



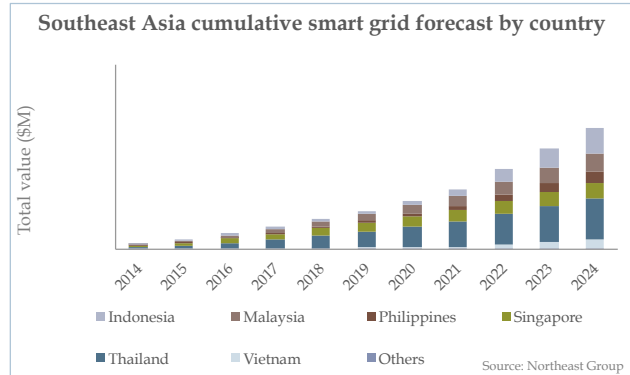
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Southeast Asia Smart Grid: Market Forecast (2014 – 2024)

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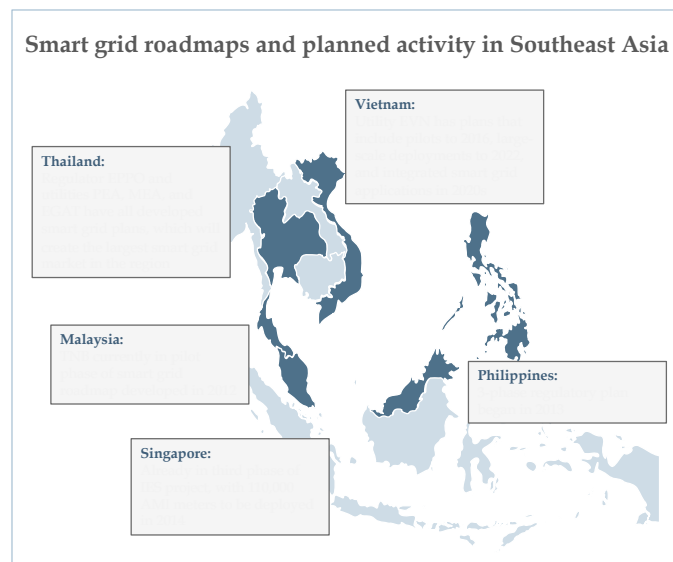
Southeast Asia Smart Grid: Market Forecast (2014-2024)

Southeast Asia is a growing smart grid market that continues to show extensive progress and promises significant benefits for consumers and large opportunities for vendors by the latter part of this decade. Countries in the region continue to grow and electrify quickly, accelerating the benefits of smart grid and spurring governments to develop smart grid roadmaps and deployment plans. Overall, Southeast Asia still trails most other emerging market regions for smart grid potential, but in the past two years since the first volume of this study was published, it has closed the gap significantly, and high growth ensures continued progress in the near term.



As a region, Southeast Asia has the highest projected GDP growth rate of all emerging smart grid markets, outside of China and India. All countries, except the developed market of Singapore, will see GDP growth rates average above 5% per year through 2018. By 2024, Southeast Asian countries will likely have electricity demand profiles similar to some Latin American and Eastern European countries where large-scale smart meter deployments are already being carried out. These high GDP growth rates are not guaranteed however, and will present structural, political, and social challenges to Southeast Asian countries. Understanding how these countries plan to manage their growth is critical to understanding the role that smart grid will play in Southeast Asia.

Most importantly, Southeast Asian countries—most of which are not endowed with large supplies of traditional energy resources—will face severe energy challenges in order to sustain industrial development. These can be met through both traditional resources (such as coal and hydro plants and LNG imports) and non-traditional resources such as renewable energy, energy efficiency, and smart grid-enabled solutions such as demand

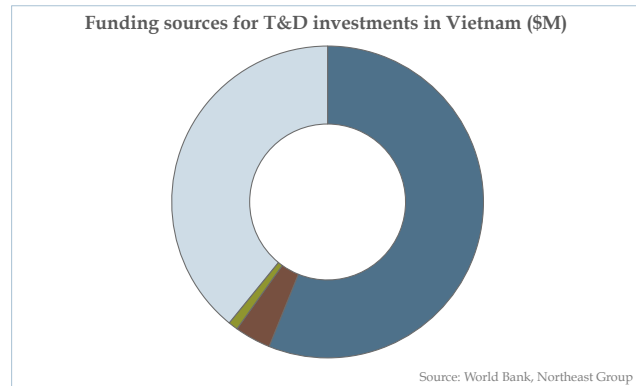


response. Countries that are currently looking more towards renewable energy and energy efficiency are likely to set regulatory frameworks to support smart grid in the near term. These regulations are likely both because of the direct role that smart grid infrastructure plays in supporting these programs, and because these programs are leading indicators of governments that will look to smart grid infrastructure as a solution to growing challenges.

Implementing smart grid infrastructure can help Southeast Asian countries with high growth in ways beyond simply helping manage energy supply shortages through demand response and

other applications. As these economies grow, existing grid infrastructure will increasingly prove insufficient, and power reliability will become more of an issue. Smart grid infrastructure throughout the transmission and distribution networks will help utilities proactively address weaknesses and maintain higher power quality and reliability. Additionally, economic growth could lead to higher rates of non-technical distribution losses as new customers are added to the grid and their bills increase due to higher

consumption rates. Currently, Southeast Asian countries have low-to-moderate theft rates when compared with other emerging markets, but without smart meters non-technical losses could grow alongside the overall economies.



Economic growth also creates new demand, presenting opportunities that smart grid infrastructure is uniquely placed to serve. For example, consumers will increasingly purchase new and more advanced electronics that will exacerbate electricity shortages if not managed effectively through demand response or through additional generation resources such as distributed generation. As these countries become manufacturing hubs, strong local demand for smart grid infrastructure can help these countries become global leaders in this field, creating positive economic spillovers. And finally, overall high economic growth rates will enable high levels of public and private investment in demonstration projects that can set the stage for large-scale deployments. In short, high economic growth rates will create new opportunities while also helping overcome some of the existing barriers in the region, such as the high cost of smart meters in per-capita consumption terms.

In the past two years since the first volume of this study was published, many of these factors have already played out. Southeast Asian countries have grown as fast as previously projected, and smart grid activity has kept pace. Work has continued on projects in Malaysia, the Philippines, Singapore, and Thailand, as well as new stronger regulations, particularly in the Philippines and Thailand. Projects and policies like these are expected to increase throughout the region in the medium term, as all countries in the region will be facing challenges that smart grid infrastructure will be best placed to address. With stronger regulatory models to follow and indicators pointing towards greater savings from smart grid, deployments will be well developed in all major Southeast Asian countries by early in the next decade.

Key questions answered in this study:

- How large will six smart grid market segments and fourteen sub-markets be in 2024?
- What partnerships are forming between Southeast Asian and international vendors?
- How are smart grid programs being funded?
- Which utilities have developed smart grid roadmaps?
- What are the details of existing smart grid pilot projects?

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