become the model for a superior carbon finance mechanism, or for one that fills important carbon market niches. Its experiences could be directly transferred or indirectly utilized in post-2012 flexibility mechanisms, used as a model to finance climate activities in developing countries, or for disbursing climate funds, such as the auctioning revenues from EU ETS.



**Table 2. Summary recommendations for GIS architecture design modalities, in order to optimize their impacts for climate and society**

<b>Modality category</b>	<b>Issues in modality choice and recommended modality where applicable</b>
Greening option	Dominance of hard greening is required to ensure climate effectiveness. A small share of soft greening can be important to facilitate the effectiveness of the hard greening part, but this should be a minor share to avoid potential risk of misuse, since ensuring the integrity and effectiveness of spending through soft greening are difficult.
Programmatic/ project approach	A purely project-based approach may compromise GIS in areas where small and dispersed investments are needed such as end-use efficiency or small-scale renewables, because of transaction costs. A programme-based approach has lower transaction costs and can have larger scale roll-out.
Budgetary option of the fund	Due to relatively low financial discipline and major budgetary problems in CEE host countries, it is important that revenues enter special accounts from which the money cannot be legally paid for other uses.
Additionality requirements	Additionality is essential for ensuring the environmental integrity of GIS: financial, legal and environmental. Some financial additionality is mandated for EU member states but not enough to ensure environmental integrity. Additionality should ideally be stipulated in GIS legislation, but must at least be ensured by the scheme setup. Rigorous quantitative additionality enforcement, on the other hand, may be counterproductive for many areas of high priority for GIS in CEE.
Baseline	Sectoral baselines rather than individual baselines substantially reduce transaction costs and can overcome methodology problems.
Monitoring and verification	M&V are essential for ensuring environmental integrity. They are a crucial supervision tool and the proof of the projects taking place as agreed between the buyer and seller. However, rigorous M&V as in CDM, could kill GIS in important priority target areas. Simplified, innovative M&V methods are suggested, such as calculations confirmed by random checks, using ISO standards, etc.
Crediting period	Allowing post-2012 crediting is important in order to avoid GIS picking only the low-hanging fruit. If, however, flexibility is applied to the greening ratio, or AAU prices are high, or substantial co-funding is applied, long-term investments may still be bankable.
Timeframe	Normally transactions will be allowed only in the 1 <sup>st</sup> commitment period. However, extending the timeframe for funds disbursement would be important for optimizing climate effectiveness. The remaining time is too short for a careful scale-up of funding schemes, and disbursement capacity will either be a serious bottleneck limiting the total volume of GIS, or the climate effectiveness will be jeopardised if funds are spent compromising the optimal framework in order to expedite disbursement.
Greening ratio	1:1 ratio would be ideal, but may not be feasible (too narrow circle of enabled investments) if the crediting period does not extend beyond 2012 or if there is no co-financing.
Priority areas targeted	Due to the one-off window of opportunity, high-priority climate abatement areas not easily targeted by business-as-usual activities and policies are ideal target areas. These often include low-energy infrastructure determining long-term emissions but typically associated with long payback times (buildings, transport). Societal co-benefits for host countries can also be maximized. In particular, in the CEE, attractive areas that fall into these categories include: energy efficiency in residential and public sectors; renewable energy for heating; biogas production for transportation purposes; other small-scale bioenergy investments; LULUCF if applicable in host country.

