



Article 6 and CCUS in the net-zero transition

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ERCST

Roundtable on
Climate Change and
Sustainable Transition

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About ERCST

The European Roundtable on Climate Change and Sustainable Transition (ERCST) is an independent, not-for-profit think tank, registered under Belgian law (as an ‘association sans but lucratif’), based in the heart of the European quarter in Brussels. More information on ERCST can be found in the ‘Governance’ chapter. The mission of ERCST is to provide a neutral space where policymakers and regulators can meet stakeholders and discuss climate change policy, including how to manage a sustainable transition to a low-carbon society. While focused on European climate policy, ERCST fully recognises and incorporates in its activities and thinking, the global dimensions of climate change policy. ERCST aims to provide rigorous intellectual analysis, stemming from the experience and input of its staff, as well as other research available, and the input of the stakeholders who join its activities. It represents its own views and strives to ensure in a very strict way its independence and integrity. ERCST aims to provide original ideas and research into European and international debates, which it can fully support through the logic of its arguments and the evidence that it can bring forward. ERCST is therefore open to researchers, NGOs, experts, and other stakeholders, filling a gap in the institutional “climate landscape”. It is a place where all views will be welcomed, encouraged, and listened to. In 2023, ERCST will continue its efforts and work organised in a number of work streams that operate with different formats such as online webinars, brainstorm sessions, task forces, moderated roundtables in Brussels and other capitals, briefings and lunchtime meetings.

ERCST Values

ERCST is committed to the goals and principles of the Paris Agreement and works towards promoting a just, inclusive, and sustainable global transition. ERCST has always been careful to ensure an inclusive working environment and to be attentive to gender diversity and to the plurality of voices represented in its initiatives. When this is not reflected in one of our publications or events, it is due to the unavailability of the consulted experts to participate, to choices of organizations on their representation or specific representation in the respective organization.

CCUS and the Paris Agreement

- One of the goals of the PA is reaching net zero emissions globally, to be achieved through a balance of source and sinks (natural and technological), and with international cooperation (Article 6) as an important element.
- The recent IPCC 6th Assessment Report highlighted increased urgency of action, with a list of possible mitigation actions, including CCUS & removals.
- How net zero emissions is achieved is left to the Parties, as NDCs are nationally determined. The use of different approaches and the balance between approaches is part of that national determination.

Different approaches: one size does not fit all

Two alternative approaches can lead to net zero emissions:

- a. **Addressing residual and life cycle emissions.** The replacement of activities that have direct emissions with clean energy and other non-direct emitting solutions will still result in emissions from the life cycle of such technologies and from processes and will need to be addressed through nature based and technological removals.
- b. **Addressing direct emissions from combustion.** This track captures residual emissions from combustion when CCUS is used. Since CCUS has inefficiencies nature based and technological removals are still required.

The role of CCUS in achieving climate targets (1)

- The importance of CCUS and emission removals in achieving the Paris Agreement temperature stabilization targets has recently been highlighted in several high-impact scientific reports, for instance:
 - **IPCC 6th Assessment Report** (2021-2023): all global modelled pathways that limit warming to either 1.5°C or 2°C assume some continued use of fossil fuels and deployment of removals to balance residual emissions.

Cumulative removals from 2020 to 2100: 30–780 GtCO₂ from BECCS, 0–310 GtCO₂ from DACCS for 1.5°C (>50%); 170–650 GtCO₂ from BECCS and 0–250 GtCO₂ from DACCS for 2°C (>67%).
 - **IEA Net Zero by 2050** (2021): rapid expansion in CCUS over the following 25 years; by 2030, 1.6 Gt of CO₂ per year captured globally, rising to 7.6 Gt of CO₂ in 2050.

The role of CCUS in achieving climate targets (2)

- **BP Energy Outlook 2023** (2023): Accelerated and Net Zero scenarios project use of CCUS reaching between 4-6 GtCO₂ by 2050.
- **Energy Transitions Commission Mind the Gap** (2022): about 3-5 GtCO₂ captured per year to neutralize residual emissions of both CO₂ and N₂O after mid-century.
- Many scenarios project an emissions overshoot, further highlighting the need for negative emissions technologies such as removals.
 - **Energy Transitions Commission Mind the Gap** (2022): at least 70-225 GtCO₂ of cumulative removals required by 2050 to neutralize impact of likely overshoot.
- CCUS and removals are important across the entire economy, as all areas of the economy will continue to generate residual emissions.

What is driving the choice of deploying CCUS?

- Countries will use CCUS and removals based on a number of factors, such as:
 - a. Natural energy endowment
 - b. Level of development
 - c. Level of emissions
 - d. Climate change commitments
 - e. Geological & natural endowment
 - f. Public perception and acceptance
 - g. General approach including technological neutrality
- A cursory survey of several key regions (EU, United Kingdom, United States, Canada, Australia, India, South Africa, Saudi Arabia) shows a correlation between these factors and expressed intent to deploy CCUS and removals.

A call to action (1)

- The transition to a low- and eventually net-zero carbon economy is urgent, important, and requires engagement by all, including the deployment of all available options.
- If all options are to be on the table, they also need to secure the requisite technical and political support.
- Until recently, however, CCUS and removal technologies have not benefitted from the same technical and political support as other options, such as renewable energy solutions and hydrogen.
- Technology neutrality has not been a guiding principle for recent action, but needs to be restored in the broader discussion about decarbonization.

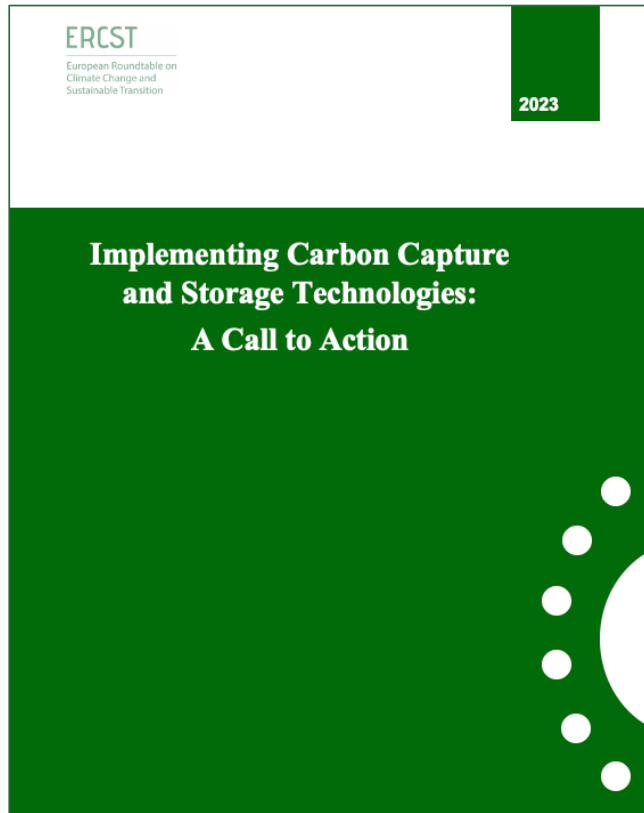
A call to action (2)

- As options widely recognized to be indispensable, CCUS and removals will need to receive increased political support at both the national and regional level, such as in the EU, as well as at the international level, for instance through the COP/CMA.
- The next major opportunity to accelerate the exploration and deployment of CCUS will present itself at COP28, where a political signal – for instance through a political declaration, language in the cover decision, or some other expression of urgency – would be of value, especially when it comes to public opinion.
- In addition to political support, practical solutions that can help with the implementation should be explored if CCUS and removals are to play the role described above.

A call to action (3)

- Such practical solutions can include:
 - Testing the regulatory and institutional architecture of international cooperation on CCUS and removals under Article 6 of the Paris Agreement, for instance through piloting of cooperative approaches on removals.
One first step: adoption of methodological guidance on removals under Article 6.4.
 - Consideration of coalitions or “clubs” to advance CCUS and removals, either within the framework of the Paris Agreement or outside of it.
 - Creating appropriate international governance structures to manage risks associated with CCUS and removals. This could entail assignment of long-term liability to an existing or newly created international institution with a significant balance sheet.
- Ensuring the availability of all options, including CCUS and removals, is a sound risk management and hedging strategy: there is no panacea in the effort to address climate change and meet the goal of the Paris Agreement.

Find out more



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Scaling up and trading CO2 storage units (CSUs) under Article 6 of the Paris Agreement – Potential challenges, enablers, governance and mechanisms

Peter Zaman, Partner, HFW



Introduction to CCS and CCUs

CCS vs CCUS

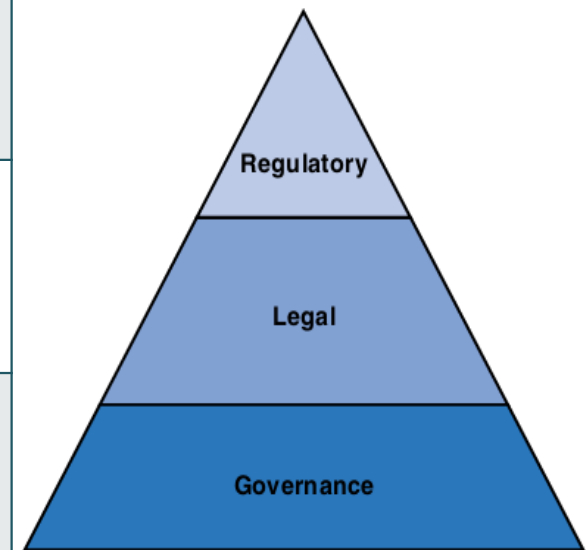
CCS	CCU (CCUS refers to a combination of CCS and CCU)
<p>A process in which a relatively pure stream of carbon dioxide (CO₂) from industrial and energy-related sources is separated (captured), conditioned, compressed and transported to a storage location for long-term isolation from the atmosphere.</p> <p>Does not necessarily result in carbon dioxide removal, depending on the net emissions of the supply chain.</p> <p>E.g. Bioenergy with carbon dioxide capture and storage (BECCS), Enhanced oil and gas recovery (EOR), Direct air carbon dioxide capture and storage (DACCS)</p>	<p>A process in which CO₂ is captured and then used to produce a new product.</p> <p>If the CO₂ is stored in a product for a climate-relevant time horizon, this is referred to as carbon dioxide capture, utilisation and storage (CCUS). Only then, and only combined with CO₂ recently removed from the atmosphere, can CCUS lead to carbon dioxide removal. CCU is sometimes referred to as carbon dioxide capture and use.</p>



Feasibility

What is Governance?

Description	
Regulatory	<ul style="list-style-type: none">• The existence of necessary infrastructure to support the control direction or implementation of the proposed or adopted course of action, rule, principle or law.• Refers to the set of bodies, agencies, actors whose role is to oversee, implement and ensure effectiveness of the structure.
Legal	<ul style="list-style-type: none">• Broad system of rules that governs and regulates decision making, reflected in agreements.• The end product of the governance framework and specifies the boundaries in which relationships are managed.
Governance	<ul style="list-style-type: none">• Process of decision-making and the process by which decisions are implemented (or not implemented)• Decision making process by which rules are made.• Functions as the process, by which authority is conferred on the governing body, by which rules are made, enforced and modified.



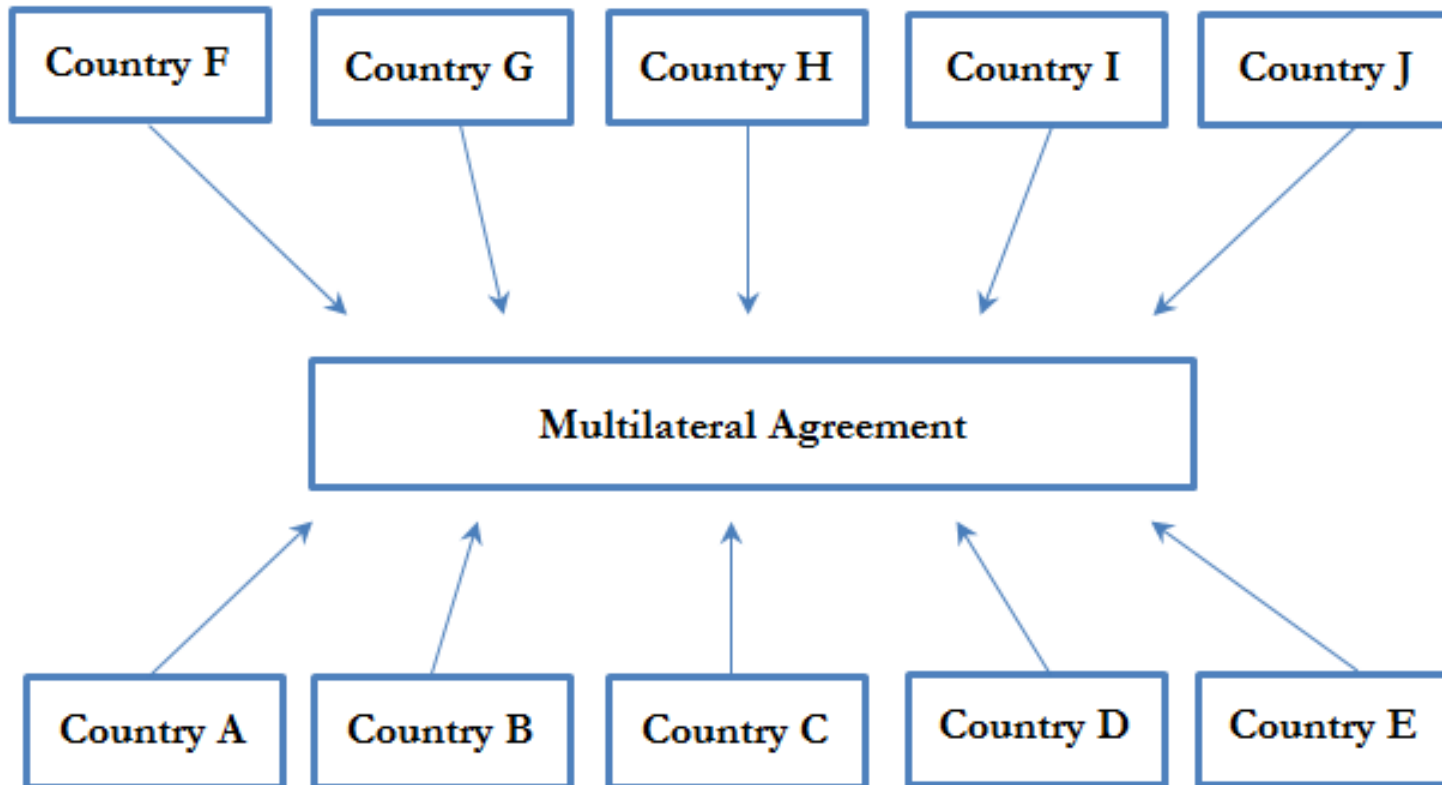
What is Governance?

- ▶ Therefore, we are particularly looking at what Regulatory Framework ought to be applied and what might it look like.
- ▶ Under Article 6.2 Cooperative Approaches, there needs to be an arrangement between 2 or more governments – a treaty / MOU would be required.
- ▶ Example: Peru / Switzerland Article 6 Partnership Agreement, Ghana / Switzerland Article 6 Partnership Agreement,
- ▶ How does the private sector get involved under Article 6.2 then? A legislative framework will be required to implement the mechanism to allow for private sector participation.

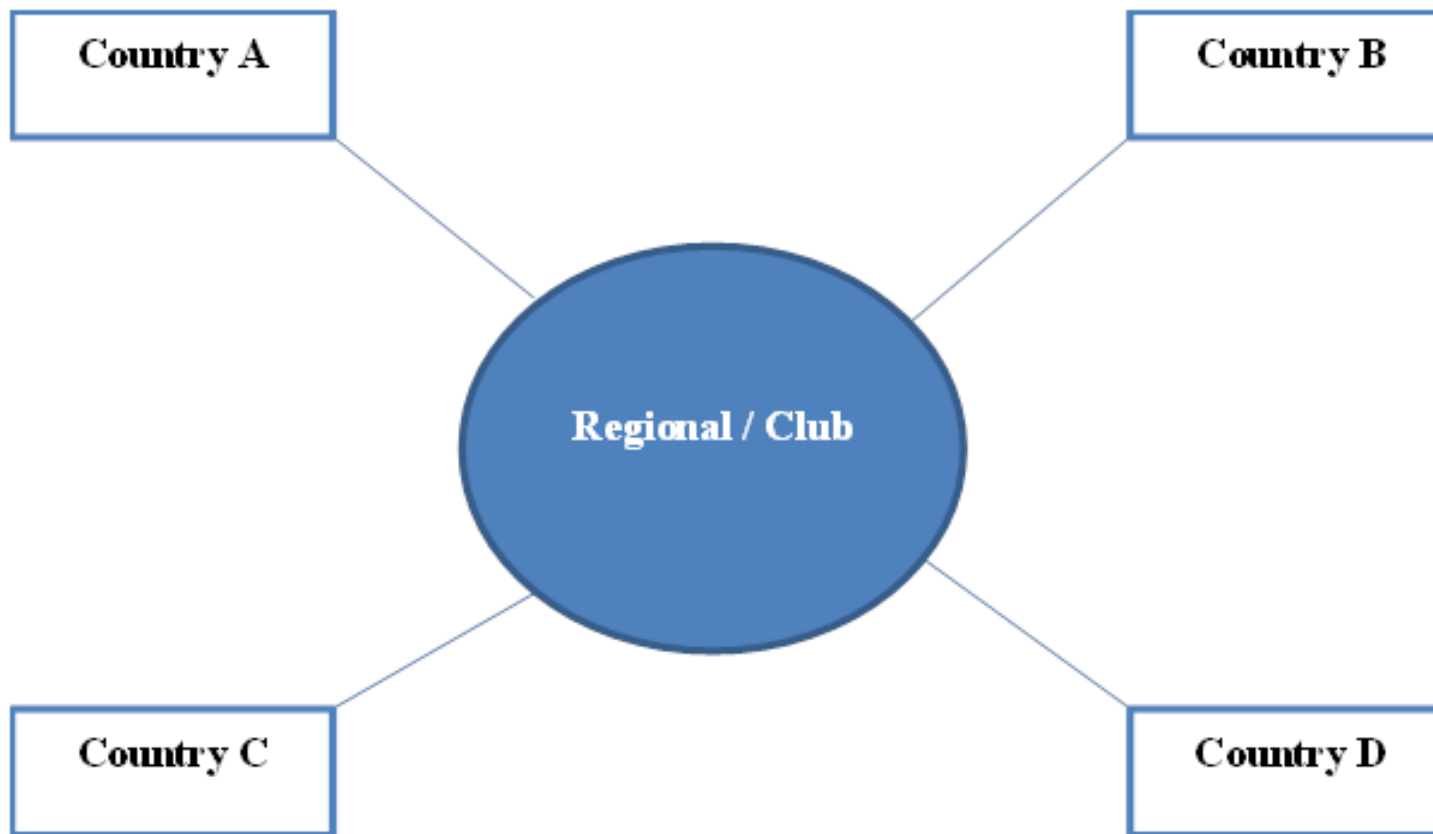
Framework - Government led clubs

- ▶ Multi-lateral linkage: example, the World Trade Organisation
- ▶ Regional linkage: for example, South Asian Free Trade Area, Trans-Pacific Agreement
- ▶ Bilateral linkage: for example, EU-Swiss ETS linkage

Multi-Lateral linkage trading model



Smaller multilateral model - Regional linkage model



Bilateral linkage model

Figure 2: Direct Bilateral Linking

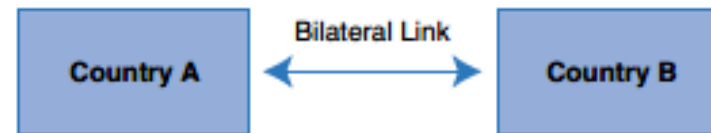
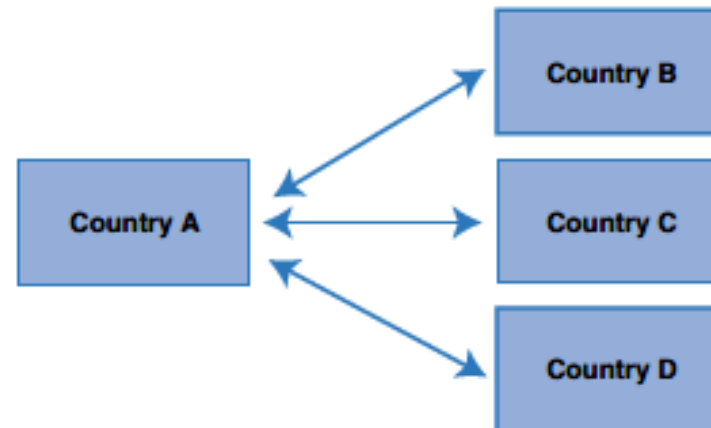


Figure 3: Indirect Bilateral Linking



What is good governance – 8 Characteristics

No.	Characteristics
1.	Participation <ul style="list-style-type: none">• Either direct or through legitimate intermediate institutions or representatives.
2.	Rule of Law <ul style="list-style-type: none">• Fair legal frameworks that are enforced impartially.
3.	Transparency <ul style="list-style-type: none">• Means decisions taken and the enforcement of such decisions are done in a manner that follows rules and regulations. It also requires that information is freely available and enough information is provided.
4.	Responsiveness <ul style="list-style-type: none">• Good governance requires that institutions and processes try to serve all stakeholders within a reasonable timeframe.

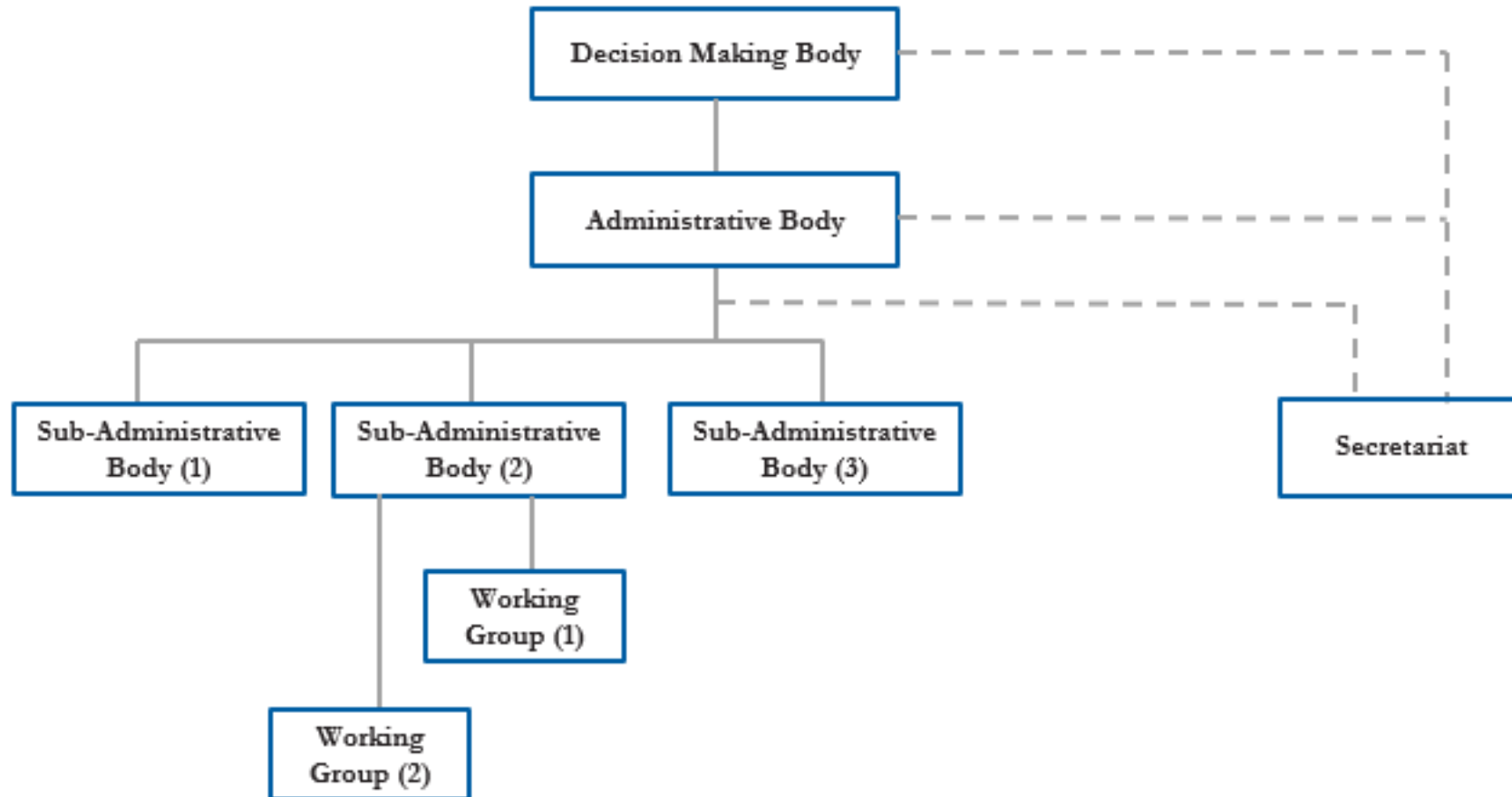
What is good governance – 8 Characteristics

No.	Characteristics
5.	Consensus oriented <ul style="list-style-type: none">• Good governance requires mediation of the different divergent interests and to coalesce all actors to reach a broad consensus on what is in the best interest of the community and how it can be achieved.
6.	Equity and inclusiveness <ul style="list-style-type: none">• Ensuring all members feel that they have a stake in the process and do not feel marginalised.
7.	Effectiveness and efficiency <ul style="list-style-type: none">• Processes and institutions produce results that meet the needs of society while making the best use of resources at their disposals.
8.	Accountability <ul style="list-style-type: none">• Key requirement• Must be accountable to not only the actors within the community but also to the external stakeholders.

What does the governance body need?

- ▶ A **Decision Making Body** – to make decisions, carry out the functions of the body and take necessary actions.
- ▶ An **Administrative Body** – to oversee day to day running of the carbon club on behalf of the participating representatives in the Decision Making Body.
- ▶ **Sub-Administrative Bodies** – to deal with specific aspects of the multilateral arrangement, such as contributions of participating representatives or dispute resolution and administrative issues.
- ▶ **Technical committees and working groups** – required to achieve the mundane but nonetheless important nitty-gritty aspects.

Structure of the governance body



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POTENTIAL CHALLENGES, ENABLERS, GOVERNANCE AND
MECHANISMS

<https://ercst.org/scaling-up-and-trading-co2-storage-units-csus-under-article-6-of-the-paris-agreement-potential-challenges-enablers-governance-and-mechanisms/>



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