Has Joint Implementation reduced GHG emissions?

Lessons learned for the design of carbon market mechanisms

COP21 Side-Event

The role of ambition under the Paris climate treaty and the impact of hot air on the EU's climate policies

Paris, 2 December 2015

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Background

- **Study commissioned by Austria, Finland and Switzerland**
- **Focus: Environmental implications**
  - Environmental outcome of JI
  - Lessons for mechanisms under the Paris Agreement
- **Methodological approach**
  - Document review of 60 randomly sampled projects
  - Detailed assessment of the six largest project types, covering about 80% of ERUs
  - Assessment of institutional arrangements in the four largest host countries
  - Interviews with project developers

Does the env integrity of JI projects matter?

Would global GHG emissions be higher, lower, or the same in the absence of JI, keeping everything else constant?

It depends...

1. **Environmental integrity of projects**
   - Additionality
   - Over- or under-estimation of emission reductions
2. **Accounting issues**
   - Ambition of KP targets / existence of “hot air”: What would otherwise happen to the hot air?
   - Are the projects’ emission reductions reflected in GHG inventories (“GHG inventory visibility”)?
   - What would buyers otherwise have done?

Impact on global GHG emissions

Ambition of host country emissions target	Project characteristics		Reflection of emission reductions in host country inventory	
			Yes	No
No surplus / no hot air	Additional and…	…correctly credited	Zero	Decrease
		… overcredited	Zero	Decrease
		…undercredited	Zero	Decrease
	Not additional		Zero	Zero
Surplus / "hot air"	Additional and…	…correctly credited	Zero	Zero
		… overcredited	Increase	Increase
		…undercredited	Decrease	Decrease
	Not additional		Increase	Increase

=> 95% of ERUs issued in countries with large “hot air”

Likelihood of additionality of JI projects

Source: Random sample of 60 projects assessed in detail

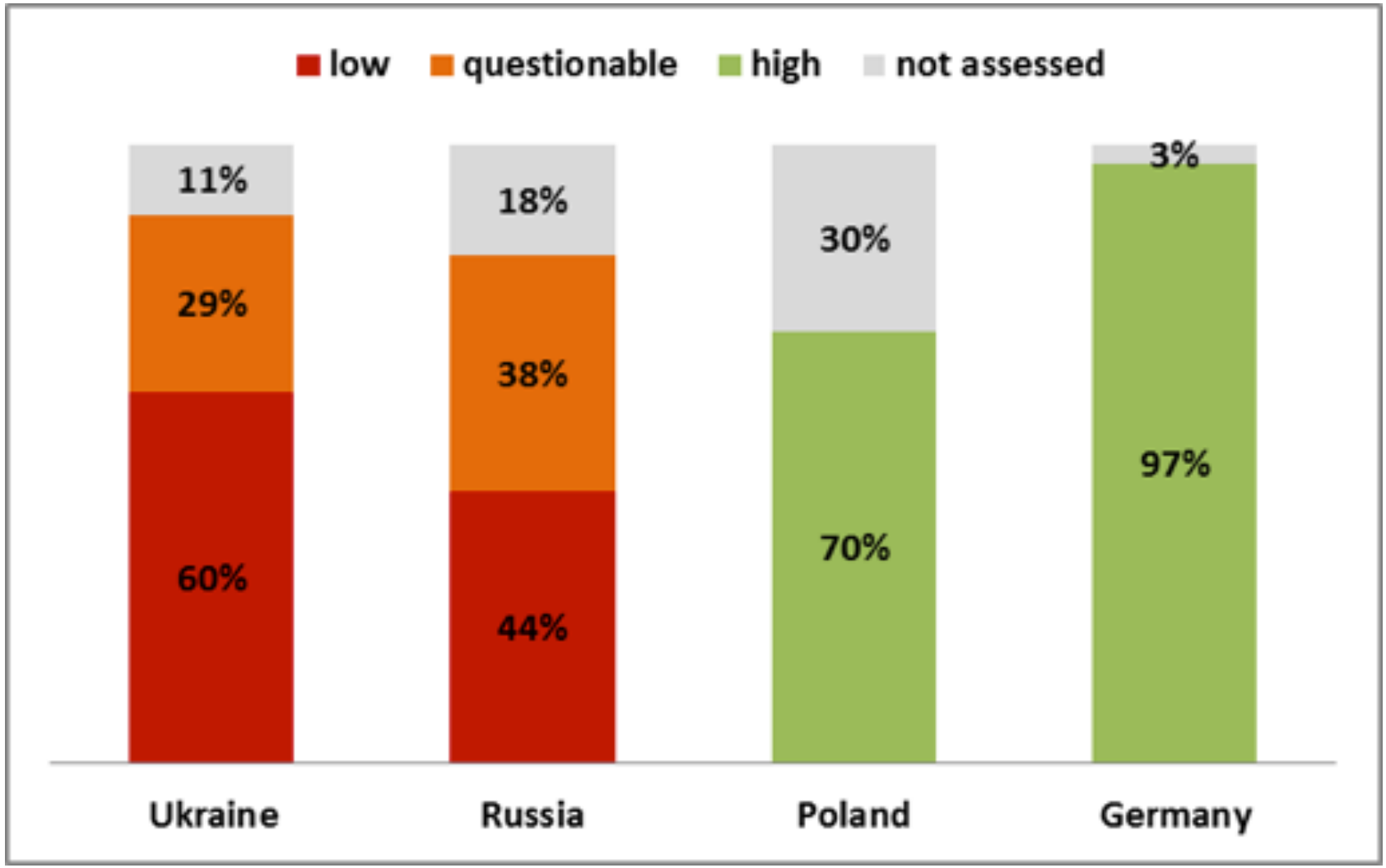
Assessment of the largest six project types

Project types	Registered projects	% of ERUs	Additionality	Over-crediting	Inventory inconsist-encies	Overall environ-mental integrity
Spontaneous ignition of coal waste piles	78	26.1%	Not plausible	Likely to be very significant	Significant	Low
Energy efficiency in industry and power production and distribution	164	23.1%	Questionable	Not known	None found	Questionable
Associated petroleum gas utilization	22	13.9%	Not plausible	Likely to be very significant	Significant	Low
Natural gas transportation and distribution	32	9.8%	Not plausible	Some over-crediting likely	None found	Low
HFC-23 abatement from HCFC-22 and SF_6 abatement	4	6.4%	Plausible	Likely to be very significant	Significant	Questionable
N_2O abatement from nitric acid	41	4.5%	Plausible	Unlikely	Largely consistent	High

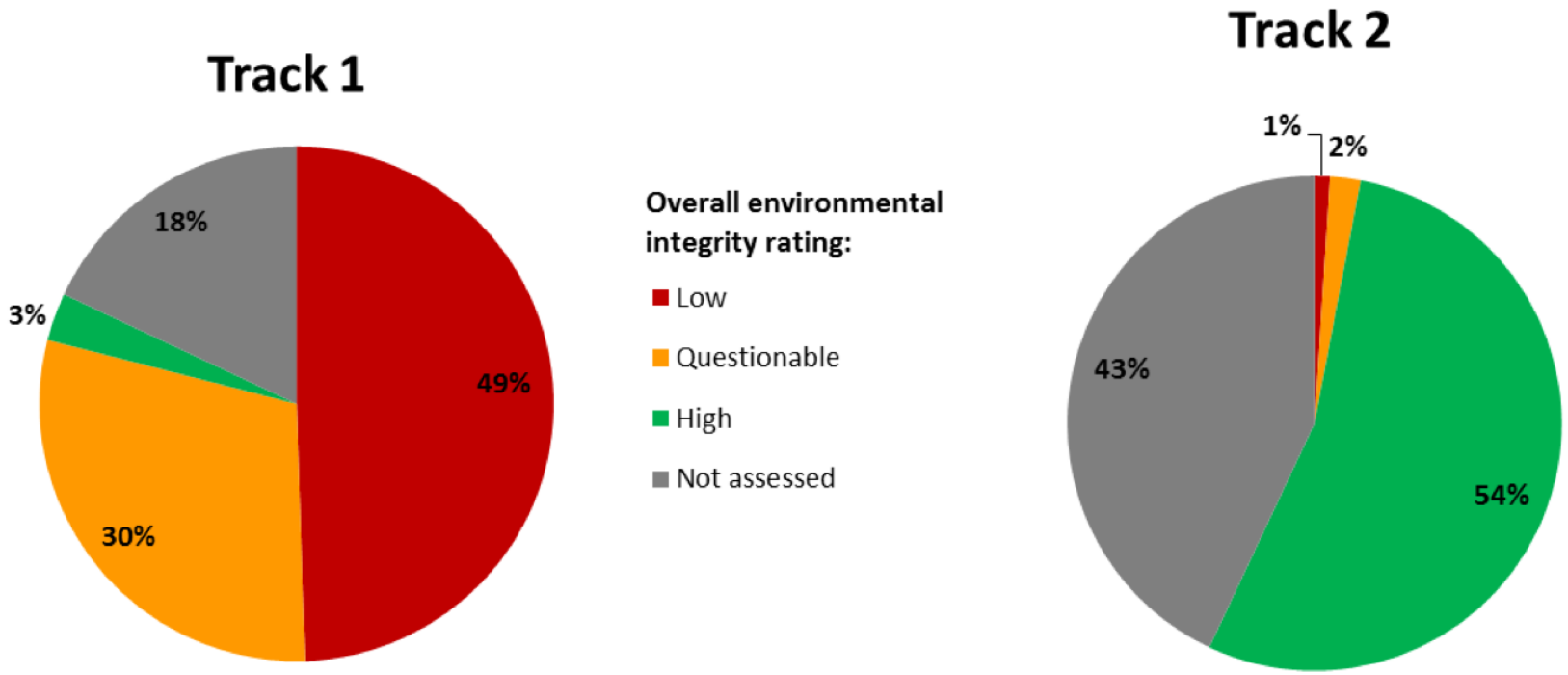
Source: Authors' analysis.

⇒ **Only one project type with overall high quality**

Differences by host country



Differences between JI track 1 and 2



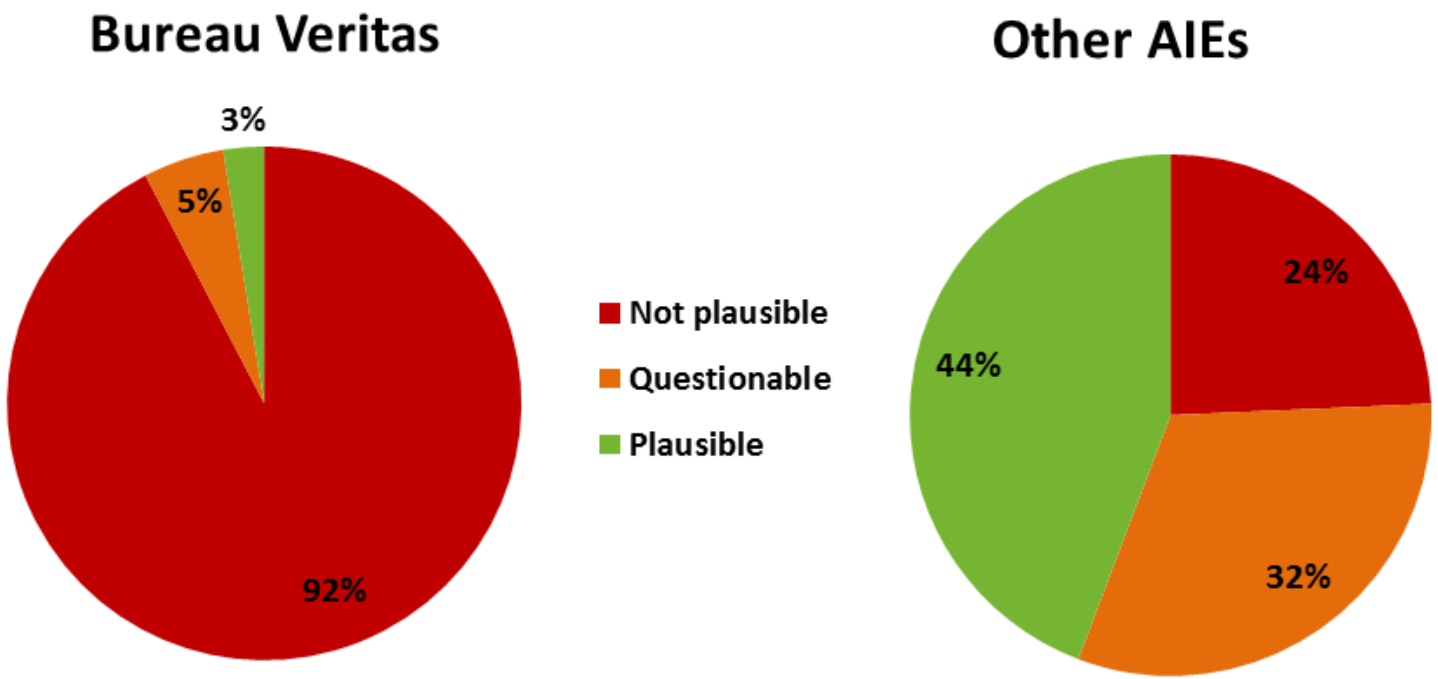
Track 1: Host country oversight

Track 2: International oversight

=> 97% of ERUs issued under Track 1

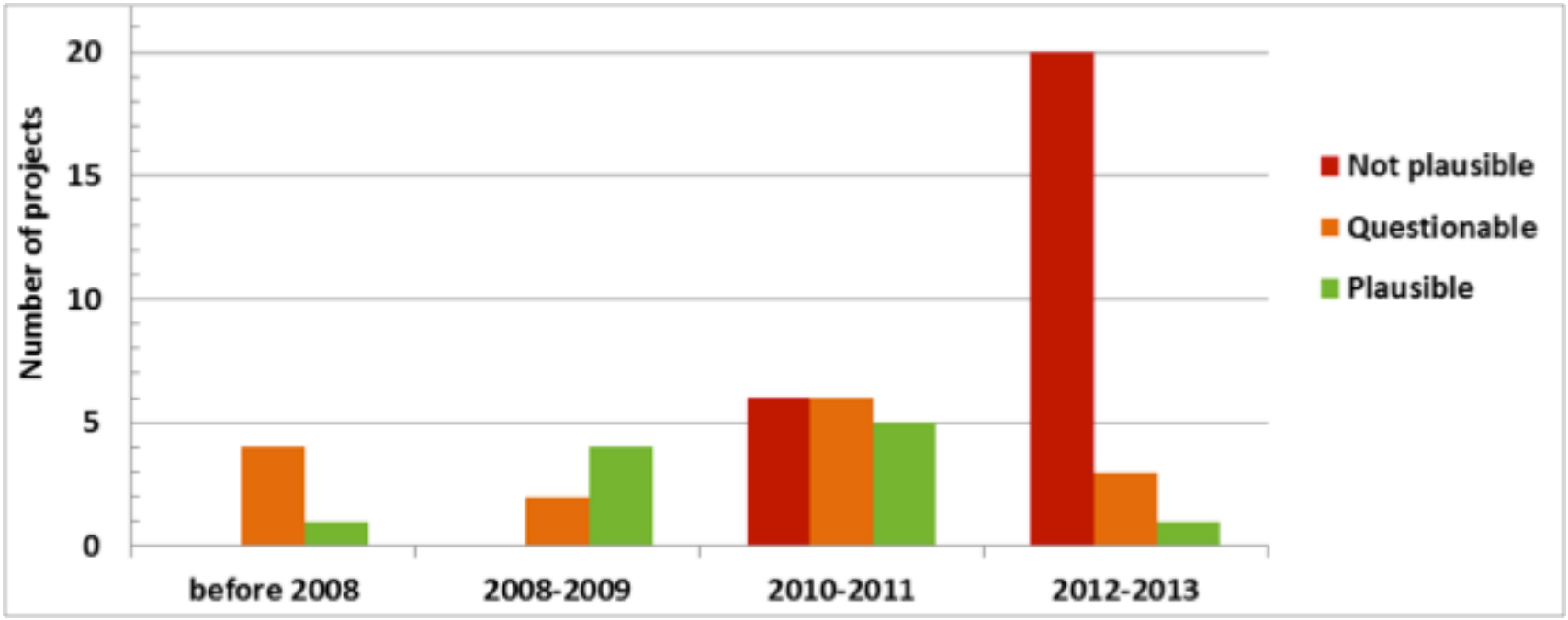
Differences between auditing companies

Plausibility of additionality claims of the sampled projects by AIE conducting determination, by ERUs issuance



Data source: Random sample of 60 projects drawn from UNEP Risoe (2014), excluding the six projects for which we did not have PDDs.

Differences over time



=> Early projects have higher quality than projects approved in 2012-2013

Key findings

- **Massive late ERU issuance in Ukraine and Russia**
- **Overall poor environmental integrity of JI track 1**
  - Retroactive crediting highly problematic
  - Perverse incentives had substantial impact
  - JI specific methodologies often inappropriate
  - Poor performance of AIEs – no track 1 oversight
  - Host country oversight was not sufficient
- **Impact on GHG emissions**
  - Global: ≈ 600 $MtCO_2e$
  - EU ETS: ≈ 400 $MtCO_2e$
- **Inconsistencies with GHG inventories**
- **Lack of transparency**
- **Uncertainty for investors**

Recommendations

- **International oversight on mechanisms**
  - Project cycle
  - Methodologies
  - Accreditation system
  - Transparency
- **Ambition and scope of INDCs**
  - High ambition needed to avoid “hot air” trade
  - Multi-year emission budgets required
- **International rules for accounting of unit transfers**

Will these elements be implemented under the Paris Agreement?

Thank you for your attention!

Full study: http://www.sei-international.org/publications?pid=2803

Policy brief: http://www.sei-international.org/publications?pid=2802

Nature Climate Change: http://dx.doi.org/10.1038/nclimate2772

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