Promoting energy efficiency through improved carbon finance: the case for Green Investment Schemes?

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GIS research team

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Background

- CDM and JI do not effectively work in one of the key areas of mitigation: energy efficiency
  - Also having the highest SD implications
- It is questionable whether they can be “fixed” to deliver in mobilising the massive number of initiatives needed to unlock efficiency potentials
  - Dispersed, small-scale, often with high transaction costs
- While efficiency is among the lowest-hanging fruit for societal mitigation goals and for the end-users, it is not low-hanging for private investors

Could GIS become one of the alternative models of carbon finance better tailored for the needs of energy efficiency?

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Potential significance of GIS

If GIS 1.0 designed and operated well:

- Could be important alternative to JI where it cannot work
- Important carbon finance instrument in a region with very limited funds for mitigation; potentially up to EUR 9 billion
- Alternative mechanism for funding projects and programs not reached by other carbon and EE finance instruments (like JI), or hard to reach by policies
  - Such as building retrofits
- Could be model for a better tailored carbon finance mechanism in areas where existing ones are problematic
- Could be extended to post-2012 era and/or non-Kyoto regimes (such as developing countries, spending of auctioning revenues, etc.)

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Aims of research and this talk

- Climate Strategies undertook a research effort under the direction of 3CSEP on how to maximise the benefits of GIS to climate and society
- Research so far focused on GIS 1.0, but provides foundations and framework for further thinking about GIS 2.0
- Aims of this talk:
  - Introduce GIS
  - Summarise recommendations on how to optimise GIS 1.0 for climate and society
  - Initiate joint thinking about the merits of GIS 2.0 for broader applications beyond the KP

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Basic principles of GIS 1.0

Many potential AAU buyers will not purchase “hot air”

Tackling excess AAUs of former communist countries in 1st commitment period by combining:

1. International Emissions Trading (IET) as defined by Kyoto Protocol Article 17
2. Greening activities in selling countries from AAU sales revenue; self-imposed binding commitment

⇨ IET regulated by KP and other international accords

but

⇨ Domestic greening activities not internationally regulated

GIS: opportunities and risks

- No international legal framework on how to design it
  - Opportunity: design could learn from shortcomings of other mechanisms, such as that of CDM/JI
  - Risk: ensuring climate integrity without a rigorous legal framework and large watchdog community
- Very little understanding and research on GIS, few experts working on it
- Short window of opportunity for GIS 1.0

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The role of GIS 1.0 on the carbon market

- AAUs potentially available for sale during first commitment period: ***6.5 Gt CO_2e***
- Net demand for AAUs by buyer countries: ***900 Mt CO_2e***
- Possible AAU transaction value in range of € 9 billion (900 Mt at € 10/ton)

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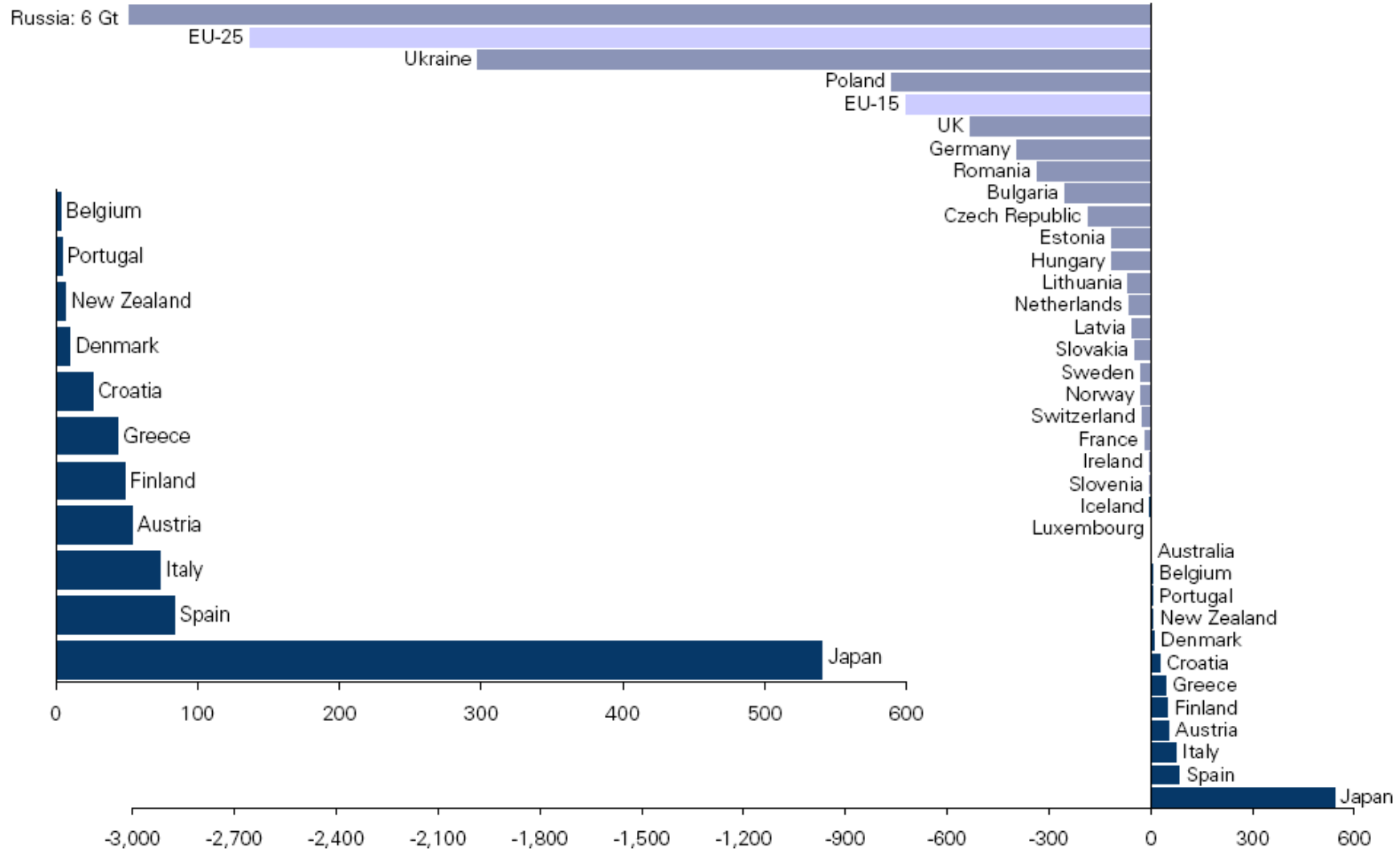
Net demand and supply of AAUs

after taking into account sink provisions under KP Annex Z, planned purchases of CERs and ERUs, and domestic reduction measures



Source: Point Carbon

State of GIS developments

- Rapid development during past 2-3 years
- Pioneer national legislation passed in Hungary in second half of 2007
- Legal framework and institutional system established in Latvia in 2008
- General legislation adopted to date in Czech Republic, Ukraine and Romania
- Strong interest in GIS demonstrated by Bulgaria and Poland
- First announced transactions: autumn 2008, Hungary sells 8 million AAUs in total to Belgium and Spain

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Recent AAU developments

- **Dec 2008:**
  Slovakia sells 10 million AAUs to private company
- **2009:**
  Ukraine sells 30 million AAUs to Japan in February; further sales of up to 70 million AAUs expected
- AAU prices so far between € 6 and > € 14 (€ 10 in latest Ukrainean deal), current price levels seen below € 10
- Developments hard to predict
  - falling carbon prices
  - Hungarian govt freezes GIS revenue spendings
  - Czech auction postponed to “redraw strategy”, slow Polish developments

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Lessons learned from CDM and JI

- Failing in mitigation areas with highest sustainability benefits, such as building energy efficiency and small-/medium-scale bioenergy utilisation
- Additionality enforcement and monitoring & verification is cumbersome and results in high transaction costs in CDM/JI
- JI Investment opportunities largely constrained in EU by EU Linking Directive
- Limited long-term potential if crediting period restricted to first commitment period
- Small-size projects often impossible due to restrictive programmatic approaches

➔**GIS should avoid „copy-paste”ing CDM/JI architectures in its modality design**

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Lessons to be learned for GIS from the shortcomings of CDM/Track-2 JI

Modality of CDM/JI compromising effectiveness in energy efficiency	Implications for GIS architectures
Strict additionality criterion	Additionality to be ensured through simplified methods
High project transaction costs	Simpler or more streamlined project cycle Simplified M&V
Difficulty in having methodologies approved	Allowing simplified, sector-based methodologies; Allowing multiple methodologies and facility-level bundling
Complex monitoring and verification requirements	Simple M&V, such as using sampling, ISO **Precise M&V is less crucial than in JI/CDM because do not affect quantified compliance!!**
High transaction cost of activity	Softening greening ratio or allowing longer crediting periods to improve the bankability of projects even with transaction costs; Institutional assistance in reducing transaction costs

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Recommendations for GIS 1.0

- Ensuring **additionality is pivotal:** through national legislation *and* individual contract clauses
  - Worrying lenience towards additionality by several selling countries
  - Additionality should be a rigorous part of GIS contracts
  - Internationally accepted guidelines for GIS additionality?
- Simpler and innovative approaches needed to ensure additionality
  - *Ensure additionality of SCHEME and not of indiv projects?*
- International watchdog capacity needs to be strengthened (built?) to monitor GIS developments
- Target revenues to areas fundamental for long-term low carbon economy, but not easily reached by business-as-usual practices
- Do not compromise targeted efficiency levels
  - **suboptimal retrofit locks stock into high carbon emissions for decades**
- Combination of greening ratio, crediting period and poten-tial co-funding to maximise long-term climate effectiveness
  - **Allowing for post-2012 disbursement of GIS revenues is crucial**
  - Optimal spending of GIS revenues seriously challenged if disbursement limited to first commitment period
- Monitoring & verification to ensure environmental integrity without imposing barriers through prohibitive scrutiny
  - Precise quantities do not affect compliance, only integrity
  - *Hungarian example: ISO 14064 verification and sampling in smaller projects*

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Why could GIS deliver better in EE than CDM?

- Well-designed GIS better accommodates *small* projects
- GIS more flexible and can have lower transaction costs
  - Additionality ensured at scheme level and not project-level?
  - M&V simplified
- CDM/JI developed by private sector with short-term financial interests
- GIS: opportunity for govt-induced strategic mitigation
- Can also capture economic opportunities with long payback times
- GIS can extend beyond 2012, overcoming short window of opportunity

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Summary and recommendations

- GIS could be a better tailored carbon finance mechanism for EE than existing ones
- However, challenges for GIS 1.0 are significant
- Recommendations for maximising GIS 1.0's benefits for climate and society
  - Additionality to be ensured more rigorously
  - But more innovative approaches needed than CDM
    - scheme-level vs. project-level
  - Watchdog capacity to be strengthened
  - Do not copy/paste CDM/JI modalities
  - Focus on areas not easily reachable by BAU&policies, such as building EE retrofits
  - Allowing Post 2012 spending is pivotal
  - Compromising supported efficiency levels has serious lock-in penalty –> target highest efficiencies
    - Especially crucial for building retrofits

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Thank you for your attention

Watch out, they just keep promising this global warming thing, they keep promising, but you'll see they won't keep this promise of theirs either!

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GIS reports available at:

http://3csep.ceu.hu/node/72

Supplementary slides

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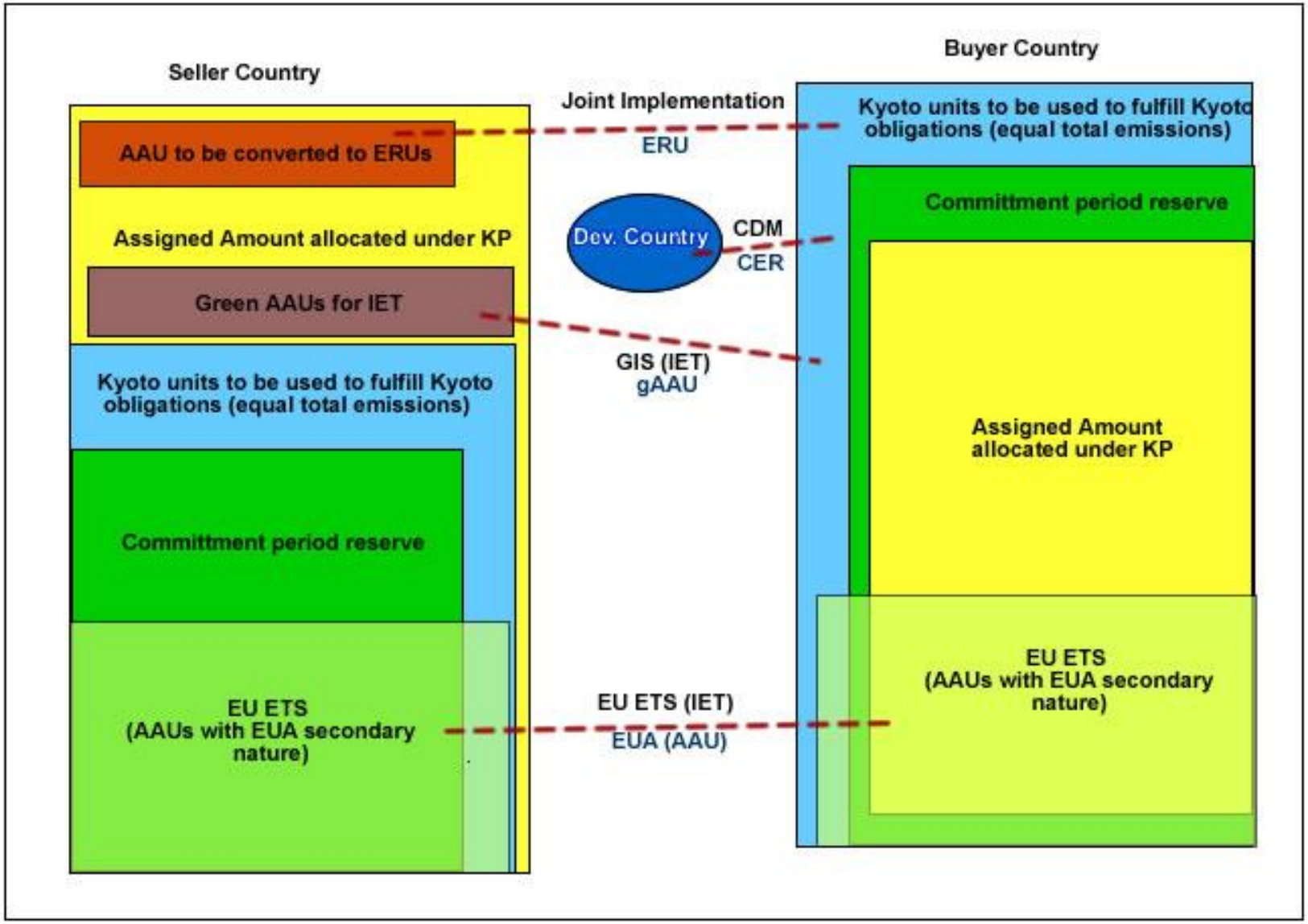
Transaction types of carbon assets among buyer and seller countries



Conclusions and outlook beyond 2012

- GIS can offer significant climate advantages by allowing ambitious action in areas crucial for long-term transition to de-carbonized economy.
- GIS could become model for a superior flexible carbon finance mechanism in post-2012 period.
- EU might adopt a guideline on preference towards purchasing AAUs from other member states to invest in climate mitigation there and thus facilitate compliance with its post-2012 commitments.

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Research methods and how they serve the various research objectives

Research components	Method of research
1. GIS architectures and modality options	Desk research: past literature on GIS, from the literature identify key modality elements. The modality and modality elements then used as a template to review each country's GIS development. These elements and options of modality serve as a basis for the GIS modality design.
2. Review of the experiences with the Kyoto Protocol's flexibility mechanisms: CDM and JI	Desk research: a) UNFCCC rules and regulations on CDM and JI; b) Literature on the barriers and constraints of CDM and JI; c) Expert consultations
3. Empirical analysis of the current status of GIS development	a) Survey: A survey was developed based on the modality elements and options after the review of the literature on GIS. The purpose of the survey was to identify the options these countries are choosing in the modalities of GIS; another survey was developed to shed light on the buyers' preferences on modality choices, which is also based on the modality elements and options identified in the first part of the research; b) Interviews: interviews served as a supplementary tool for the survey to further identify the details of modality choices countries made in GIS.
4. Case studies	Detailed assessment of the impact of modality choices on the effectiveness of GIS in selected high-priority target mitigation areas and possible project types: a) improved energy efficiency in buildings, Hungary b) bioenergy, Bulgaria c) land-use and bioenergy in Romania
5. Analysis based on the findings in previous steps	Analysis and compilation of the findings from the previous sections and proposal of modality choices to optimize GIS architectures to meet specific climate and societal goals, as well as serving best the chosen target sectors.

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Stakeholders in GIS

	Seller side: responsibilities	Buyer side: concerns
Government	Establish the GIS, which ensures the greening of AAU; Management of revenue from GIS to ensure the greening process implementation; Conduct verification, monitoring process to ensure the greening	The design of GIS ensures the greening of the AAU; The management of the AAUs is transparent and ensures the money is spent on agreed areas; Necessary monitoring and evaluation are in place.
Private sector	No private sector on selling side	Same as above

Source: adapted from Tengen et al. 2002

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Risks pertaining to Kyoto Protocol flexible mechanisms – buyer risks

Mechanism – in general	JI	CDM	GIS
The buyer faces and perceives the following main risks:			
(i) *Delivery risk:* that the Seller fails to deliver the units it has contracted to deliver (e.g. because it has overestimated its supply, because it no longer wishes to respect the contract, because of dispute, eligibility etc.)	**-**	**0**	**+**
Inability to deliver	**-**	**-**	**+**
Deliberate or negligent non-delivery	**0**	**-**	**+**
Force majeure	**-**	**-**	**0**
Remedies	**0**	**-**	**+**
(ii) *Greening risk:* that commitments to greening are not fulfilled, which results in the units being less valuable than anticipated by the buyer	**0**	**0**	**+**
(iii) *Political risk:* that the transactions entered into are not acceptable politically (e.g. because taxpayers are not convinced by greening commitments)	**+**	**+**	**0**

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Risks pertaining to Kyoto Protocol flexible mechanisms – seller and other risks

Mechanism – in general	JI	CDM	GIS
The seller faces and perceives the following main risks:			
(i) *Compliance risk:* that it commits to sell more units than it actually has free for sale	**0**	**0**	**+**
(ii) *Greening risk:* that it commits to delivering emission reduction but proves unable to ensure enough "greening" actually happens	**0**	**0**	**0**
(iii) *Counter-party risk:* that a counter-party to which it sells units fails to make payment for the units or is not eligible to receive units	**0**	**0**	**+**
(iv) *Political risk:* that negative political reaction occurs (for example in the event of an increase in prices following a fixed price sale)	**+**	**0**	**-**
(iii) Porfolio over-exposure	**0**	**-**	**+**
Other risk considerations:			
(i) Market risk: Price fluctuations	**0**	**0**	**+**
(ii) Advance payments and risk management	**-**	**-**	**+**

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Barriers for energy efficiency methodology approval

	Conventional approach of CDM	**Energy efficiency methodology barriers**
Applicability: methodology to define **proceedings which are directly applicable to project activities**	Technology based; bottom-up approach	Employ an empirical approach, performance parameter or benchmarking and facility-level-bundling approach
Baseline approach	Historical baseline; emissions of an economically attractive course of action; taking into account barriers to investment	The different categories of energy efficiency are difficult to be fit into the clear-cut baseline
Additionality analysis	Investment analysis; barrier analysis	Investment analysis not easy to be approved
Emission calculation		Difficult to address the issue of capacity expansion; rebound effect; endogenous energy efficiency improvement

Source: adapted from Hayashi and Michaelowa, 2007; Muller-Pelzer and Michaelowa, 2005

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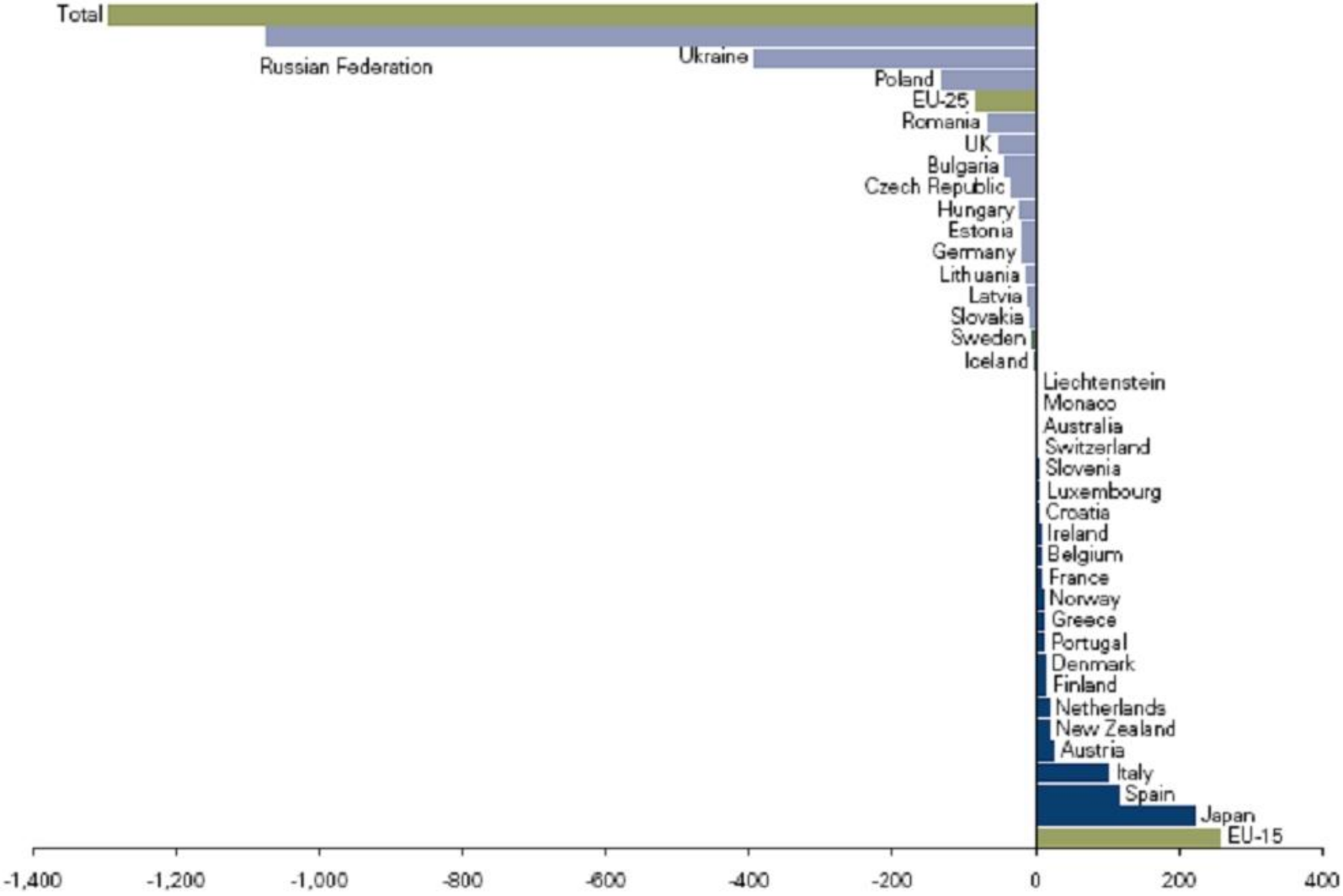
Gross demand-supply balance for the Kyoto market ($MtCO_2e$/year)



Source: Point Carbon

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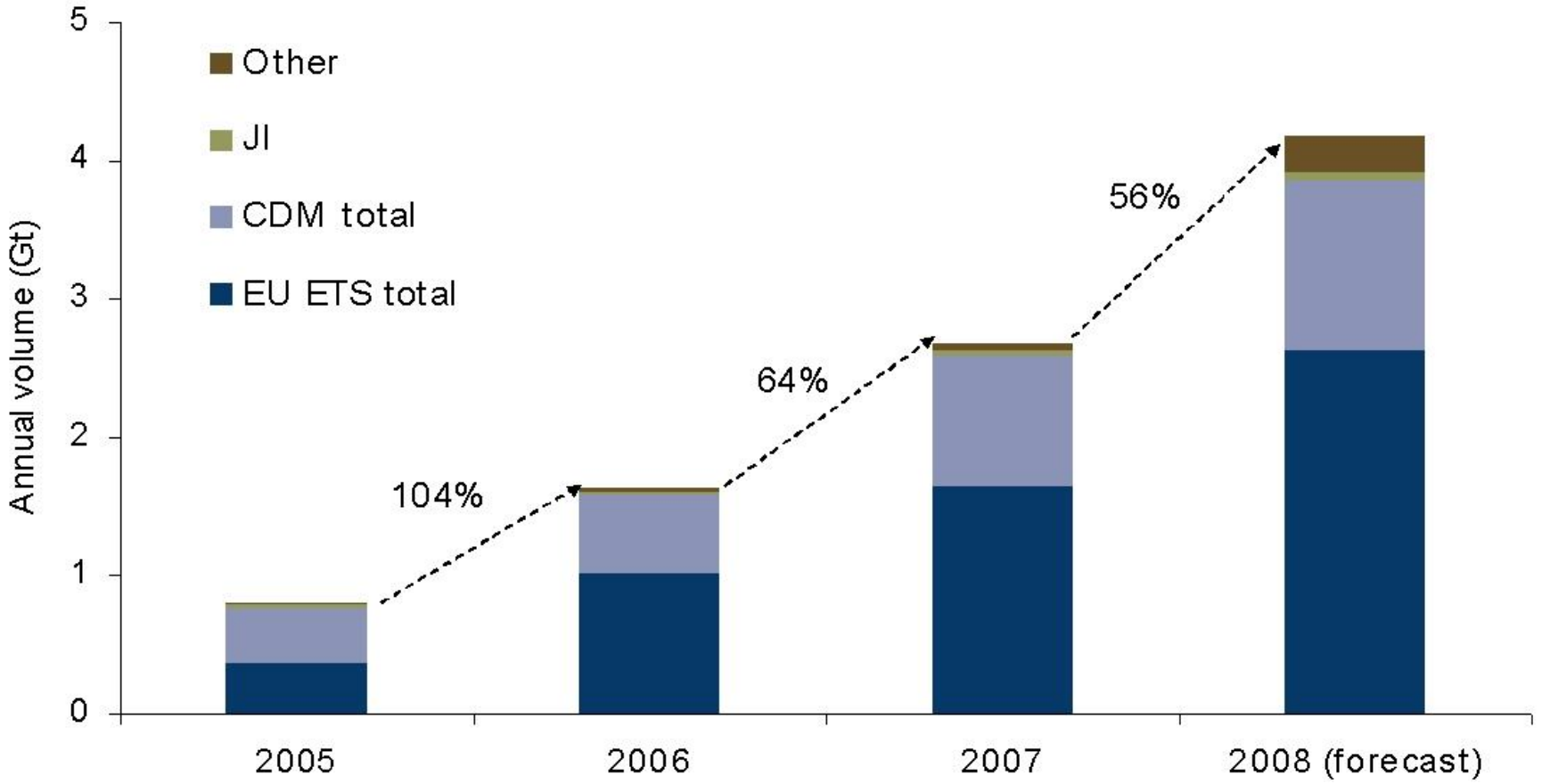
The size of the carbon market



Source: Point Carbon

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IET eligibility status and JI Track-1 procedures

	Becoming eligible For IET and Track-1 JI	Have operational ITL connection since	Have adopted Track-1 JI procedure
Bulgaria	(25 November 2008 - Expected)	16 October 2008	No, but in the near future
Czech Republic	21 February 2008	16 October 2008	Yes
Estonia	15 April 2008	16 October 2008	No
Hungary	30 December 2007	11 July 2008	Yes
Latvia	29 April 2008	16 October 2008	No, but in the near future
Lithuania	22 April 2008	16 October 2008	No, but in the near future
Poland	29 April 2008	16 October 2008	No
Romania	1 September 2008	16 October 2008	Yes
Russia	20 June 2008	4 March 2008	No, but in the near future
Ukraine	29 April 2008	28 October 2008	Yes

Source: www.unfccc.int, 2008; Survey done by the authors, 2008

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Interaction between modality options and priority investment areas

Modality for operation	Modality options	Priority area for investment		
		Retrofitting buildings	Bioenergy projects	Climate change awareness raising
Fund allocation	Grants	++	+	++
	Soft loan	++	++	--
	Credit guarantee	++	++	--
Beneficiaries	Central and local government	++	++	--
	Government owned / municipally owned companies	++	++	--
	Private companies	-- (Violation of the state aid rule)	+	++
	Non-profit companies	+	+	++
	NGO	-- (don't have the capacity)	--	++
	Physical person	++	++	++
GIS timeframe	First commitment	++	++	++
	Late crediting	-- (if credit guarantee is chosen as fund allocation option)	+	--
Crediting period	5 yr	--	--	/
	10 yr	--		/
	10 or more	++	++	/
Project selection	Top down	++	++	--
	Bottom up	--	--	+
	Tender	++	++	+

Prioritisation of target areas for GIS investments: criteria

- Pivotal to assure environmental integrity through additionality
- Maximization of climate benefits
- Gains for national social, political, and regional development priorities
- Practical feasibility, dispensability and transaction costs of GIS
- Important to ensure monitoring and verification of emission reductions

➔ ***Targeting difficult-to-reach areas with long-term benefits, rather than harvesting „low-hanging fruits"!***

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Priority areas for investment in GIS schemes being developed in CEE

	Potential Greening activities	Country examples
Hard greening	Retrofitting old buildings	HU, LV, UA, CZ, RO
	Energy efficiency in buildings	HU, LV, CZ, RO
	Construction of small co-generation installations	RO
	Rehabilitation of district heating systems	CZ, LV, UA, RO
	Renewable energy (small-scale)	HU. LV, RO
Soft greening (according to buyer preferences ranking)	GIS management capacity building	CZ
	Capacity related climate change awareness	
	Monitoring and observation on climate system	
	Building capacity on climate related legislation and policy	LV

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GIS architectures and modality choices in countries with GIS in progress – Part 5

	Hungary	Latvia	Ukraine	Czech Republic	Romania
Fund allocation	Grants	Grants	Grants	Soft loans and grants	Grants and soft loans
Beneficiary	Non-profit co.; central and local authorities; NGOs; physical persons; for second phase potentially private companies	Private companies; non-profit co.; central and local authorities; NGOs; physical persons	Private companies, government owned/ municipally owned companies	TBD, but preferably physical persons	Private companies, non-profit organizations, central and local authorities, NGOs, physical persons
Project selection	Tender	Tender	Tender and top-down	Tender	Top-down and tender

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GIS architectures and modality choices in countries with GIS in progress – Part 6

	Hungary	Latvia	Ukraine	Czech Republic	Romania
Priority areas targeted	For the pilot phase: Energy efficiency in residential and public sectors; renewable energy for heating; biogas production for transportation purposes; activities for reductions of non-CO2 emissions	For hard greening: energy efficiency in building sector; small scale RE; heat distribution in district heating systems; industrial power intensity. Soft greening: innovative low carbon technologies; capacity building for climate change policy design.	Housing and public utilities, reconstruction of district heating systems, forestry, water supply	Hard greening: retrofit of old building stock; promoting energy efficiency in buildings, energy efficient appliances; biomass for district heating. Soft greening: administrative procedures	Hard greening: rehabilitation of district heating systems; construction of small co-generation installations (non-ETS); recovery of methane generated by urban waste landfills; fuel-switching in energy productive installations (non-ETS); reducing non-CO2 emissions in industrial installations; energy efficiency in buildings (public and private); GHG emission reduction in agriculture and transports sector and forestry. Soft greening: TBD

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Aims of the research

- How to optimise GIS for maximising its benefits for climate and society
- …i.e. how this flexibility can be utilised to benefit from it and avoiding the risks

Through:

- Analysis of lessons to be learned from CDM/JI for GIS design
- Applying these lessons and other criteria, GIS architecture modalities are assessed
- Three case studies were conducted (Hungary, Romania, Bulgaria)

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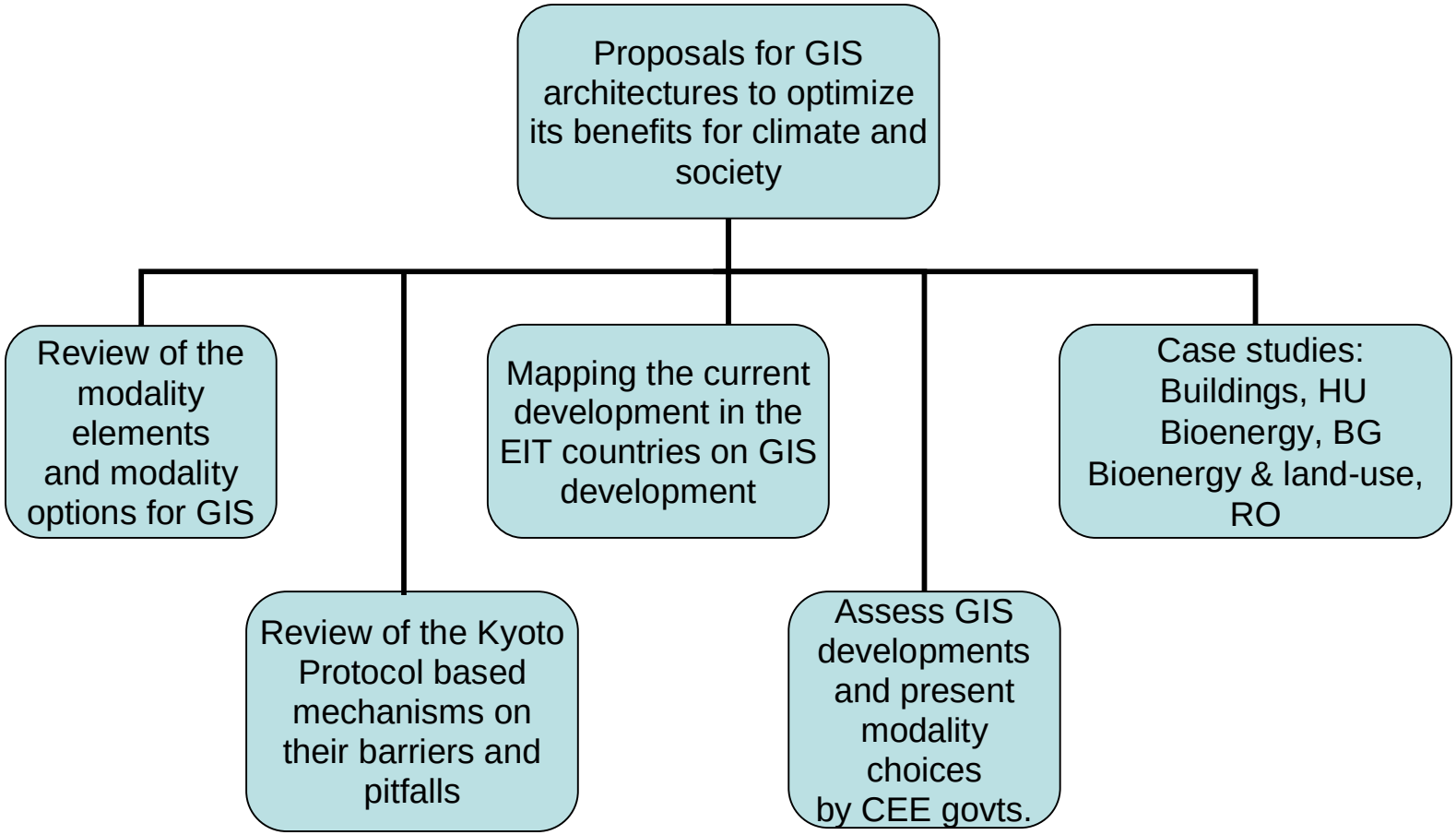
Schematic outline of the research plan



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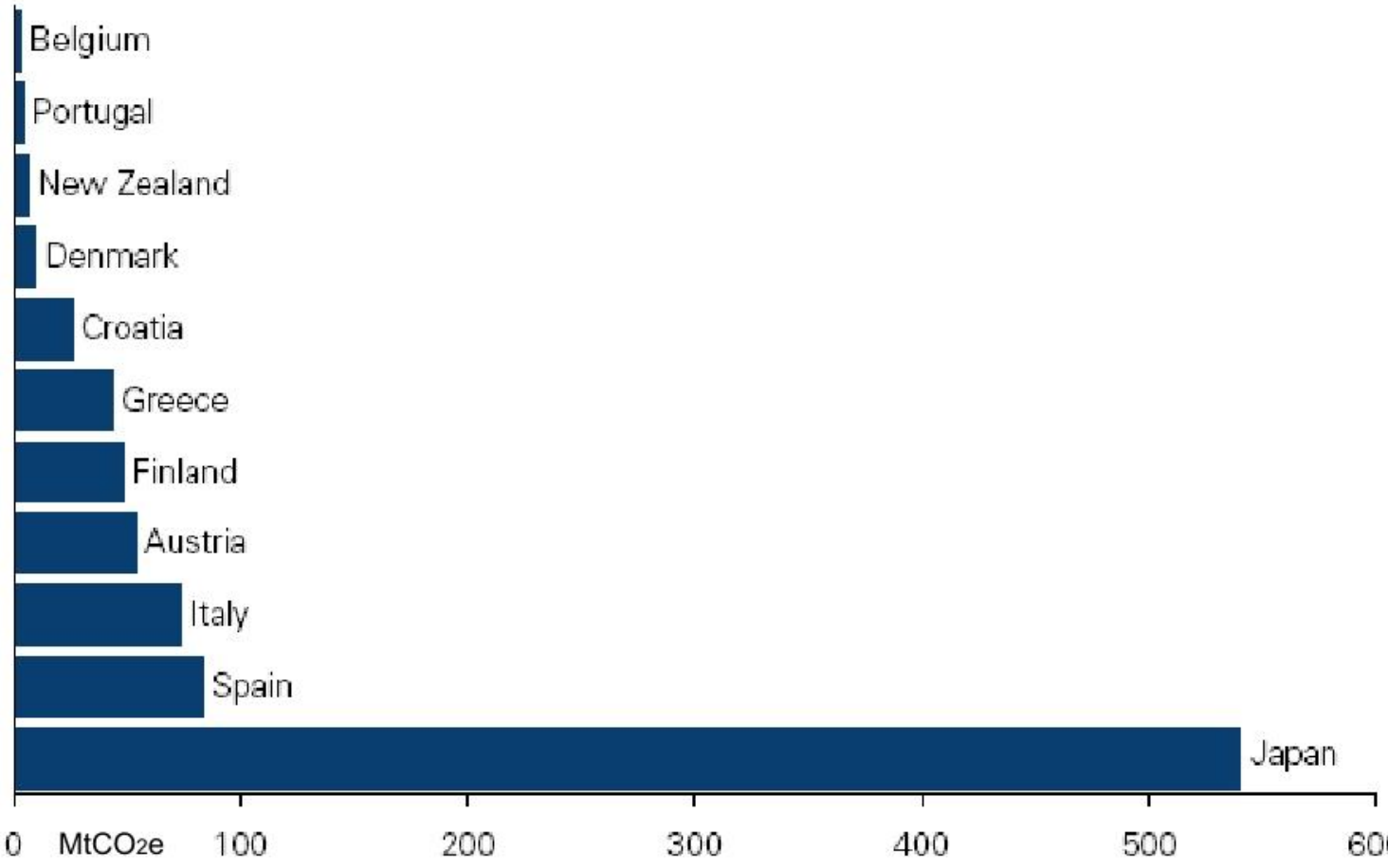
Net demand of AAUs,

after taking into account sink provisions under KP Annex Z, planned purchases of CERs and ERUs, and domestic reduction measures



Source: Kristian Tangen, Point Carbon

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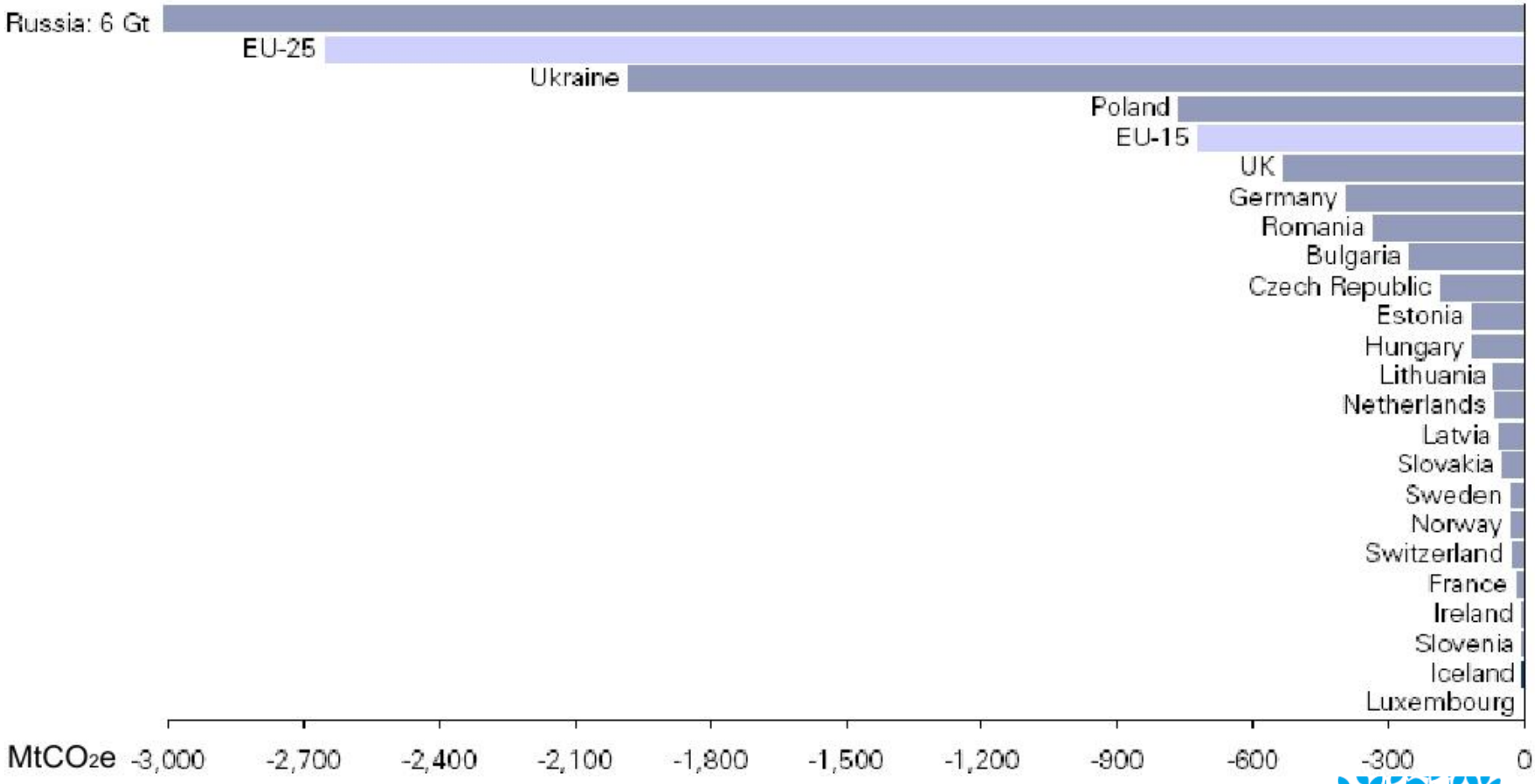
Net supply of AAUs,

after taking into account sink provisions under KP Annex Z, planned purchases of CERs and ERUs, and domestic reduction measures



Source: Kristian Tangen, Point Carbon

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GIS-based AAU supply by major selling countries during 1st commitment period and potential revenues at € 10/ton

Country	Czech Rep.	Hungary	Latvia	Poland	Roma-nia	Russia	Ukraine
$MtCO_2$-eq	Up to 100	50	30	Up to 100	Up to 100	0	100-1200
Billion EUR	Up to 1	0.5	0.3	Up to 1	Up to 1	0	1 - 12

Source: Estimates by Point Carbon and The Carbon Trust, 2008

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Prioritising GIS target areas

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Characteristics for GIS 1.0 target area choice

- Buyer's market
  - Main preference: environmental integrity
  - Thus: ADDITIONALITY
  - Transparency and accountability
- Maximising gains towards national, social, political and regional development priorities
- **Channeling revenues to areas difficult-to-reach by other policies** (vis-à-vis harvesting the low-hanging fruit)
- Practical feasibility, dispensability and transaction costs

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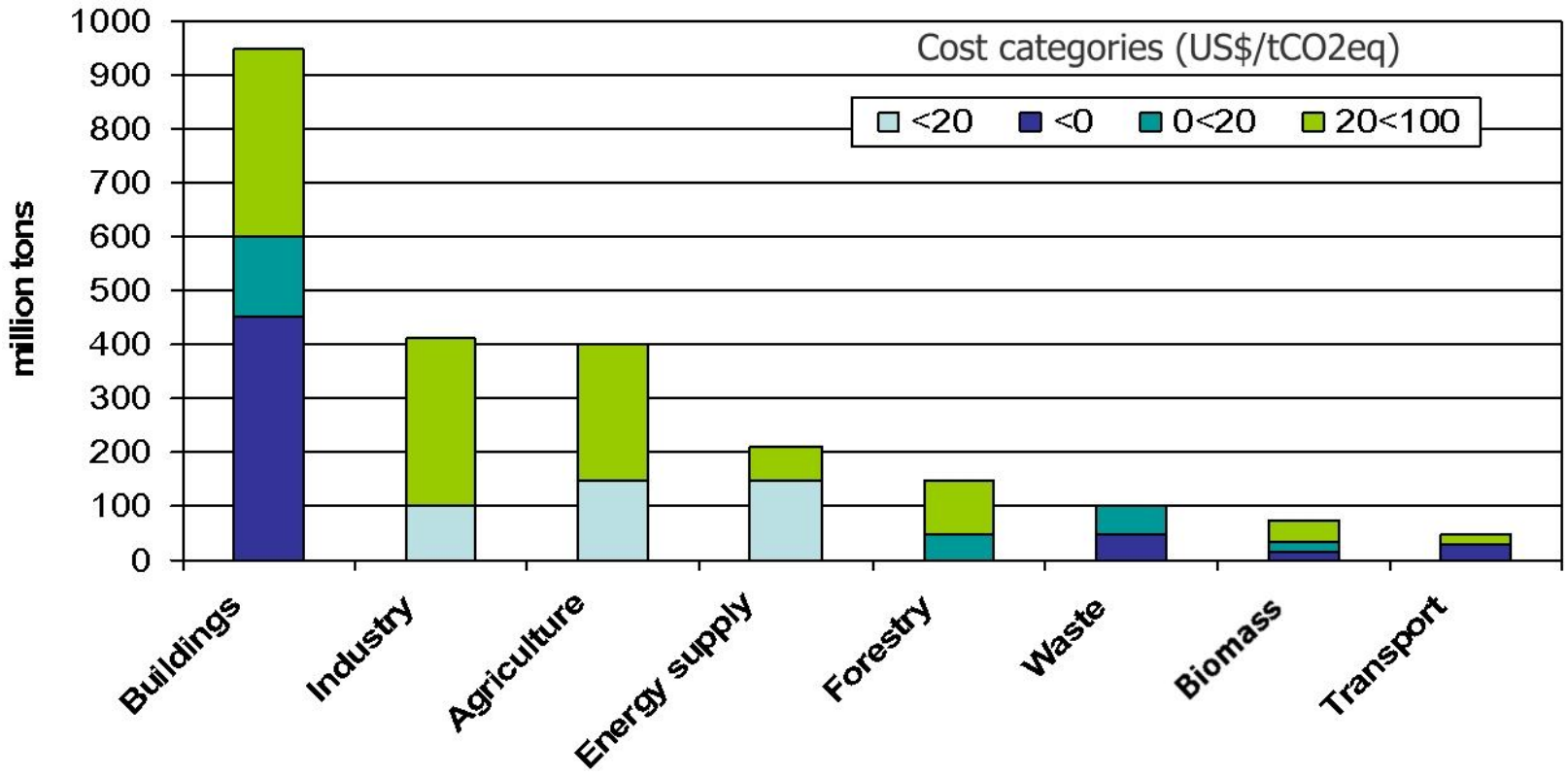
GHG mitigation potential in EIT* by economic sector, 2030



Source: Ürge-Vorsatz and Novikova 2008, with data from IPCC 2007

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*EIT = Economies in transition

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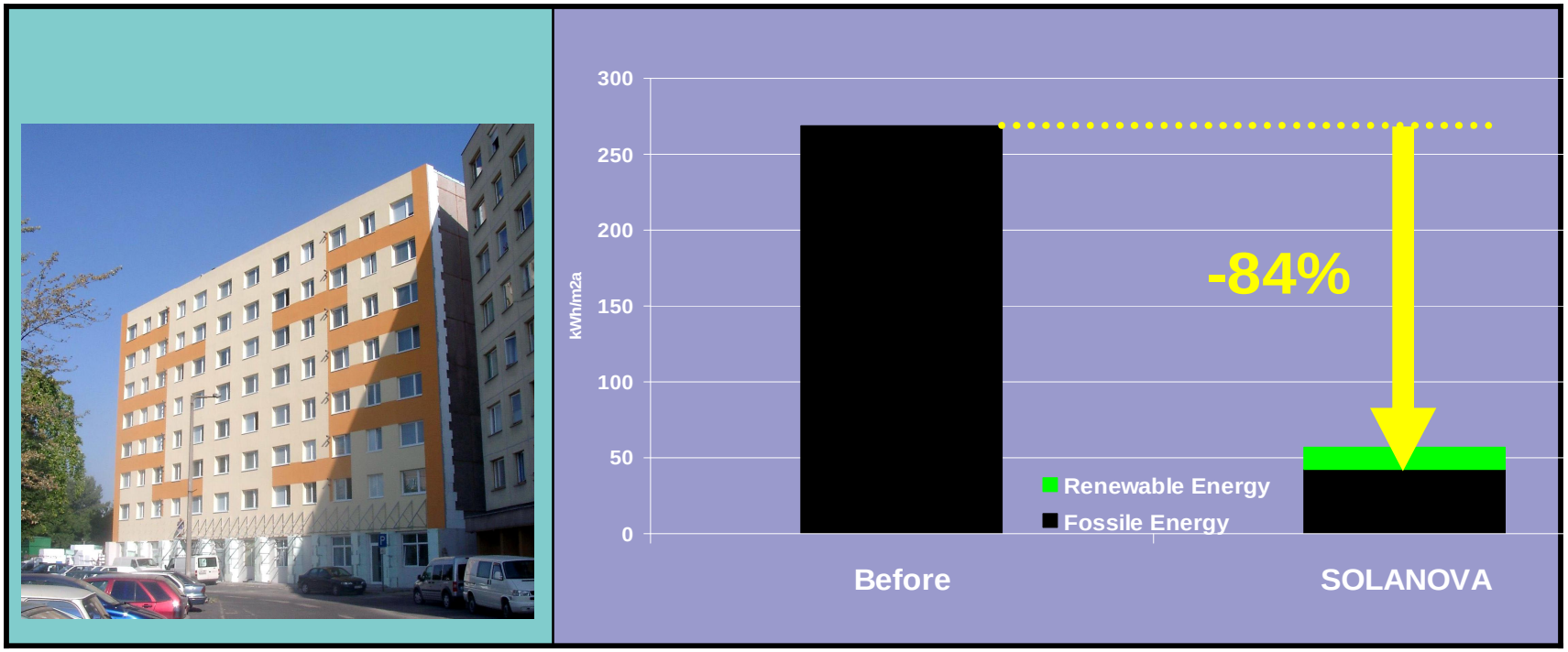
“EU buildings – a goldmine

for CO2 reductions, energy security, job creation and addressing low income population problems”



Source: Claude Turmes (MEP), Amsterdam Forum, 2006

More on Solanova: www.solanova.eu

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Priority target areas for GIS investments in CEE

- Focus on long-term low-carbon infrastructure
- Low-energy retrofit of old building stock
  - ⇨ **Pivotal to invest in *very low energy* construction and retrofit, due to long lifetime**
  - ⇨ Numerous co-benefits (health and comfort improvements, employment creation, higher energy security, etc.)
- Land-use projects in suitable target countries (e.g. RO, BG, PL, RU, UKR)
  - ⇨ Co-benefits like income creation for rural population and increased biodiversity
- Biomass-based heating
- Hard greening preferred over soft greening!

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Recent AAU developments

- **Winter 2008:**
  Slovakia sells 10 million AAUs to private company
- **First half of 2009:**
  Ukraine sells 30 million AAUs to Japan in February;
  further sales of up to 70 million AAUs expected:
  - ⇨ 40 million by Czech Republic (in world's first auction of its kind)
  - ⇨ 10 million by Hungary (overshadowed by freeze in GIS spending)
  - ⇨ 10 million by Poland (necessary legislation currently being finalised)
  - ⇨ 10 million by Latvia
  - \+ potential sales by Romania and Slovakia as well
- AAU prices so far between € 6 and > € 14 (€ 10 in latest Ukraine-Japan deal), current price levels seen below € 10
- Developments hard to predict due to falling carbon prices
  - → *Czech auction postponed to "redraw strategy"*
  - → *Polish government criticized for sluggish legislation when prices were still higher*

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Optimising GIS architectures

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Key GIS modality elements and options – Part 1

Modalities	Design options	Explanations
How is the money earmarked? What is the budgetary option?	**State consolidated budget**	The money goes to state budget and is consolidated with other funding. Allocation is made to the areas predefined in AAU sales.
	State special budget	Money goes to a special budget without consolidation.
	Extra budgetary fund	Money goes directly to a special fund.
Type of greening	**Hard greening**	GIS funding invested in projects with quantifiable emission reduction
	Soft greening	Funding to an area with non-quantifiable emission reduction
	Mixed	If mixed model is to be chosen, the key question will be how to decide on the ratio between the two.
Greening ratio		The ratio of emission reductions accruing from greening activities to the amount of AAUs transferred in exchange of the funds channeled to these activities

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Key GIS modality elements and options – Part 2

Modalities	Design options	Explanations
Additionality	**Legal additionality**	There is no obligation under law to materialize the project/investment
	Financial additionality	There is no double support for the same emission reduction
	Environmental/ Climate additionality	New environmental/climate benefits will arise
Crediting period	**First commitment period**	Emission reduction from the GIS investment is monitored and accounted for only during the first commitment period
	Extends beyond 1st commitment period	Emission reduction from the investment is monitored and accounted for beyond 2012
Policy/program approach vs. project approach	**Project approach**	Stand-alone project, with a clear-cut project boundary
	Policy/program approach	Greening activities with discrete nature, dispersed but in great aggregate number
	Combination	Combined project and programmatic/policy approaches

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Key GIS modality elements and options – Part 3

Modalities	Design options	Explanations
Fund allocation	**Grants**	Amount corresponding to the quantity of reduced emissions
	Soft loans	Loans with below-market interest rates & longer repayment periods
	Credit guarantees	Guarantees for credits granted by other institutions
Beneficiary	**Private firm; NGO; Central or local government; Physical persons; Government owned/ municipally owned companies**	
Timeframe of the GIS	**Standard crediting**	The greening activities take place between 2008 and 2012.
	Early crediting	Early crediting is defined as the greening activities could happen before 2008. (violating additionality)
	Late crediting	The greening activities take place after 2012.

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Key GIS modality elements and options – Part 4

Modalities	Design options	Explanations
Monitoring and verification of the GIS greening activities	**Intervention type baseline**	Baseline is established according to the type of emission reduction intervention among given circumstances
	Sectoral standard baselines and multi-project emission factors	A baseline calculation is grounded on shifting the focus of monitoring and verification "from a project-by-project level to a sector-wide level"; GHG emissions are considered to originate from "a range of sources defined as a sector" (Baron and Ellis, 2006).
	Domestic version of internationally ap-proved Track-2 JI and CDM methodology	CDM and JI methodology, verified not by third party but by the hosting country
	Negotiated baselines	Buyers and sellers negotiate the baseline by each transaction
Project selection process	**Top-down**	National priority area, depends on government decision, through regional or sectoral distribution
	Bottom-up	Open application procedure where additionality and emission reduction potential decide priorities

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GIS architectures and modality choices in countries with GIS in progress – Part 1

	Hungary	Latvia	Ukraine	Czech Republic	Romania
Greening option	Hard greening	Hard + soft	Hard + soft	Hard + soft	Hard + soft
Program-matic/ project	Project + pro-grammatic approach	Project + pro-grammatic	Project approach	Project + pro-grammatic	Project + pro-grammatic approach
Budgetary option of the fund	Money goes directly to the special account at Ministry of Environment and Water	Money enters budgetary account in state treasury, then disbursed to CCFI	Money enters a special account within the national budget	Money enters a special account under MOE, not entering the state budget	Revenues go into a special budget of the Environmental Fund or a Specialized Unit in the Ministry

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GIS architectures and modality choices in countries with GIS in progress – Part 2

	Hungary	Latvia	Ukraine	Czech R.	Romania
Additionality requirements	Climate additionality: all GIS activities will result in quantified emission reductions, which are verifiable. Legal additionality: support in the areas where there is either no financing or other state or EU funding is available, but there is a need for producing additional emission reduction over what is mandated by requirements for other support.	No information	UKR wants to ensure additionality through projects in the areas which were not adequately addressed by JI (e.g. buildings sector, afforestation). In addition, UKR does not have international financing (such as EU structural funds), and national financing is not enough, so financial additionality is in place.	No information	Not applicable (the country has dismissed the notion of additionality altogether)
Baseline	Programmatic windows – sectoral baseline Project window: TBD	TBD	Sectoral baseline; domestic version of CDM and JI methodology	Sectoral baseline & negotiate with buyers	No baseline

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GIS architectures and modality choices in countries with GIS in progress – Part 3

	Hungary	Latvia	Ukraine	Czech Rep.	Romania
Verification	Small project: a) carbon efficiency calculation and desk review; b) a random check; c) after the project realization check on performance of the applicant. Large project: ISO standard is employed.	TBD	Independent entity, mostly likely domestic, to issue determination report; a window for buyers' participation in M&V (but it is not legally warranted, as of November 2008)	Independent national auditor, most likely National Environmental Fund to perform M&V	No or simplified verification
Monitoring and verification	Financial audit; Reported by the MOEW in the format of a report according to ISO 14064 standard; An advisory board monitoring of GIS overall.	Financial + project conformity; assessment of the greening result	Monitoring plan is proposed by the project beneficiary, no concrete rules on how monitoring is regulated at this stage	Yearly report which covers the monitoring of money, projects and results	Only monitoring of projects implementation (in some cases simplified monitoring and verification of emission reductions)

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GIS architectures and modality choices in countries with GIS in progress – Part 4

	Hungary	Latvia	Ukraine	Czech Republic	Romania
Crediting period	Till 2020 in case of buildings related projects and end of 2012 in other cases	TBD	First commitment period	15 years	Post 2012, no defined crediting period
Timeframe	First commitment period	TBD	First commitment period or beyond	TBD	Extended to next commitment period
Greening ratio	Not predetermined – will be established ex-post, but studies show efficiency and potential of measures		Not applicable	1:3 to 1:4	Not applicable

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Recommendations for GIS architecture design modalities, in order to optimize benefits for climate and society – Part 1

Modality category	Issues in modality choice and recommended modality, if applicable
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 spendings through soft greening are difficult.
Programma-tic / 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 of CEE host countries, it is important that revenues enter special accounts from which the money cannot be legally paid out on other spendings.

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Recommendations for GIS architecture design modalities, in order to optimize benefits for climate and society – Part 2

Modality category	Issues in modality choice and recommended modality, if applicable
Additionality require-ments	Additionality is essential for ensuring the environmental integrity of GIS. 3 types: 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 legislative framework, but 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 the 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.

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Recommendations for GIS architecture design modalities, in order to optimize benefits for climate and society – Part 3

Modality category	Issues in modality choice and recommended modality, if applicable
Crediting period	Allowing post-2012 crediting is important in order to avoid that GIS only picks 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 1st 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.

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Recommendations for GIS architecture design modalities, in order to optimize benefits for climate and society – Part 4

Modality category	Issues in modality choice and recommended modality, if applicable
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 there is no co-financing.
Priority areas targeted	Due to the one-time 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 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; land-use if applicable in host country.

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GIS vs Track-1 JI (cdm)

Why risk GIS if almost the same as Track-1 JI?

- In EU JI is strongly limited due to linking dir.
- Most CEE countries opt to copy Track-2 in Track-1, thus its flexibility cannot be taken advantage of
- GIS more flexible in high priority areas and can have lower transaction costs
- JI developed by private sector with short-term financial interests
- GIS: opportunity for govt-induced strategic mitigation
- GIS can extend beyond 2012, overcoming short window of opportunity
- GIS: can better accommodate smaller projects
- More suitable for projects needing large upfront payments

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