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The Geopolitics of the Energy Transition in Greater Asia

Background, Dynamics, and Trend Mapping from within the Region

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Greater Asia is emerging as a major factor in the global energy transition. This shift is associated with growing independence from external actors such as the European Union and the United States, with unfolding developments increasingly concentrated within the region itself. Key trends include the monopolisation of critical raw materials, the formation of new alliances that intersect with new value chain interdependencies, and the adoption of innovative technologies like small modular nuclear reactors. At the same time, geopolitical tensions and crises have the potential to reshape the region and its energy transition. To remain relevant and effective in Asia, Germany and the EU need to ensure that their engagement is constructive and attuned.

Nearly a decade ago, in "New Economics of Oil", Spencer Dale postulated that energy flows would increasingly shift towards Asia. Today, Greater Asia — in its broadest sense — is the world's largest importer and producer of energy: a vast, politically and economically diverse yet increasingly interconnected region stretching from Japan in the east to the Arabian Peninsula in the west, and from Russia in the north to Australia in the south. The region's significance for energy and climate extends beyond its geostrategic importance, its wealth of critical raw materials and components, and its global economic dominance. What sets it apart is its internal dynamism and growing autonomy, whether in shaping climate policy agendas, driving the energy trade, or emerging as a provider of cutting-edge technologies. This evolution represents a monumental shift from an era where technology, energy, and climate responses were dominated by Europe and the United States.

Over the past decade, subregions within Asia have significantly deepened their politico-economic ties and interdependencies, both across the Eurasian landmass and along the maritime routes connecting the Pacific and Indian Oceans with the Arabian Sea. This growing autonomy is reflected in the rise of new frameworks like BRICS+, which is heavily influenced by Asian actors and has recently expanded to include emerging Asian economies through the concept of "partner countries". Bilateral integration across Greater Asia is also advancing, as seen in the strengthening ties between Russia and China, despite the power imbalance

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in their relationship. Similar trends are evident between China and the Gulf States, including Beijing's role in facilitating the Saudi-Iran rapprochement and China's recent sovereign bond issuance in Saudi Arabia. Trade within the region is becoming increasingly significant too. The International Monetary Fund forecasts that intra-Asian trade will account for approximately 40 percent of global trade by 2030.

The region's interconnectedness and growing autonomy are particularly evident in the areas of energy and climate action. Examples include the development of carbon storage technologies, trilateral energy cooperation and regional hydrogen agendas. Although Greater Asia is among the largest sources of CO_2 emissions, it is also a key driver of clean energy and green technologies. For instance, Japan and South Korea have established new partnerships with Southeast Asia and Australia to foster the transition to clean energy.

Although European influence in Greater Asia is waning, these shifts still have significant implications for Germany and the EU — whether through the effects of global climate change, the dynamics of international energy markets, or broader geopolitical realignments. It is therefore essential to analyse the key trends and uncertainties in Greater Asia and their relevance for the regional energy transition — and to consider what role Germany and Europe can (and should) still play in this process.

Trends and uncertainties: A foresight perspective

Assessing the factors influencing future developments in terms of their likelihood and impact is a common approach in strategic foresight. This form of trend mapping is typically performed as a participatory process. In this instance, it was conducted during a pan-Asian expert forum held in Singapore in October 2024.

The participants worked in small groups to prepare baseline premises and identify influencing factors relevant to the guiding question: how will Asia's geopolitics and energy transition evolve between now and 2035? The experts then assessed and evaluated these factors using techniques and frameworks grounded in behavioural science. Such a mapping of key factors (see figure 1) facilitates the classification and political prioritisation of factors, particularly when devising risk mitigation strategies or developing scenarios for policy recommendations.

Two specific groups of influencing factors stand out as particularly important. The first is the *key trends*. These are factors characterised by high impact and low uncertainty; their development is largely predictable and they exert significant influence. The second group comprises *key uncertainties*, in the sense of factors that also have a high impact but are characterised by significant uncertainty. Their trajectories are unpredictable yet highly consequential.

Notably, the process identified factors with high impact (some of which qualify as key trends) and factors with high uncertainty, but there is no overlap between the two categories: in this case, there are no key uncertainties. This indicates that the factors shaping the region are relatively stable, making them amenable to integration into political planning.

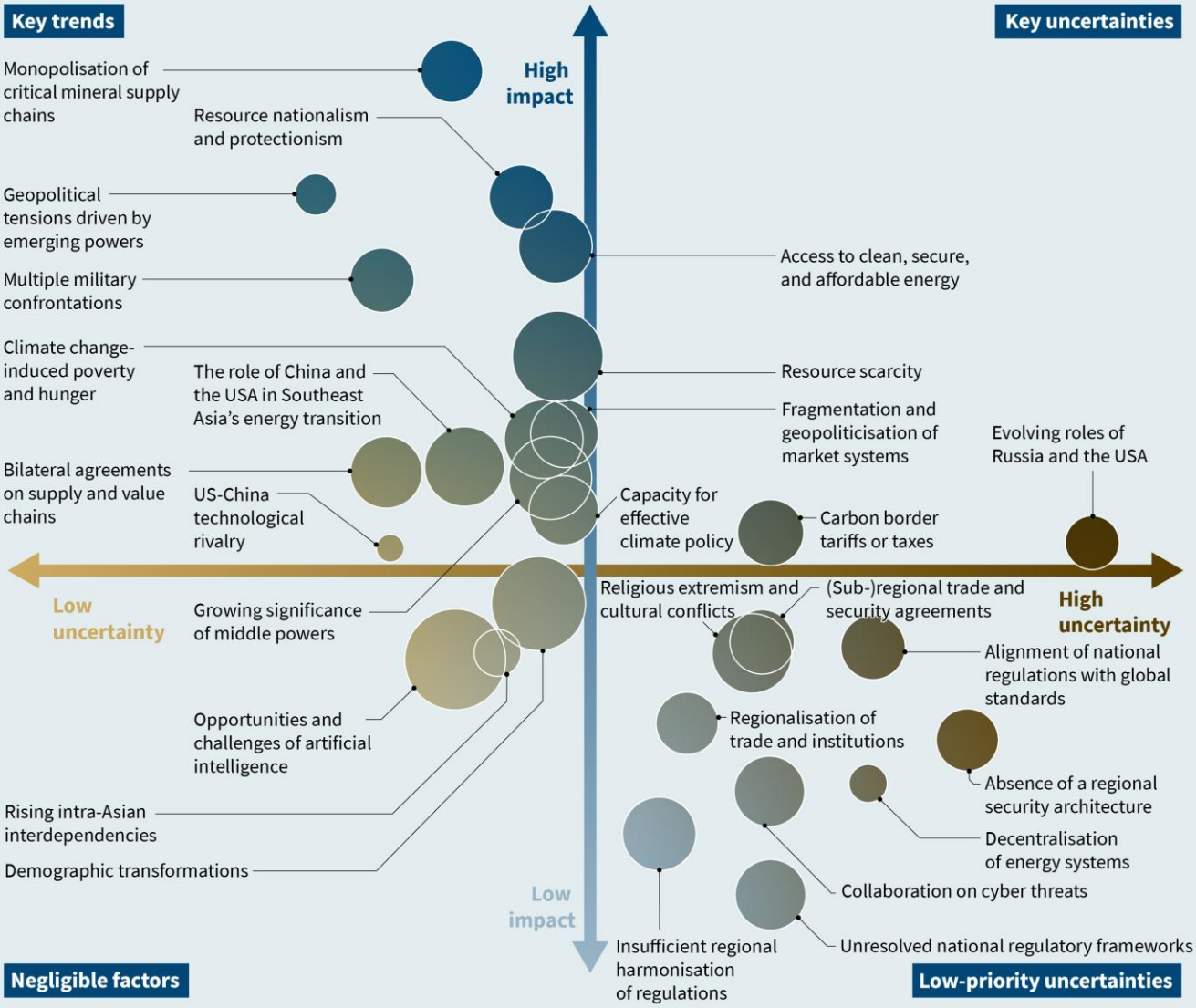
Geopoliticisation of the energy transition as a key trend

The most prominent and influential trend in the region is geo-economisation and projection of political power within the resource sector. Critical minerals that are essential to the energy transition are scarce and increasingly subject to monopolisation. At the same time, resource nationalism is on the rise. This is evident in Indonesia and the Philippines, where protectionist measures have already been applied to nickel.

A similar power dynamic could emerge in connection with control over technologies such as carbon capture and storage. However, the most significant key trend remains the monopolisation of the extraction and processing of raw materials, in particular by China in the rare earths sector.

Figure 1

Factors influencing the energy transition in Greater Asia: Impact and uncertainty



Source: Author's illustration based on the results of the expert forum in Singapore in October 2024.

The expert forum also anticipates a fragmentation of markets, which is closely associated with the risk of increasing geopoliticisation and militarisation across the region. External and internal conflicts are perceived as significant threats. The rise of new regional powers is considered inevitable and represents a potential challenge for the energy transition as it could disrupt key supply markets, in particular for critical raw materials.

Such power shifts contain the potential to escalate into military conflicts with broader regional implications. An overemphasis on security of supply, driven by heightened general security concerns, risks negative effects on affordability and sustainability. At the same time, the region can expect a decline in overall security and a growing trend of geopoliticisation and militarisation within energy relations.

Limited relevance: Security architecture and external actors

While the expert forum identified geopoliticisation and military conflicts as key trends, the development of regional secu-

rity architecture was regarded as relatively insignificant (and simultaneously uncertain). While this may seem paradoxical, it likely reflects a rejection of Western approaches to security-building and global order. Such concepts are perceived as unnecessary or even counterproductive when it comes to shaping the region's future in matters of security and energy.

The influence of external actors like Russia and the United States is viewed as uncertain but only marginally relevant. While Russia is geographically and economically part of the region, it is considered politically and culturally European, and thus partly external. This reflects the inward-looking focus of countries and subregions along the Northeast Asia—China—Southeast Asia—Gulf axis, where the strongest dynamics and interdependencies are emerging.

A critical stance toward external interventions is also evident. Conflicts such as Israel's war in the Levant and Russia's war in Ukraine are seen as Western aggression — as India's foreign minister told his EU counterparts in 2022. Paradoxically, US efforts to exert geopolitical and energy influence in the region seem to have weakened rather than strengthened Washington's standing.

Meanwhile, China has significantly expanded its influence through economic diplomacy and neutrality. Beijing's role in conflict resolution is widely welcomed, as exemplified by its (even if marginal) contribution to the Saudi-Iranian rapprochement.

Climate change, socioeconomics and nuclear power as drivers

As well as security factors, there are other significant drivers at play. One the most critical is the impacts of climate change, which are already visible in some economies and are expected to generate a climate-security nexus, in particular in relation to migration. However, within the region, addressing material needs and fostering socioeconomic development are seen as more crucial to advancing the energy transition. According to the expert forum, where the energy transition is successful it is primarily a tool for achieving energy security, creating jobs and industries, or establishing geopolitical power.

Nuclear energy plays a significant role. Many countries are investing in nuclear power to ensure energy security and sustainability, with both small modular units and large facilities in the mix. The expert forum considers this trend to be a fixed determinant of the energy transformation for the coming decade. However, it remains uncertain which actors will supply this technology — the United States, China, Russia or others.

While the region's enthusiasm for nuclear power appears to be a long-term phenomenon, critical questions often go unaddressed. Nuclear energy is seen as a readily importable technology, with South Korea emerging as a prominent supplier. However, little attention is paid to the broader value chain and its geopolitical dimensions, for example the issue of long-term security of nuclear fuel supplies. At the same time, the region exhibits a pragmatic approach to energy and climate issues, with Germany's nuclear phase-out widely regarded as perplexing. Attempts to convey Germany's position have not to date proven effective.

Regulation and decentralisation: multifaceted but of limited relevance

Regulation influences Asia's energy transformation in various ways: as a harmonising web across the region, as a driver of trade conflicts, and as an exogenous factor (such as the European carbon border adjustment mechanism). According to the expert forum, only the latter — regulations that directly impact energy markets and trade opportunities — are particularly relevant for the region.

The influence of national regulations and their regional harmonisation is regarded as limited. This is notable given that European actors frequently promote capacity-

building for regulatory harmonisation, which appears to find little resonance here.

Decentralisation of energy systems — another goal frequently promoted by German and EU climate diplomacy — is also considered to be of limited relevance, although how and if this trend manifests remains open. While an expansion of solar power and, in particular, small-scale nuclear reactors could boost decentralisation, this tendency is counterbalanced by large-scale giga-projects that often align more closely with the centralised governance models of autocratic states. While uncertain which approach will ultimately prevail, the expert forum considered this question relatively insignificant, as the expansion of renewable energy can be achieved through both centralised and decentralised methods.

Geopolitical and energy implications of hypothetical events

In addition to these developments and uncertainties, a number of specific scenarios could trigger sudden adjustments of how the energy transition plays out. Such disruptions within the region would also impact Europe.

Closure of the Strait of Hormuz

One conceivable scenario is the temporary closure of the Strait of Hormuz, possibly as a result of a war involving (or within) Iran. The likelihood of such a development is increased by Israel's ongoing military actions in the region and Donald Trump's election as US president.

Such an event would trigger an immediate reaction in the fossil fuel markets, leading to a sharp rise in oil and gas prices and potentially causing supply shortages, in particular of liquefied natural gas (LNG) for countries across the Indo-Pacific. Depending on the scale of the conflict the repercussions could extend to global supply chains, mirroring the disruptions seen during the COVID-19 crisis. It would also increase demand for Russian oil and gas and temporarily boost Russia's geopolitical weight, potentially altering the balance of power between Russia and China.

Even if such a crisis were quickly resolved, it could result in lasting policy changes. One likely outcome would be a stronger preference for renewable energy and nuclear power, mirroring the shifts seen in Europe following Russia's invasion of Ukraine and driving the energy transition in that direction.

Energy cooperation between Japan and Russia

A rapprochement between Russia and Japan in the energy sector could significantly reshape the region's energy dynamics and balance of power. Japan's reliance on LNG imports from the Gulf region and Australia would be reduced, while the United States might lose influence in Japan's energy market.

Russia could position itself as an alternative hydrogen supplier, serving South Korea and Taiwan as well as Japan, and thereby bolstering its negotiating power vis-à-vis China. This would also open new markets for LNG from Russia's Sakhalin Island and gas supplied through its Power of Siberia 2 pipeline. That could in turn increase China's dependency on energy imports from Central Asia, the Gulf region and the United States. Central Asian states might leverage this shift to improve their bargaining position with Beijing and secure inward investment.

Enhanced cooperation on energy and green technologies between Japan, South Korea and Russia could help reduce tensions in Northeast Asia while potentially isolating China. North Korea's influence might also decline, as this realignment would imply weaker relations with Russia.

Drought on the Mekong River

A severe drought on the Mekong River, which is a critical source of hydropower for Vietnam, Laos, Cambodia, Thailand and Myanmar, would profoundly impact regional

energy policies. A major reduction in hydropower capacity would force these nations to accelerate their adoption of solar, wind, and, possibly, nuclear power.

China could tighten its control over the region by constructing additional dams upstream, exacerbating tensions with downstream nations. In response, these countries might diversify their energy supplies, potentially through the deployment of small modular reactors.

Vietnam would be particularly affected, given the Mekong's central role in its energy infrastructure; Thailand and Laos would also need to reduce their reliance on hydropower. Singapore, which receives electricity from the Mekong region, could face pressure to secure alternative import sources.

Such a scenario would intensify the geopolitical competition for energy resources in the region, deepen China's reliance on gas imports from Central and Southeast Asia, and elevate the role of nuclear and renewable energy in Southeast Asia's energy landscape.

Conclusions and recommendations

The influence of Western external actors will continue to wane as Greater Asia becomes increasingly interconnected and inward-focussed. While this shift is not necessarily negative from a global perspective, it does pose challenges for Germany and the EU, whether in shaping the global energy transition or navigating geopolitical developments.

To maintain relevance in this changing landscape, Europe needs to rethink its approach to the region and reassess its underlying assumptions.

Climate security: Focusing on adaptation

Climate security has become a pressing issue for many actors in South and Southeast Asia. The region faces risks driven by climate-related changes, whether gradual processes like rising sea levels or sudden events like storms and flash floods. Forced migration, conflicts, and humanitarian crises are just some of the consequences.

The concept of climate security is already deeply embedded in German and European climate diplomacy, but it tends to emphasise climate change mitigation, in the sense of measures aiming to halt global warming (such as the transition to renewable energy). This is not necessarily compatible with the perspective in Greater Asia, where climate change is increasingly seen as an inevitable reality requiring adaptation rather than prevention.

Climate diplomacy in the region should therefore prioritise adaptation to climate change. This could include targeted capacity-building efforts based on genuine partnerships and tailored to real needs, as well as increased funding, technology transfer and the construction of relevant infrastructure.

The demand for adaptation measures will be immense, in particular for sea defences in coastal regions and Pacific islands. This emerging need is likely to become a new arena of competition for international influence. China is expected to step in as a key partner for affected nations, potentially creating dependencies with significant geopolitical implications for Europe. It is therefore crucial for Europe to position itself as a reliable and constructive partner, offering an alternative to China's possible dominance in this field.

Diversifying resource supply and engaging the right partners

Regional actors largely accept China's dominance as a reality to be managed rather than avoided. At the same time, access to resources and the geopolitics of trade have become pressing concerns, with growing indications of Chinese monopolisation of critical materials, components, and processes. This poses a substantial and foreseeable risk for the EU.

One approach would be to promote strategic investments that diversify the supply of critical raw materials within the

region while pursuing a broader range of resource partnerships. Diversification could be supported through direct investments and strategic purchasing programmes designed to foster new actors and suppliers. Additionally, promoting technologies with different or even flexible material requirements would help reduce dependencies and supply bottlenecks.

In this context — and more broadly in climate diplomacy and geopolitics — it is essential for Germany and Europe to identify the correct dialogue partners. Under certain circumstances, bilateral relationships may offer more effective openings than supranational or international organisations such as ASEAN. However, European policymakers must remain aware of the fluid nature of bilateral relations.

Regional actors also demonstrate a willingness to explore unconventional alliances, and scenarios such as even a rapprochement between Japan and Russia cannot be ruled out in the medium term. The status quo in the region should not be viewed as fixed, and European engagement must be carefully planned with this dynamic in mind.

Establishing constructive engagement and emphasising tangible opportunities

For most states in Greater Asia, immediate challenges such as socioeconomic development and stability are more important than pursuing climate policies for their own sake. European (climate) diplomacy must seek areas of convergence rather than insisting on ideological visions.

This applies to both the choice of partners and the direction of foreign policy. For example, if the aim is to counterbalance the influence of Russia and China, Europe must engage other states in the region openly and respectfully, regardless of differences in the political systems.

In recent years, Germany and Europe have lost standing in the region — whether due to their failure to fulfil promises on hydrogen partnerships or their insistence that regional actors take sides in conflicts such as Russia's war in Ukraine or Israel's war in the Levant (including demands to decouple from certain powers). Furthermore, European communication in many Asian countries is sometimes perceived as paternalistic.

A careful balancing of interests is essential to avoid losing sight of broader strategic objectives. By adopting a more pragmatic and equal approach, Europe can restore its credibility and position itself as a reliable and constructive partner in the region.

The diverging technological priorities of Asia and Europe need to be recognised and addressed. Instead of promoting abstract narratives of transformation, climate diplomacy should highlight the tangible benefits of the energy transition — namely, enhanced energy security, cost advantages, and local job creation. Raising awareness and improving access to financing are key here. Otherwise, high capital costs in politically fragile contexts will quickly thwart efforts to push renewable energy — and, thus, also inhibit any stabilising function they may have. Stability and economic growth are not merely outcomes of the energy transition: they are prerequisites for its success.

In Greater Asia, technologies such as small modular nuclear reactors are regarded as critical solutions for addressing supply challenges and accelerating the shift to clean energy. However, fundamental geopolitical questions remain unresolved, including fuel-related dependencies and waste management. These knowledge gaps carry long-term risks that have so far been largely overlooked.

Asia remains a dynamic and flexible region that is open to compromise and to German and European engagement — provided that the interactions are constructive, valued, and on an equal footing.

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