

Politics of Decarbonisation in Asia-Pacific

Prospective Political Frameworks for Decarbonisation in 2030

In September 2021, KAS RECAP hosted a series of online closed workshops to explore political issues associated with decarbonisation in Asia-Pacific. Under the guidance of professional facilitators, participants from public institutions, private sector, NGOs and academia from Asia and Europe have developed a set of futures scenarios for various thematic topics around decarbonisation applying foresight methods. For each topic, four futures scenarios were developed and explored in relation to environmental, social and governance factors along with the identification of key trends and emerging issues.

Summary

1. Critical Minerals and Circular Economy:

In this decarbonisation area, a possible scenario (a) might end up in global governance which sets a general level playing field for standards of critical mineral exploration.

Another scenario (b) assumes a high degree of interstate cooperation on critical mineral exploration.

Under certain circumstances, a scenario (c) could lead to an extreme competition on critical minerals with countries considering that competition is more important than decarbonisation.

Scenario (d) foresees that a decentralized bottom-up approach with independent stakeholder is widely adopted.

2. Cross-boundary Electrification:

Scenario (a) comes up with decelerated decarbonisation, as nation states have strong emphasis on national autonomy over grids and do not actively engage in energy cooperation.

In another scenario (b), countries are afraid of “bad neighbors” and thus focus on technological innovation in their respective territories.

Scenario (c) with slow electrification predicts stakeholders adopt a wait-and-see approach, although they are willing to utilize regional power grids.

A rather optimistic scenario (d) sees the emergence of a regional grid community in Asia which facilitates interstate power connectivity.

3. Sustainable Financial Taxonomies:

Scenarios (a) & (b) represent an unfavorable environment for growth of green finance as trust in green finance lacks due to increasing green washing.

On the other side, scenario (c) with globally fragmented taxonomy makes competing standards available, which is facilitated by active involvement of various stakeholders in climate finance.

In the scenario (d), a global agreement on sustainable finance is reached to assure green washing is not possible and set key frameworks for harmonized taxonomies worldwide.

4. Fossil Fuel Usage:

Scenario (a) expects the growth of fossil fuels continues, as the Paris Agreement has failed and the technology development is lagging.

In the scenario (b), competition over low-carbon technology intensifies, while interstate collaboration on non-fossil fuels may increase.

Scenario (c) witnesses increasing social inequality with more non-state actors shaping the energy development.

Scenario (d) presents an inclusive and equitable energy future, since new actors, technologies, international institutions and resilient energy systems are in place.

5. Carbon Pricing:

In the scenario (a), competition over carbon pricing intensifies, when nation states face strong impacts of the EU carbon border adjustment mechanism (CBAM) and Article 6 of the Paris Agreement is unsolved.

However, if the Article 6 is resolved, scenario (b) expects carbon pricing systems worldwide are harmonized.

Under absence of Article 6 and the weak EU CBAM, scenario (c) could lead to growth of voluntary carbon pricing schemes.

Scenario (d) foresees the well-functioning of multilateral carbon pricing with issues related to reporting, verification and double counting resolved.

Politics of Decarbonisation in Asia-Pacific — Foresight Workshops' Results

1) New Resources and Decarbonisation — Critical Minerals and Circular Economy in Asia-Pacific

The fast-growing trend of energy transition has put the geopolitics of critical raw materials, particularly securing mineral supplies from Asia-Pacific, on the global strategic agenda. While critical minerals are indispensable inputs for clean technology, their markets are characterised by high levels of monopoly, growing competition, trade disruptions and supply chain risks to end-users. A confluence of the COVID-19 pandemic and US-China trade tensions has further exposed the fragility of global supply chains for some critical minerals. Aware of the economic importance and supply risks of critical minerals, e.g. to construct renewable energy plants or power storage facilities, many countries in Asia-Pacific, from China to Japan, as well as Mongolia, India, Indonesia, and Australia, have rolled out climate innovative strategies, e.g. circular economy models, sophisticated recycling approaches and/or joint initiatives to develop dependable supply sources and attract investment.

Against this background, the participants identified and discussed the key trends and emerging issues for a possible future based on the need for and re-use of new resources. It is well-known that the changing climate is having an impact on a range of security issues including food security in the developing and developed world. Multiple stakeholders around the globe are thus actively engaging in decarbonisation. As a significant shift in the geopolitical order is happening, new types of global climate and energy governance are emerging. There is rising dependency on critical resources. Countries are increasingly aware of Chinese dominance regarding critical minerals and its potential threat for developing economies. To utilise energy resources in a sustainable manner, circular economy practices for ecosystem services including deployment of circular economy technology are taking shape. Policymakers and the private sector are implementing Environmental,

Social, and Governance (ESG) worldwide voluntarily and compulsorily. In the long run, it is foreseeable that energy development will be constantly shaped by digitalisation which raises concerns over cyber security.

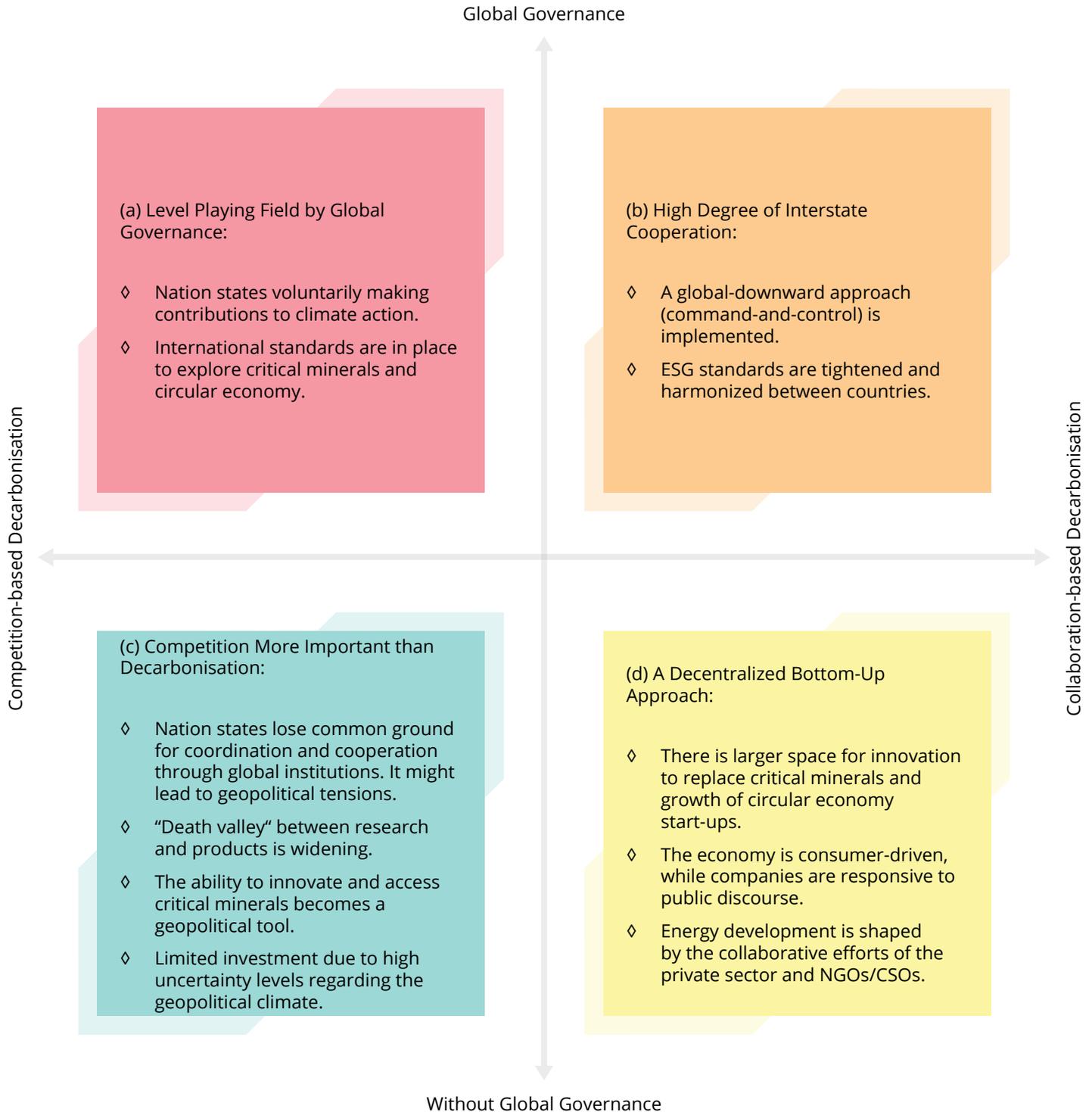
Four scenarios have been created with two various types of global decarbonisation governance. In a world of competition-based global decarbonisation with instrumental global governance, the Paris Agreement framework, which sets a level playing field for cooperation, remains as a core framework for global climate governance with nation states voluntarily making contributions to climate action. International standards are in place to explore critical minerals and reduce carbon emissions.

When it comes to competition-based decarbonisation with irrelevant global governance, geopolitical tensions are foreseeable as countries compete for innovation as well as critical materials in low-carbon energy transitions. Nation states lose common ground for coordination and cooperation through global institutions. The “Death Valley” between research and products is widening. There will be limited green investment due to high uncertainty levels regarding the geopolitical climate.

For collaboration-based decarbonisation under instrumental global governance, ESG practices and circular economy for ecosystem services are largely in place and new innovations are emerging with a high degree of interstate cooperation. ESG standards between developed and developing countries are being harmonised as well as tightened for investors and businesses.

Collaboration-based decarbonisation with irrelevant global governance will be driven mainly by decentralised and bottom-up approaches with non-state actors taking the lead via collective efforts. There is larger space for innovation and growth of circular economy start-ups. The economy will be consumer-driven, while companies are responsive to public discourse. Energy development is shaped by the collaborative efforts of the private sector and NGOs/CSOs.

Alternative Futures Scenarios for the Use of Critical Minerals in 2030



2) Cross-boundary Electrification and Regional Power Grids in Asia-Pacific

The benefits of power grid interconnection between countries are widely recognised. Integrating local and national energy markets can contribute to enhancing energy security and regional stability. In particular, for some countries in Asia-Pacific, energy cooperation can improve the lack of access to stable and affordable energy, which is otherwise a massive roadblock for further economic and social development. However, there remains a series of political, economic and legal challenges in implementation. In recent years, the need to address the growing energy demand while reducing carbon emissions has created some political momentum towards the development of renewable energy resources in the region. In addition, regional grid interconnections that play an important role in exploiting comparative advantages and addressing the variance of renewables are few in number.

Against this backdrop, the participants identified and discussed the key trends and emerging issues for a possible future for the electricity grid interconnections among Asian countries. Fossil fuels, especially coal, play a key role in the energy mix in Asia-Pacific. Power interconnection is seen as a means of achieving decarbonisation. Regional power coordination and cooperation are affected by a range of factors, namely concerns over national sovereignty, level of centralisation of energy systems, governance of cross-border grid operations, interstate political relations, national attitudes towards international cooperation, pace of electrification, and deployment of power storage technology. New energy sources and carriers like pumped-storage hydropower and green hydrogen are expected to play a role in shaping regional energy development.

Four scenarios have been envisaged based on intersections of emphasis on national autonomy/regional interdependence and slow/fast electrification.

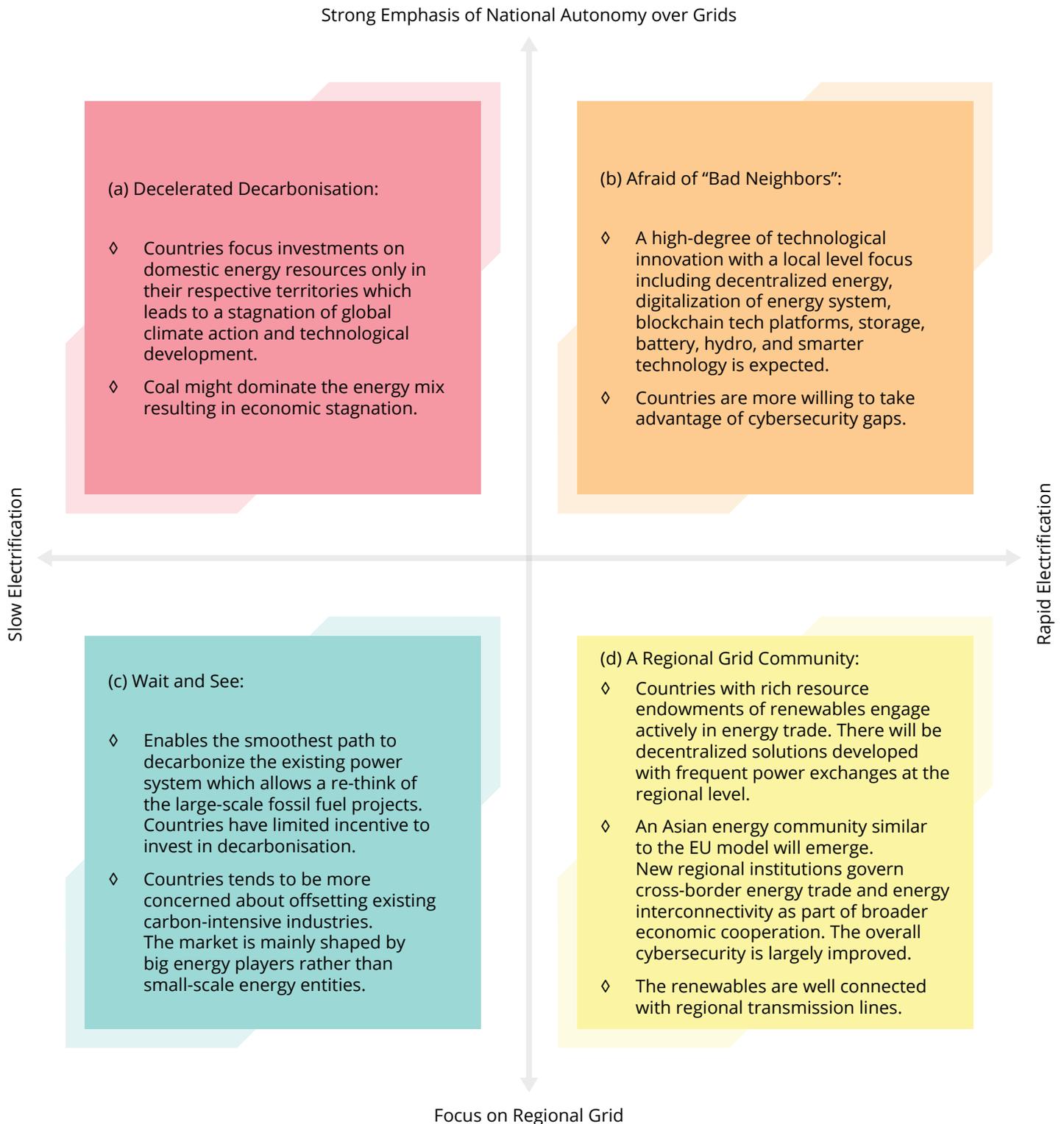
In a world of strong emphasis on national autonomy with slow electrification, countries focus investments on domestic energy resources only in their respective territories which leads to a stagnation of global climate action and technological development. Coal will still dominate the energy mix, which poses negative impacts on mitigating climate change.

However, for the same scenario with rapid electrification, a high-degree of technological innovation with a local-level focus including decentralised energy, digitalisation of energy systems, blockchain tech platforms, storage, batteries, hydro, and smarter technology is expected. Countries are more willing to take advantage of cybersecurity gaps. Federal states do not have the authority over hydro and solar, and the whole issue of energy is a state subject as long as capital cities are consulted. There is a need to reconfigure national energy systems to accommodate the large uptake of decentralised energy.

The world which focuses on regional interdependence with slow electrification enables the smoothest path to decarbonise the existing power system which allows a re-think of large-scale fossil fuel projects. However, countries have limited incentives to invest and decarbonise. They tend to be more concerned about offsetting existing carbon-intensive industries. The market is mainly shaped by big energy players rather than small-scale energy entities.

When an interdependent region undergoes rapid electrification, countries with rich resource endowments of renewables engage actively in energy trade. There will be decentralised solutions developed with frequent power exchanges at the regional level. An Asian energy community similar to the EU model will emerge. New regional institutions govern cross-border energy trade and energy interconnectivity as part of broader economic cooperation. The overall cybersecurity is largely improved. The renewables are well connected with regional transmission lines.

Alternative Futures Scenarios for the Cross-Boundary Electrification and Regional Power Grids in 2030



3) Geoeconomics of Sustainable Finance Taxonomy in Asia-Pacific

The global economic trajectory is unsustainable. Climate change and drastic environmental degradation due to more severe and frequent hurricanes, floods, droughts, sea level rise, biodiversity loss, air and water pollution, soil desertification, marine pollution, and disease outbreak are the results of such practices. Despite experiences of the impacts and scientific evidence, global responses towards economically, environmentally, and socially sustainable development have been slow. The COVID-19 pandemic has further widened the Sustainable Development Goals' (SDGs) gap. The financial flows, from both the public and private sectors, directed at the implementation of the SDGs have been affected. Therefore, we need to develop an innovative financing policy to mobilise more resources to deliver SDGs. Sustainable finance taxonomy is one of the pathways and means to expand SDG financial flows.

Against this background, the participants identified and discussed the key trends and emerging issues for a possible future of financial taxonomy in Asia-Pacific. There is an increasing number of countries formulating and/or implementing green taxonomies. However, international collaboration in terms of sustainable finance remains volatile. Central banks can play a critical role in promoting green finance. Nation states are carefully examining the voluntary and mandatory nature of ESG disclosure. Serious concerns are widespread over increased greenwashing at all levels. Key stakeholders need to be further made aware of nature-based solutions. The funding gap for financing nature and conservation needs to be filled. Carbon taxation is regarded as one of the key instruments to scale up sustainability efforts in the private sector. Money flows have to support research and development of alternative technology such as seabed mining and CCS.

Four worlds have been created with the intersections of the following variables: "fragmented taxonomy", "globally harmonised

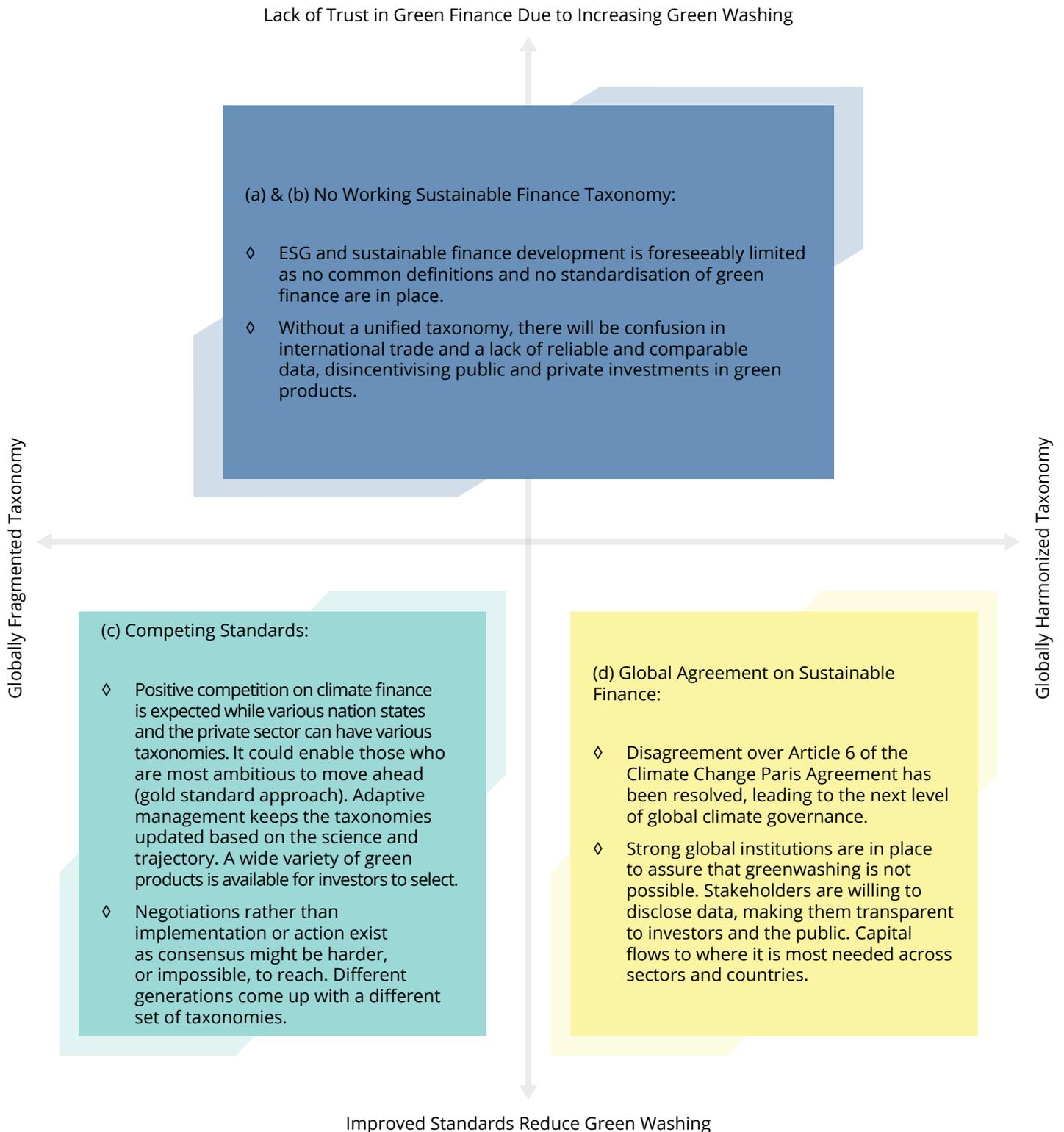
taxonomy", "increased greenwashing undermines trust in green finance" and "improving reporting standards in response to greenwashing".

With increased greenwashing, either in a fragmented taxonomy or globally harmonised taxonomy, a scenario that limits ESG and sustainable finance development is foreseeable as no common definitions and no standardisation of green finance are in place. Without a unified taxonomy, there will be confusion in international trade and a lack of reliable and comparable data, disincentivising public and private investments in green products. Implementation of standards, reporting and verification takes place only to a limited degree.

In a fragmented taxonomy with improved reporting standards, positive competition in regard to climate finance is expected while various nation states and the private sector can have various taxonomies. This enables flexibility and an adaptive management which keeps the taxonomies updated based on the science and trajectory. A wide variety of green products is available for investors to select. Negotiations rather than implementation or action exist as consensus might be harder, or impossible, to reach. Different generations come up with a different set of taxonomies.

In a globally harmonised taxonomy with reporting standards improved, disagreement over Article 6 of the Climate Change Paris Agreement has been resolved, leading to the next level of global climate governance. Strong global institutions are in place to assure that greenwashing is not possible. Stakeholders are willing to disclose data, making them transparent to investors and the public. Capital flows to where it is most needed across sectors and countries. However, effective mechanisms are of necessity to ease the divide between developed and developing countries in terms of financial contributions to climate action.

Alternative Futures Scenarios for the Geoeconomics of Sustainable Finance Taxonomy in 2030



4) Future of Fossil Fuels and Decarbonisation in Asia-Pacific

Coal is the dirtiest of fossil fuels and is set for rapid replacement with less environmentally damaging sources of energy. But the world has not yet found a good substitute for oil and gas in terms of its availability and fitness for purpose. There seems to be a consensus on the necessity of the transition to sustainable energy systems. However, Asian countries are at different levels of economic development, and have uneven resource endowments and technological capacities. It is generally believed that decarbonisation could be within the reach of advanced economies. Yet, decarbonising emerging economies may prove much harder due to expanding energy-intensive economies and population growth-driven energy demand.

Against this background, the participants identified and discussed the key trends and emerging issues for a possible future for fossil fuels in Asia-Pacific. Fossil fuels are increasingly becoming stranded assets. New technologies like carbon capture storage and utilisation are giving fossil resources a climate friendly future. Meanwhile, renewables have become cheaper than fossil resources. Shareholders have high demand for non-fossil fuel investment. To ensure a stable and secure energy supply, nation states engage in competition not only over renewable energy resources, but also critical minerals. Policy and financial support for the production of grey and green hydrogen is essentially needed. Inequality in terms of access to eco-friendly technologies is significant between developed and developing countries. With the declining role of fossil fuels in the energy mix, the winners and losers of decarbonisation are obvious. Energy diplomacy will be shaped both by state and non-state actors in the future.

Four sets of scenarios have been created with a combination of each of the following subjects: “energy diplomacy driven by states”, “mitigation/generation technology solutions lagging”, “new technology or alternative energy sources, e.g. CCS, gas, coal, oil” and “energy diplomacy driven by states and non-state actors”.

In a world with lagging technology development and energy diplomacy driven by states, the Paris Agreement has failed, leading to increasing costs for climate mitigation and adaptation, polluted air, food shortages, etc. Rising poverty and high competition for limited resources exists. There is growing inequality between countries which are able to afford, and those which do not have resources, to adapt to the changing climate. Cooperation between states is needed to share the costs of mitigation.

In a world of energy diplomacy driven by states with advanced technology development, competition and collaboration between countries can both exist. When state actors are not cooperative, winners and losers become clearer with increasing technology deployment and usage. Richer countries may take control over modern energy technology. This raises the cost of technology transfer and tariffs which leads to more trade conflicts. On the other hand, collaboration is possible as more alliances like clubs for critical minerals, climate change, etc. emerge.

In a scenario with the involvement of non-state actors and new technology in place, the future of energy development is more inclusive and equitable. New forms of international organisations include new actors and enforcement mechanisms. Lines of energy security are redrawn and enhanced as new sets of supply chains, new risks and critical minerals come into play. Energy systems are becoming more resilient to climate change. Decentralised power systems would be more resilient, but the jury is still out regarding what is the most resilient infrastructure, as systems that rely on long supply chains are more vulnerable.

In a world in which energy diplomacy is driven by new actors and geopolitical relations (NGOs, grassroots movements, groups/alliances of private enterprises) and technology development is lagging, social unrest and inequality are worsening as non-state actors exert their influence on energy development. Private enterprises block green technology development and are not able to make money from it. NGOs play a key role in fighting poverty, addressing problems via a bottom-up approach and settling disputes over energy-related conflicts.

Alternative Futures Scenarios for the Fossil Fuels in 2030

Energy Diplomacy Driven by Traditional Actors (e.g. US, China, Russia, G20, OPEC)

(a) Paris Agreement Failed:

- ◇ Increasing costs for climate mitigation and adaptation, polluted air, food shortages, etc.
- ◇ Rising poverty and high competition for limited resources exists. There is growing inequality between countries which are able to afford, and those which do not have resources, to adapt to the changing climate.

(b) Competition and Collaboration:

- ◇ When state actors are not cooperative, winners and losers become clearer with increasing technology deployment and usage.
- ◇ Richer countries may take control over modern energy technology. This raises the cost of technology transfer and tariffs which leads to more trade conflicts. On the other hand, collaboration is possible as more alliances like clubs for critical minerals, climate change, etc. emerge.

(c) Social Inequality:

- ◇ Non-state actors exert their influence on energy development.
- ◇ Private enterprises block green technology development and are not able to make money from it.
- ◇ NGOs play a key role in fighting poverty, addressing problems via a bottom-up approach and settling disputes over energy-related conflicts.

(d) Inclusive and Equitable Energy Future:

- ◇ New forms of international organisations include new actors and enforcement mechanisms.
- ◇ Lines of energy security are redrawn and enhanced as new sets of supply chains, new risks and critical minerals come into play.
- ◇ Energy systems are becoming more resilient to climate change. Decentralised power systems would be more resilient, but the jury is still out regarding what is the most resilient infrastructure, as systems that rely on long supply chains are more vulnerable.

No Technological Improvement (Status Quo: Fossil Fuels Will Be Used As Before)

New Technologies Applied to Reduce Carbon Emission of Fossil Fuels

Energy Diplomacy Driven by New Actors
(e.g. NGOs, Grassroots Movements, Groups/Alliances of Private Enterprises)

5) Reconciling Carbon Pricing, Competitiveness and EU Carbon Border Adjustment Mechanisms in ASEAN/APEC

Carbon pricing policies play a critical role in achieving the goals of the Paris Agreement and stabilising global temperatures. On the road to meeting their respective climate targets, over 20 jurisdictions in Asia-Pacific are at various stages of establishing their own carbon pricing initiatives, ranging from emissions trading systems to carbon taxes. In the meantime, Asian countries are taking a close and cautious look at the introduction of the EU's Carbon Border Adjustment Mechanism (EU CBAM). Positive and negative externalities for economic competitiveness need to be examined in detail. Against this background, we want to map key trends, build up corresponding scenarios and forecast possible futures for carbon pricing development in Asia-Pacific.

Against this background, the participants identified and discussed the key trends and emerging issues for a possible future of carbon pricing development in Asia-Pacific. The major issue in the debate was whether Article 6 of the Paris Agreement will be resolved appropriately in the upcoming UNFCCC Conference of the Parties (COP). Voluntary carbon markets are taking the lead. Regional or global ETS linkage is of necessity. There is an increasing bubble to offset emissions. Carbon pricing mechanisms have to be strengthened. In particular, the current carbon prices are not high enough to reduce emissions. The introduction of the EU's Carbon Border Adjustment Mechanism could increase trade tensions as well as widen the inequality between the developed and developing world. Climate diplomacy with more climate clubs of key stakeholders emerging is driving international carbon trading.

Four sets of scenarios have been created based on the combination of the following components: strong and weak EU CBAM impacts and Article 6 remains unresolved, and is achieved.

In a world of strong EU impacts with Article 6 unresolved, countries are adapting to the situation, initialising their own carbon pricing

policies. There will be more sub-regional cooperation between countries with similar economic structures. More voluntary markets are observable where companies which want to trade with the EU have to show that they have paid a carbon price, so internal carbon pricing would be widely applied. In the worst case, lots of trade conflicts and an unequal world would exist, driven by mistrust. Mega-trade agreements are revisited or reformed to reflect the main drivers of CBAM and trade angle.

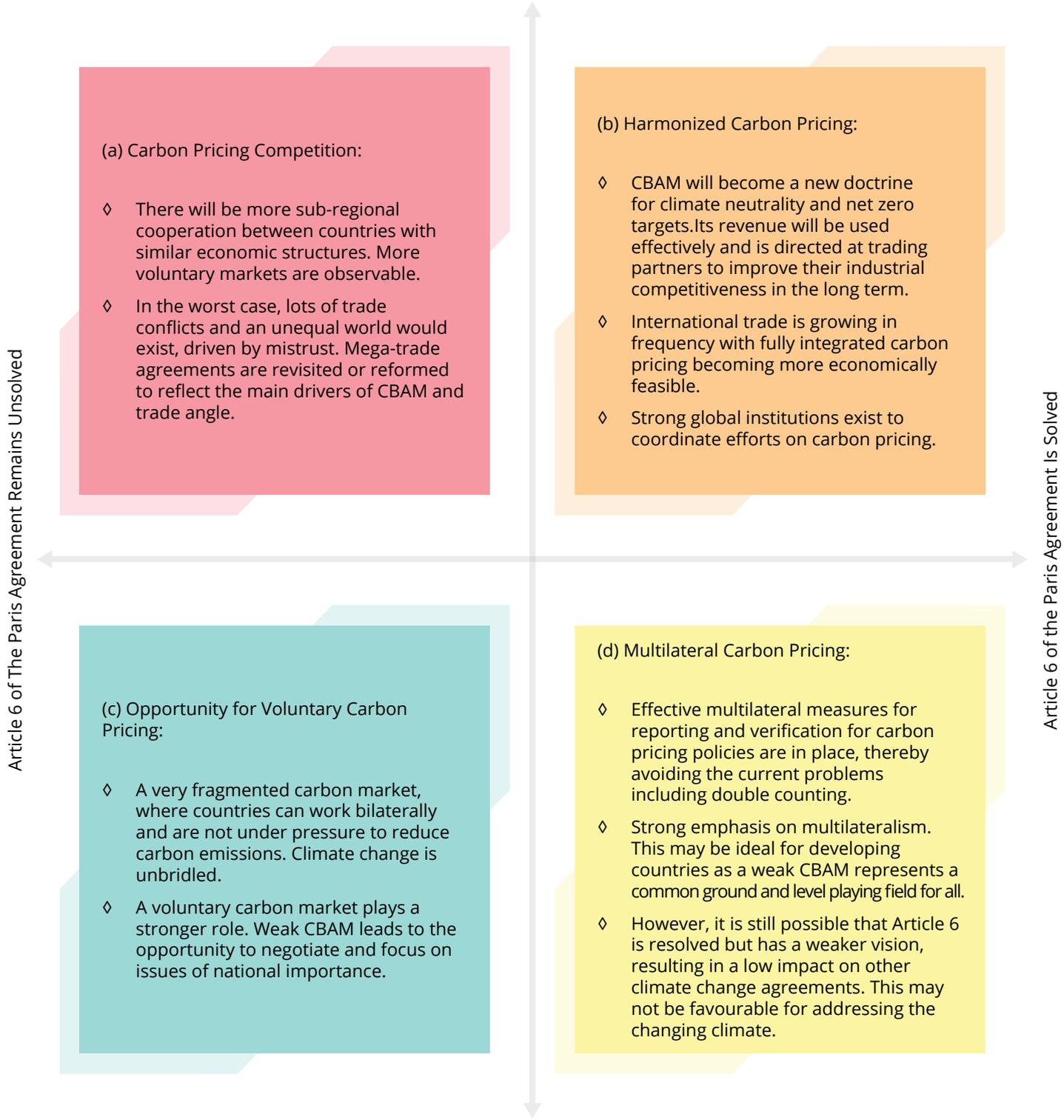
In another world, where Article 6 is achieved with strong EU CBAM impacts, CBAM will become a new doctrine for climate neutrality and net zero targets. CBAM revenue will be used effectively and is directed at trading partners to improve their industrial competitiveness in the long term. International trade is growing in frequency with fully integrated carbon pricing becoming more economically feasible. Strong global institutions exist to coordinate efforts on carbon pricing. A just energy transition could happen, but is improbable by 2030.

The scenario which is shaped by unresolved Article 6 and weak EU CBAM impacts, is a very fragmented market, where countries can work bilaterally and are not under pressure to reduce carbon emissions. Climate change is unbridled. A voluntary carbon market plays a stronger role. Weak CBAM leads to the opportunity to negotiate and focus on issues of national importance.

With Article 6 achieved and weak EU CBAM impacts, effective multilateral measures for reporting and verification for carbon pricing policies are in place, thereby avoiding the current problems including double counting. Article 6 works to weaken CBAM with strong emphasis on multilateralism. This may be ideal for developing countries as a weak CBAM represents a common ground and level playing field for all. However, it is still possible that Article 6 is resolved but has a weaker vision, resulting in a low impact on other climate change agreements. This may not be favourable for addressing the changing climate.

Alternative Futures Scenarios for the Carbon Pricing, Competitiveness and Carbon Border Adjustment Mechanisms in 2030

Strong Impacts of the EU Carbon Border Adjustment Mechanism



Weak Impacts of The EU Carbon Border Adjustment Mechanism

Impressum

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