Aquila Capital

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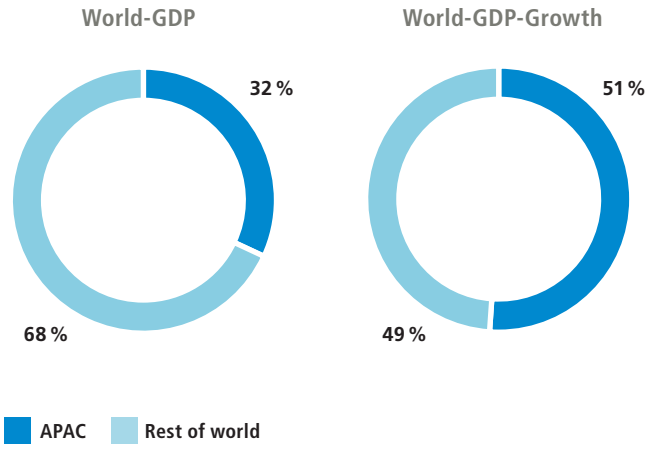
MANAGEMENT SUMMARY

ASIA-PACIFIC: INVESTMENTS IN RENEWABLE ENERGY – THE TIME IS NOW

Asia-Pacific Driving the global economy

The high dynamism in the economies of the Asia-Pacific region is the result of advancing industrialisation and the accompanying development of the middle class. While the region's contribution to global GDP is just under one-third, it is responsible for more than half of global economic growth.

Figure 1: Share APAC of global GDP and GDP-growth[1]

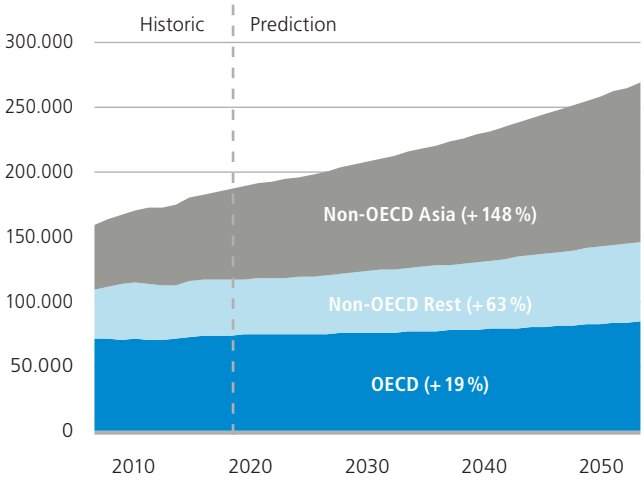


A unique mix of countries, from the high-tech countries of East Asia and Australia, to the emerging economies of China and India, to the developing countries of ASEAN, offers enormous diversification potential. In addition to the world's fastest growing sales markets, rising living standards and industrialisation are creating an dynamic growing demand for energy.

Appetite for energy

While energy demand in industrialised nations is largely decoupled from growth rates, the economic dynamics in less developed economies have the same effect on energy demand. Figure 2 illustrates this relationship. Asian non-OECD countries are responsible for two-thirds of the growth in global energy demand, which will increase by 70% from 2010 to 2050.

Figure 2: Energy demand[2]



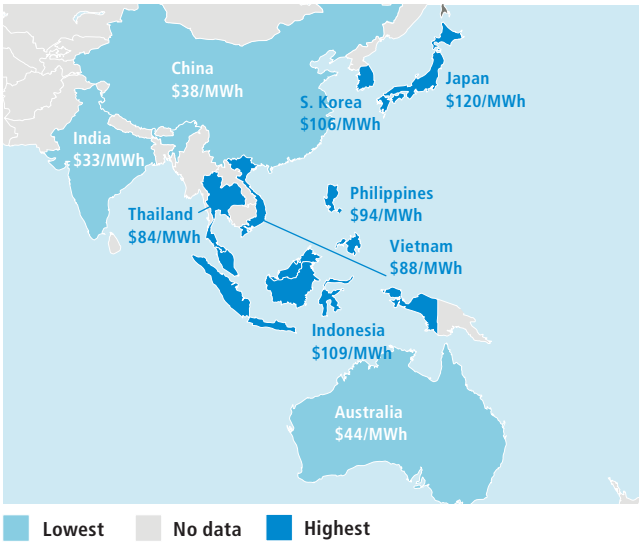
The focus in OECD countries is primarily on transforming the energy system. Current and potential growth in APAC on the other hand - especially in developing Asia - presents challenges and opportunities to sustainably meet rising energy demand. In terms of global climate aspirations and increasing societal demands, the focus should be on an ecologically sustainable development of energy systems. The reduction in prices for renewable technologies resulting from economies of scale and technological progress in recent years ensures the basic prerequisite – competitiveness.

[1] *Worldbank (2020)*
[2] *IEA (2019)*

Current market environment

While renewable energy is already the cheapest source of new capacity in most countries worldwide, this is not the case for all countries in the APAC region. Figure 3 shows clear differences between the large countries India, China, Australia and the smaller island states of ASEAN and the East Asian countries Japan, Taiwan and South Korea.

Figure 3: LCOE's APAC 1st HY 2020[3]



Despite comparable climatic conditions, the overall price for generating a MWh of solar power shows significant differences. The average generation costs for solar power in Japan are more than three times higher than in neighbouring China. In the tropical latitudes of ASEAN, the costs are also more than double those of Australia.

As a result, without taking external costs into account, electricity generated from coal is still cheaper on average in these countries. However, the expansion of coal-fired power plants, which has long been favoured for this reason, is facing increasingly strong headwinds.

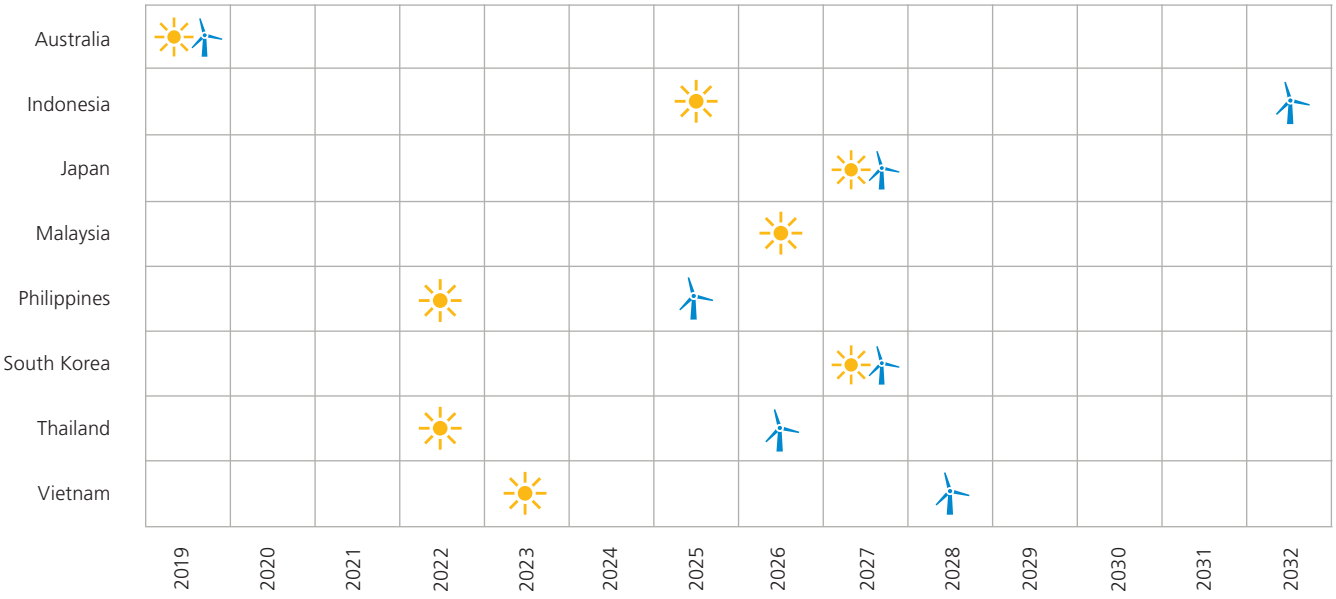
An expansion of fossil capacities would continuously increase the import dependency of countries and thus endanger energy security and national budgets. Furthermore, banks, insurers and investors worldwide are withdrawing from fossil technologies. On the one hand, this is due to sustainability aspects, on the other hand, they are no longer willing to bear the risks of these assets, as the dynamic reduction in the prices of renewable technologies continues and import restrictions as well as interest groups are solely responsible for the still existing competitiveness of coal.

[3] BNEF (2020)

Turning points and learning curves

After grid parity has been achieved in most regions of the world, competitiveness in the countries under consideration is also only a question of time. The significantly higher resources for solar PV due to the geographical location compared to Europe as well as a dynamic cost reduction of renewable technologies will reorder the competitive situation in the coming years. Figure 4 illustrates the points in time at which solar and wind energy represent the cheapest sources of new energy production.

Figure 4: Achieving grid parity Solar and wind energy in respective countries[4]



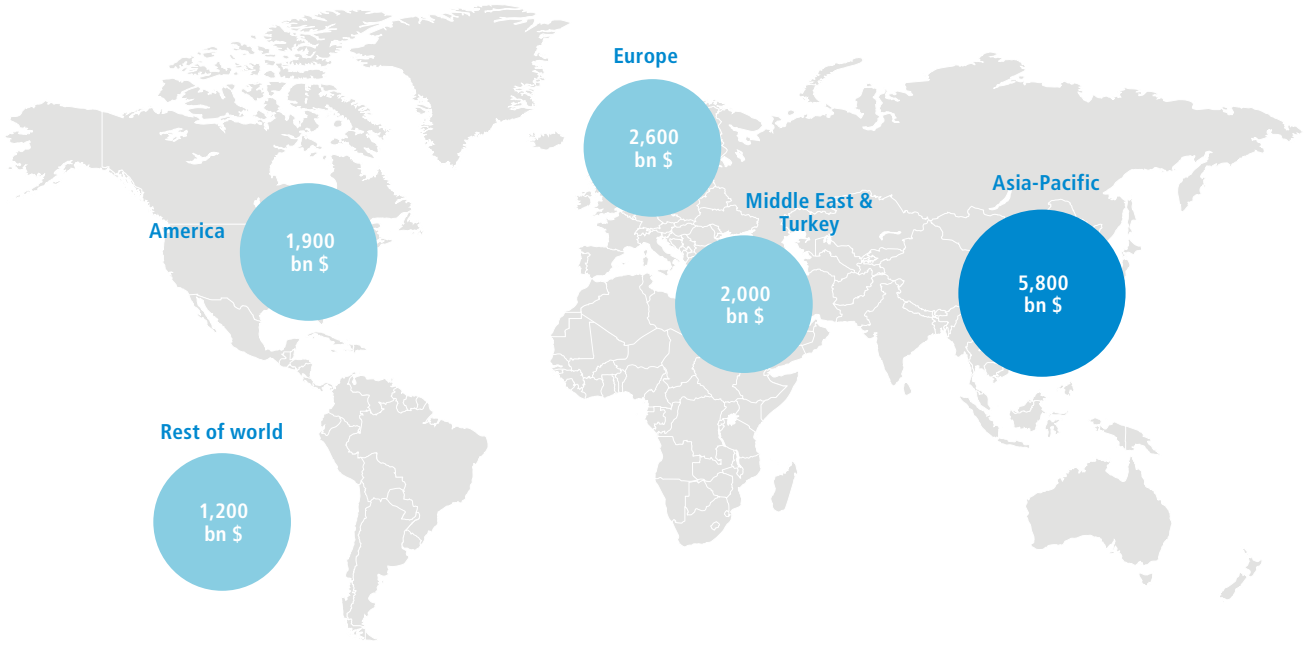
Moreover, it becomes clear that even the smallest changes in the framework parameters, such as government incentive mechanisms, changes in regulation (import restrictions), improvement of financing conditions, would immediately change the order of competitive relations. In the interplay of economic superiority and increasing global activities to curb climate change - the EU, Japan, South Korea, China and prospectively also the USA (Biden's programme) are striving for net-zero emissions – the development of sustainable energy systems in APAC has no alternative.

[4] *BNEF (2020)*

Investment requirements

Driven by the rapid growth in Asia, especially based on the developing and emerging countries in the region, the demand for further capacity is increasing significantly. According to estimates by the International Energy Agency (IEA), for example, ASEAN's economic output will double by 2040. In the same period, the population will increase by 120 million people. Against the backdrop of these developments, energy demand will increase by 60 % until 2040. Demand for electricity will even double during this period, growing at a rate of 4 % per year, almost twice as fast as the rest of the world.

Figure 5: Investments in new capacity 2019–2050[5]



The Asia-Pacific region is responsible for 40 % of global investment needs. Figure 5 illustrates the enormous demand for capital. Private investment plays a key role in providing the required capacity. Accordingly, it is expected that markets will continue to open up, framework conditions will improve, and numerous opportunities will arise for investors. The competitiveness of renewable energies and the natural resources of the region also support the development of sustainable energy systems from a purely economic point of view. The APAC region therefore offers enormous potential for private investors in the area of renewable generation capacities.

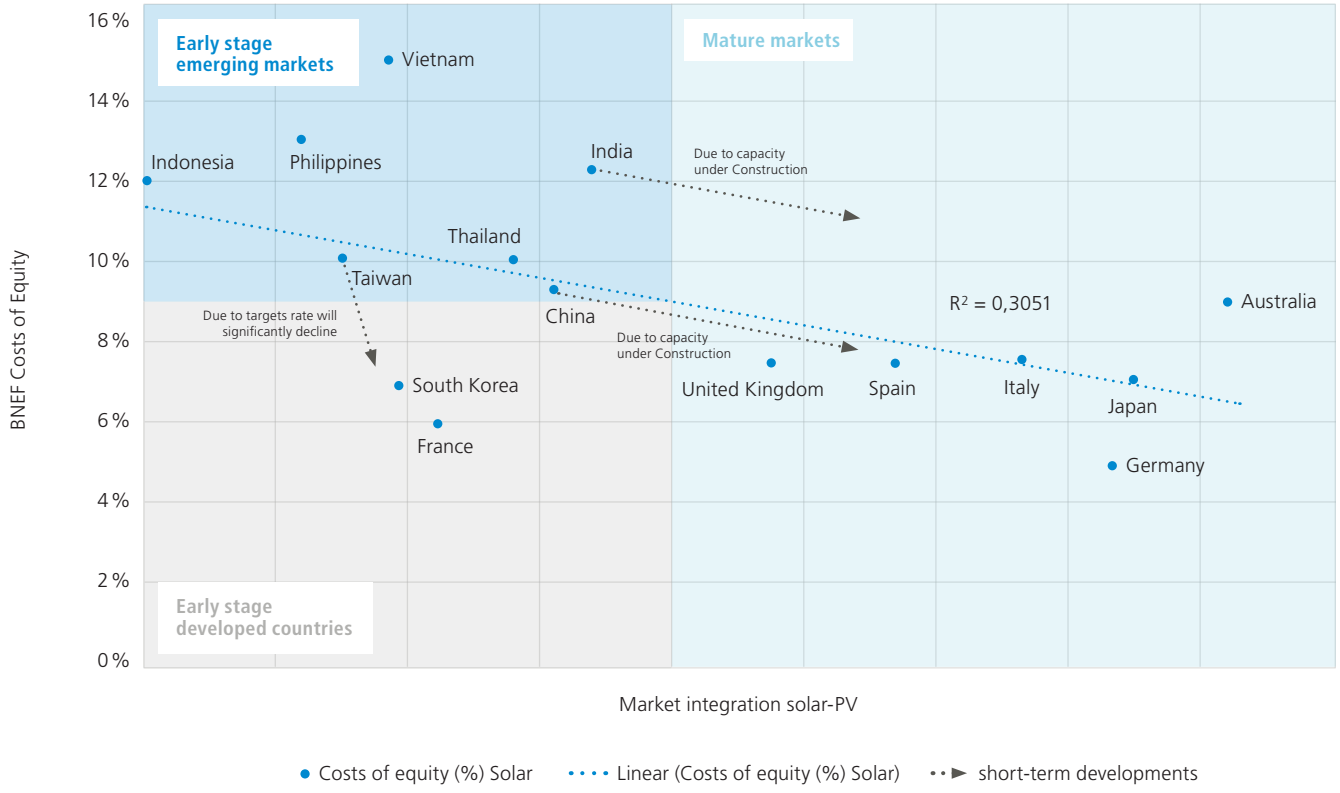
[5] *BNEF (2020)*

Expected returns on renewable energy investments in APAC

Renewables are on track to increase both their relative and absolute share of electricity markets in the APAC region. Supply bottlenecks – resulting from largely unviable thermal power plants and increasing import dependency – are matched by the world's most dynamic demand for energy. The driving force of the economic upswing in the developing countries – foreign direct investments – as well as the increasing importance of sustainability aspects of the corporations in the East Asian countries lead to a significant increase in the demand for renewable energy. In addition to this market constellation, the dynamically increasing competitiveness of wind and solar PV technologies is of decisive importance. The purely economic superiority combined with the comparatively extremely short construction phases of renewable energies are thus the main drivers of future development.

The respective market maturity is a significant determinant of expected returns. Maturity of the economy and the expansion of renewable energies that has already taken place decisively explain the risk premium that can be achieved.

Figure 6: Equity capital costs and market integration of solar-PV in 2020 – international comparison[6]



The ambitious climate targets in Japan and South Korea, similar to those in Europe, will form the basis for additional investment incentives. In addition, banks and institutional investors are becoming increasingly familiar with the asset class and are providing debt capital at competitive conditions, which will have a positive impact on the return on equity that can be achieved. The high risk-adjusted return expectations in developing countries offer attractive opportunities for an early entry into the still young markets. Due to the importance

[6] *Europe: Bloomberg New Energy Finance (2020);*
APAC: Bloomberg New Energy Finance (2020) / Aquila Capital Research (2020)

of foreign direct investment and the relocation of value-added processes by international companies, a steady improvement in the framework conditions in developing countries can also be expected.

In view of the increasing global activities to mitigate climate change there is no alternative to the development of sustainable energy systems in APAC. Due to this environment, we now see ideal conditions to participate in the growth of renewable energies in APAC. Compared to Europe, the current developments and the still low level of expansion offer higher return potential for companies that are able to manage existing risks.

Gain more insights by reading the full version. Get access to our comprehensive analysis "**Asia Pacific: Investments in Renewables – The Time is Now"**

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