Modelling Article 6 – The Importance of International Cooperation in Developing the Carbon Markets

Stefano De Clara – International Policy Director, IETA
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About IETA

- Collective voice of business on carbon pricing, markets and finance
- Global non-profit association
- Policy design, thought leadership, best practices, global capacity building,
- Global Partnerships & Dialogues with UNFCCC, World Bank, OECD-IEA and many more
• **Article 6.2**: Accounting guidance for reporting of “internationally transferred mitigation outcomes” (ITMOs) with “corresponding adjustments”

• **Article 6.4**: An emissions mitigation mechanism to issue units for programs or activities, building on Kyoto mechanisms (CDM, JI) – but much broader

• **Article 6.8**: Work programme for non-market approaches to advance cooperation that does not involve ITMOs.
Potential of Article 6

• Countries can cooperate on NDC achievement
• Could establish international framework for linkage of carbon pricing policies
• Could facilitate creation of ‘carbon clubs’
• Can reduce mitigation costs, allowing more ambition
• Could help achieving net zero emissions ASAP
• Establishes a new mitigation mechanism available to all who want to use it
• And more…
Two questions

What is the POTENTIAL economic value of Article 6?

* How much could costs be reduced?
* Who benefits?
* What is the potential size of the carbon market?
* Who are the buyers and sellers?

How much additional ambition could be enabled?

* How big is the potential?
* Who increases their ambition?

Approach

UMD runs of Global Change Assessment Model (GCAM)

- A state of the art integrated assessment model of economy, energy, land, water and climate
- Used by the IPCC to develop scenarios

Nationally Determined Contributions (NDCs)

- Taken from country submissions
- Post-2030 projections extend trends
- Used the same method as in the Fawcett, et al. (2015) Science paper

Source: IETA /World Bank CPLC / UMD September 2019
NDC Shadow Prices: Independent vs. Cooperative Implementation

- I-NDCs show wide range in shadow prices
- Cooperative NDC implementation cuts costs in half

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<thead>
<tr>
<th></th>
<th>2030</th>
<th>2050</th>
<th>2100</th>
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</thead>
<tbody>
<tr>
<td>I-NDC Range</td>
<td>$0 to $101/tonCO₂</td>
<td>$0 to $111/tonCO₂</td>
<td>$16 to $209/tonCO₂</td>
</tr>
<tr>
<td>J-NDC</td>
<td>$38/tonCO₂</td>
<td>$52/tonCO₂</td>
<td>$107/tonCO₂</td>
</tr>
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</table>

Source: IETA /World Bank CPLC / UMD September 2019
NDC Emissions: Independent vs. Joint Implementation

Source: Forthcoming JGCRP & IETA Workshop on Value of Article 6 (2019) – DRAFT – SUBJECT TO CHANGE
Potential changes in emissions—CO$_2$

- Seller (11 regions)
- Buyer (4 regions)
- Seller to buyer (15 regions)
- Buyer to seller (2 regions)

SOURCE: Forthcoming JGCRRP & IETA Workshop on Value of Article 6 (2019) – DRAFT – SUBJECT TO CHANGE
How Valuable is Article 6 to global GDP?

* Article 6 holds significant potential to reduce cost and enhance ambition
  * 2030 ~$250 billion 2015 US$

* Some countries would benefit more, but everyone could be better off through collaboration.

Source: IETA /World Bank CPLC / UMD September 2019
How Valuable is Article 6 for Ambition?

If we interpret the cost of achieving each country’s NDC independently as a willingness to pay, 5 GtCO₂/year additional mitigation could be enabled in 2030.

Source: IETA /World Bank CPLC / UMD September 2019
The economic potential available through Article 6 from extension to include land use change is significant.

Utilizing the economic efficiency gains to enhance ambition offers additional potential benefits.

Realizing this potential is a major real-world challenge.

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<tr>
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<th>Reduction in Cost</th>
<th>Increased Ambition</th>
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<tbody>
<tr>
<td>Fossil Fuels Only</td>
<td>~$250 billion</td>
<td>5 GtCO₂ per year</td>
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<tr>
<td>Land Use Only</td>
<td>~$70 billion</td>
<td>4 GtCO₂ per year</td>
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<tr>
<td>Combined</td>
<td>~$320 billion</td>
<td>9 GtCO₂ per year</td>
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Forthcoming IETA-UMD Workshop Report 2019 - DRAFT
PRESENTATION—RESULTS MAY CHANGE - COMMENTS WELCOME
Potential Changes in CO$_2$ Emissions

Buyers and Sellers under Article 6

- South America_Southern
- South America_Northern
- Colombia
- Central America and Caribbean
- Brazil
- Argentina
- South Africa
- Africa_Western
- Africa_Southern
- Africa_Northern
- Africa_Eastern
- Middle East
- Pakistan
- India
- Indonesia
- Southeast Asia
- South Asia
- Central Asia
- Taiwan
- China
- Russia
- Europe_Eastern
- Europe_NonEU
- European Free Trade Association
- EU-15
- EU-12
- South Korea
- Japan
- Australia_NZ
- Mexico
- Canada
- USA

Fossil Fuel and Industry

Land Use Change and Forestry

Forthcoming IETA-UMD Workshop Report 2019 - DRAFT PRESENTATION—RESULTS MAY CHANGE - COMMENTS WELCOME
How Valuable is Article 6?

Article 6 holds significant potential to reduce cost and enhance ambition

- Everyone could be better off through collaboration
- Mitigation cost could be reduced by $320 billion in 2030.
- Mitigation could be enhanced by 9 GtCO₂/year in 2030

Source: Forthcoming IETA-UMD Workshop Report 2019 - DRAFT PRESENTATION—RESULTS MAY CHANGE - COMMENTS WELCOME

This is just the theoretical potential…

… but there are always real-world challenges.

- Clearly the rules matter—need to develop sound rules at COP25
  - Key to environmental integrity is avoiding double counting
  - Need to avoid restrictions or loopholes that could limit this potential
- Next, Parties need to establish plans for using Article 6
  - Translate heterogeneous NDCs into Article 6 approaches
  - Future calls for ‘Article 6 ready’ NDCs
- What incentives would increase ambition in future NDCs?
Thank you!

The full report is available at: