Methane in the Middle: Abating the only Short-lived Long-lived Climate Forcer

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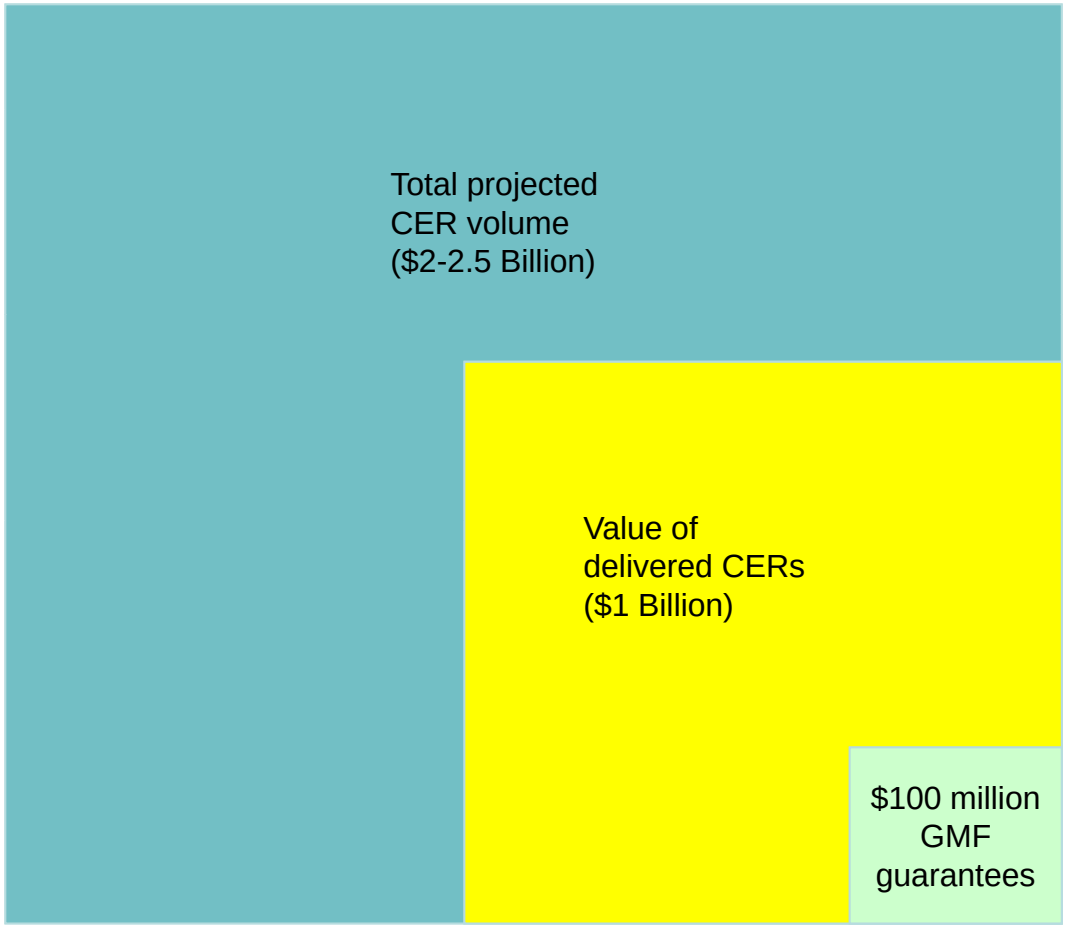
Key takeaways:

- The Fund could operate based on government guarantees and pledges, rather than direct contributions
- If the floor price is chosen judiciously, the risk to fund donors can be minimized
- For each $100 million in Fund pledges, it is estimated that the GMF could guarantee between $2-2.5 billion of projected CERs from methane reduction projects.
- Of this amount, taking into account project failure rate, it is estimated that $1 Billion of CERs would be successfully delivered. Therefore, the effective leverage rate of the fund is approximately 10-to-1.
- The level of reductions could be achieved by offering a guarantee of approximately €11.50 or $15/ton. This price floor need to be adjusted based on market conditions at time of project guarantee.
- For much of the project lifetime the Fund would likely generate net income based on guarantee agreements. This may also support other Fund activities or support for other methane reduction efforts (CDM registration, M2M, regulatory developments etc).
- The Global Methane Fund offers substantial leverage to quickly move forward methane reduction projects.

Leverage provided by Global Methane Fund



Key takeaways

- CER prices are not likely to be below the Chinese floor price, presently at €8.00.
- A guaranteed price at e.g. € 12.00 is likely to generate substantial interest in GMF's offering.
- It is **not recommended** to offer a price guarantee that is higher than the sCER price at the time ERPAs are executed.
- Over time, the GMF will be substantially "in-the-money" and could likely guarantee for 10-25 times the fund capital.

Underlying assumptions

- Price guarantee valid for the entire crediting period of a project
  - 7 or 10 years
  - Revised over time for new projects entering the GMF portfolio
- All fund money disbursed to projects at carbon credit issuance (if needed)
- Reliance on CDM-registered projects to start to clear backlog, keep costs low
- No upfront project costs, (capex, project documentation, validation) paid directly by GMF, but by secondary/tertiary funding
- No opex for GMF in calculations
- Fund capital ”disbursed” evenly over 2 years, and project lead time 2 years

Present market

- Kyoto period CERs mix of fixed and indexed prices
- Contracts for post-2012 CERs mostly indexed to CER market price
  - 70-90%
- Indications from China
  - Floor price also valid post-2012
- Sellers of post-2012 CERs are presently abundant
  - Fixed price alone enough to attract attention

The key variables

- Likelihood of various Carbon Emission Reduction (CER) market prices 2010-2016
  - 3 scenarios applied, ”average scenario” applied in fund supply model
- Leverage capability of projects to achieve other financing beyond GMF price floor guarantees
- Upfront payment
- Cut per CER above sale price
- Initial support
- GMF operational cost

Experience of methane project performance

- Difficult to generalize, but methane projects are generally under-performers compared to theoretical yields, due to stringent/ conservative methodologies, monitoring deficiencies, and unreliable estimation models

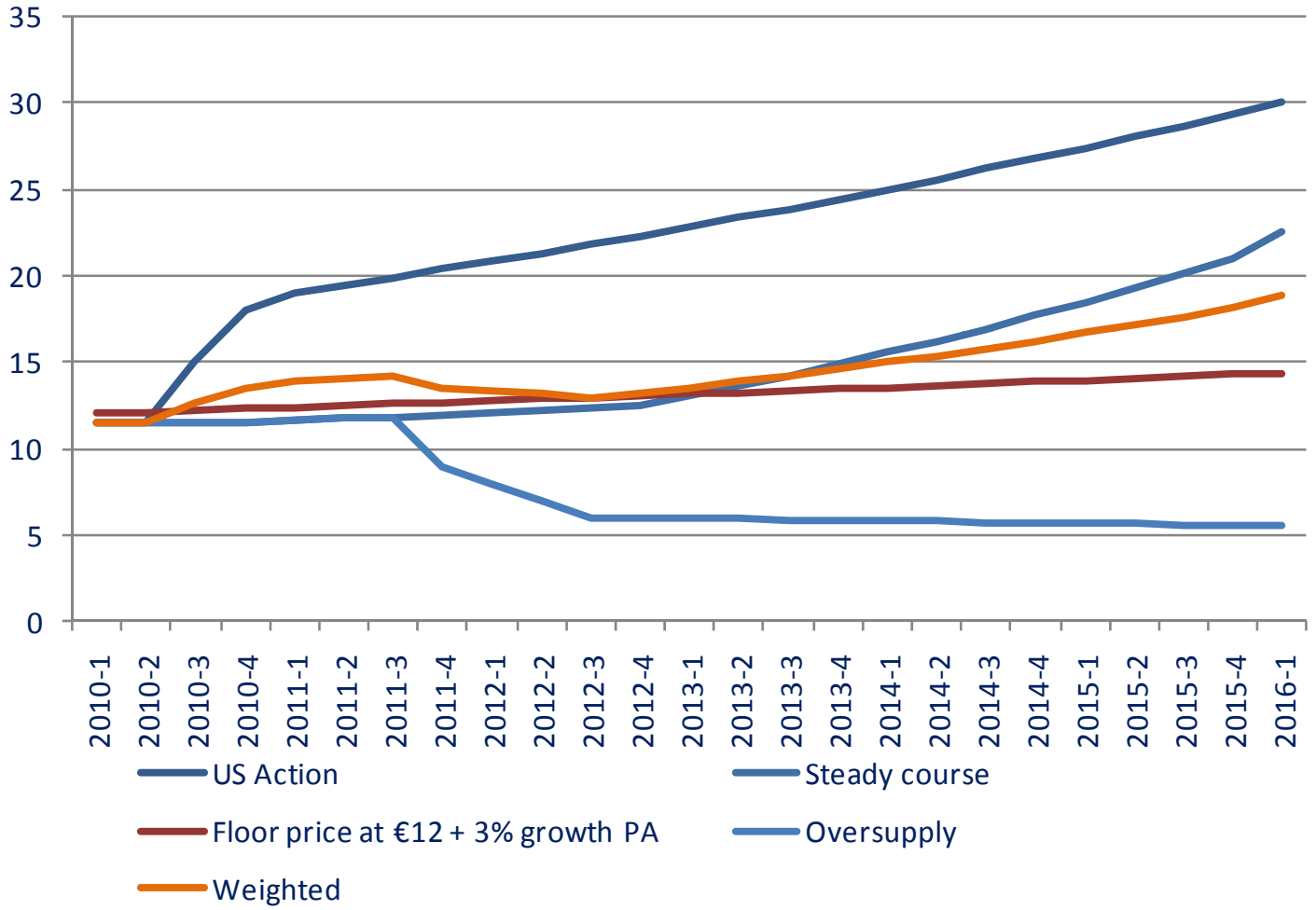
- Gas leakage and associated gas flaring projects may yield 90-100% of estimated CH4 reductions, while some landfills may yield less than 40% of estimated reductions

- Proper estimation of baseline and emission reductions, proper implementation of monitoring measures and sufficient training of local personnel responsible for monitoring and reporting may significantly increase yields

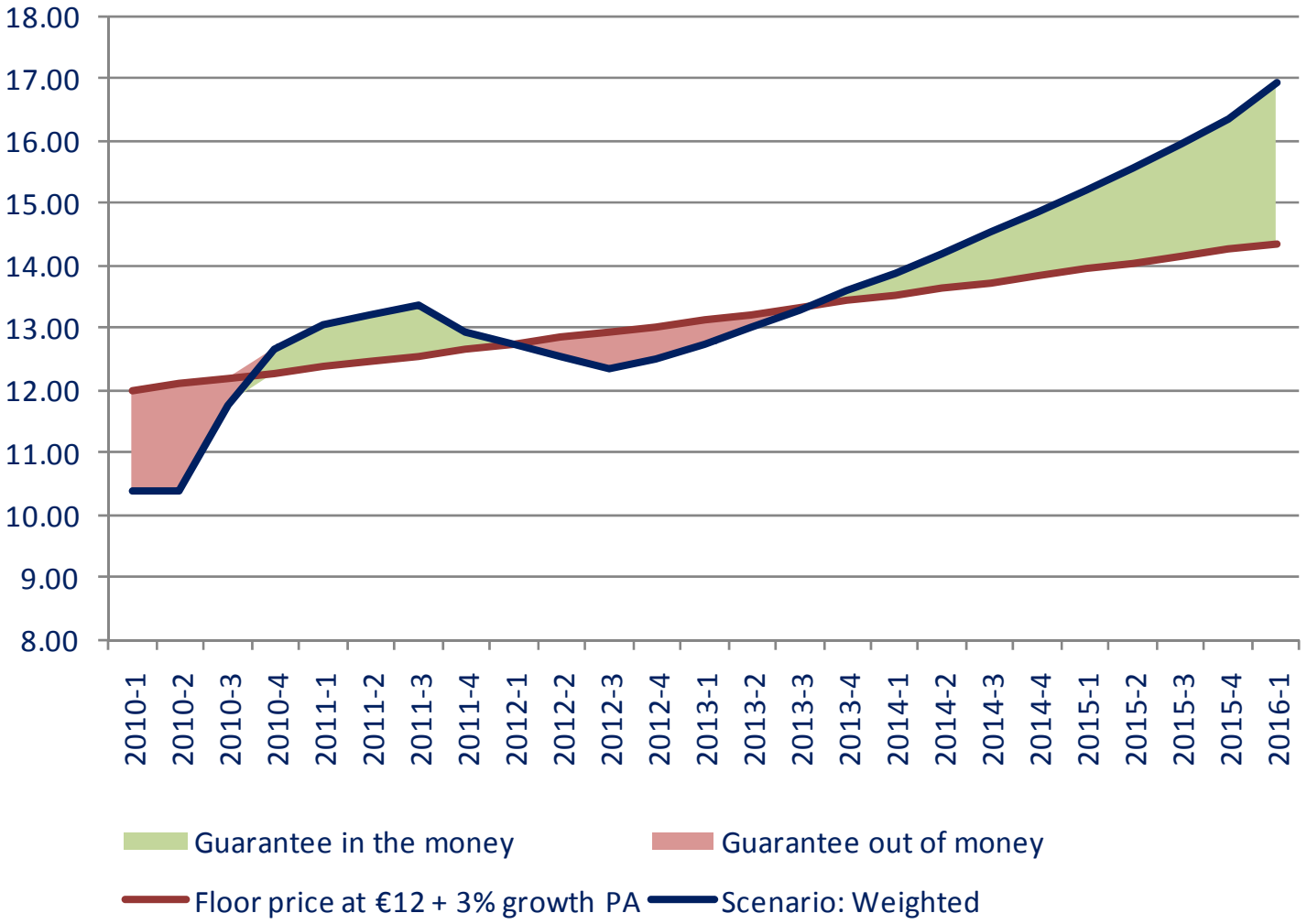
CER price scenarios

- US action
  - A scenario where there is a Federal US cap & trade system
  - Likely to be followed by increased EU commitments + JPN + others
  - New CDM elements. Standardization
- Steady course
  - Nothing happens in terms of new binding targets, countries fulfill Kyoto
  - No major changes to CDM
  - EU at -20% in 2020, JPN, others silently follow up Kyoto
- Oversupply
  - EU ETS only source of demand, still at -20% in 2020
  - CER limitations will define CER demand
  - Negatives list in EU?
  - More than enough CERs

CER Price Scenarios



Guarantee mechanism



Contracting volumes

- At the weighted scenario, the fund would be in the money using the €12 price guarantee

- Contracting 10x fund capitalisation in risk-adjusted credits would limit loss to eating into half the capitalization in a weighted scenario
  - This scenario occurs when price drops 30% below weighted average
  - Oversupply scenario may wipe out the fund capital

- Given that methane projects deliver around half of what they promise, contracting could probably increase to 20-25 times the fund capitalisation
  - This should be linked to delivery risk

- $1000M is roughly equivalent to contracting 65 million CERs at today's market price of €11.5

Leverage capability

- Other than CER cash flow, other potential sources of project capitalization and amortization:
  - Purchase of captured methane by off-takers
    - CMM, avoided flaring and pipeline leaks
  - Payment for ancillary benefits (e.g. waste water treatment improvement)
    - Local support schemes
  - Development funding
    - Always possible
  - Private lenders
    - For bigger companies
  - Quasi-public lenders (e.g. Asian Development Bank)
    - ADB/WB would probably want the CERs

Success factors

- The guarantee price itself
- Upfront payments
  - GMF might have to pay upfront to get the projects off the ground if no other financing is obtained, and especially for small entities.
- Proper selection of methodologies
- Proper training of project operators
- Ability to screen project opportunities properly is key. This means:
  - Get rid of bad projects quickly, avoid wasting time and money
  - Revise and kill non-moving projects